UNDERSTANDING THE FACULTY EXPERIENCE DESIGNING, DEVELOPING, AND DELIVERING MASSIVE OPEN ONLINE COURSES TO INFORM ACADEMIC LEADERS CONSIDERING MOOC INITIATIVES.

By

RICHARD BRYAN COLLINS

A Dissertation Submitted to the Faculty
In the Educational Leadership Program
Of the Tift College of Education
At Mercer University
In partial fulfillment of the Requirements for the degree

DOCTOR OF PHILOSOPHY

Atlanta, GA
2017
UNDERSTANDING THE FACULTY EXPERIENCE DESIGNING, DEVELOPING, AND DELIVERING MASSIVE OPEN ONLINE COURSES TO INFORM ACADEMIC LEADERS CONSIDERING MOOC INITIATIVES.

By

RICHARD BRYAN COLLINS

Approved:

J. Kevin Jenkins, Ed.D.
Dissertation Committee Chair

Pamela A. Larde, Ph.D.
Dissertation Committee Member

Carl E. Davis, Ed.D.
Dissertation Committee Member

Jane West, Ed.D.
Director of Doctoral Studies, Educational Leadership

J. Kevin Jenkins, Ed.D.
Chair of Educational Leadership

D. Scott Davis, Ph.D.
Dean, Tift College of Education
DEDICATION

This dissertation is dedicated to my family. This work is dedicated to my wife, Sameea who encouraged me to “tie a bow” around my education by pursuing the PhD. You have inspired me to do this and helped me accomplish this feat in so many ways. I am eternally grateful to you for being my faithful companion and coach through the tough times. This work is also dedicated to my son Connor and to my daughter Mae Lea, you kept a confidence and you supported me through the times of intellectual frustration with quiet understanding. You sacrificed and allowed me the time to study, research, and write like mature adults. I hope that I have been an example to you of dedicated work toward your goals. I love you all more than words can express.
ACKNOWLEDGEMENTS

I would like to thank the selection committee at Mercer University for taking a chance on me by accepting me into this program and allowing me the opportunity to pursue this level of education. I would also like to thank the members of my cohort who all banded together to help each other through course work, pass comps, and cheer one another along through the dissertation process. I am proud to have made your acquaintances and I enjoy learning of your continued success.

I would like to thank the Faculty of Tift College of Education. You have paved the way for numerous students to succeed through the excellence of your teaching and mentoring through the dissertation process. You are all special people and I am honored to have learned at your feet. I am also honored to have had the opportunity to get to know a number of you on a more personal level and happily call you a friend.

I would like to give a special note of thank to those who have served on my dissertation committee for the hours of reading and commenting on my research and writing in an area of research that may not have been interesting to you. I thank you for your input, mentoring, and diligence shepherding me through this process. I want to thank Dr. Kevin Jenkins for serving as chairman. I appreciate your support and encouragement and for the occasional reality check. I would like to thank Dr. Pamela
Larde for guiding me through the methodological portion of this dissertation, for your constant encouragement and the kind way you offered feedback. I want to thank Dr. Carl Davis for taking the time to be my reader and for jumping into the process at a late stage to offer your expertise. Thank you all for being a part of my educational journey.
TABLE OF CONTENTS

ACKNOWLEDGEMENTS........................................................................................................ iv

ABSTRACT................................................................................................................................ x

CHAPTER

1. INTRODUCTION TO THE STUDY ...........................................................................1

   Statement of the Problem.........................................................................................5
   Research Question ...................................................................................................7
   Theoretical Framework .............................................................................................7
   Significance of the Study ..........................................................................................8
   Procedures ................................................................................................................9
   Limitations and Delimitations .................................................................................10
   Definition of terms ..................................................................................................11
   Summary ..................................................................................................................12

2. REVIEW OF RELATED LITERATURE

   MOOC History .........................................................................................................18
   MOOC Dichotomy .......................................................................................................24
   MOOC Pedagogy ........................................................................................................98
   MOOC Motives and Objectives ...............................................................................34
   MOOC Challenges ....................................................................................................36
   Completion Rates ......................................................................................................37
   Access ......................................................................................................................39
   Affordability .............................................................................................................41
   Accreditation ...........................................................................................................45
   MOOC Research Gaps ..............................................................................................47
   MOOC Disruptive Innovation ....................................................................................48
   Summary ..................................................................................................................51
TABLE OF CONTENTS (Continued)

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. METHODOLOGY</td>
<td>53</td>
</tr>
<tr>
<td>Rationale for the Study</td>
<td>53</td>
</tr>
<tr>
<td>Research Question</td>
<td>54</td>
</tr>
<tr>
<td>Research Design</td>
<td>55</td>
</tr>
<tr>
<td>Population</td>
<td>57</td>
</tr>
<tr>
<td>Sample</td>
<td>58</td>
</tr>
<tr>
<td>Participants</td>
<td>59</td>
</tr>
<tr>
<td>Instrumentation</td>
<td>60</td>
</tr>
<tr>
<td>Validation</td>
<td>61</td>
</tr>
<tr>
<td>Data Collection</td>
<td>61</td>
</tr>
<tr>
<td>Institutional Review Board Approval</td>
<td>62</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>63</td>
</tr>
<tr>
<td>Reporting Results</td>
<td>63</td>
</tr>
<tr>
<td>Summary</td>
<td>63</td>
</tr>
<tr>
<td>4. RESULTS</td>
<td></td>
</tr>
<tr>
<td>Research Question</td>
<td>68</td>
</tr>
<tr>
<td>Pilot Study Results</td>
<td>69</td>
</tr>
<tr>
<td>Respondents</td>
<td>70</td>
</tr>
<tr>
<td>Findings</td>
<td>74</td>
</tr>
<tr>
<td>Summary</td>
<td>109</td>
</tr>
<tr>
<td>5. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS</td>
<td></td>
</tr>
<tr>
<td>Summary of the Study</td>
<td>112</td>
</tr>
<tr>
<td>Summary of the Major Findings</td>
<td>114</td>
</tr>
<tr>
<td>Discussion of Findings</td>
<td>127</td>
</tr>
<tr>
<td>Conclusions</td>
<td>153</td>
</tr>
<tr>
<td>Implications</td>
<td>136</td>
</tr>
<tr>
<td>Recommendations for Future Research</td>
<td>137</td>
</tr>
<tr>
<td>Summary</td>
<td>138</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>140</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS (Continued)

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPENDICES</td>
<td>155</td>
</tr>
<tr>
<td>APPENDIX A: Piloted Interview Questions</td>
<td>156</td>
</tr>
<tr>
<td>APPENDIX B: Institutional Review Board Approvals</td>
<td>159</td>
</tr>
</tbody>
</table>
ABSTRACT

RICHARD BRYAN COLLINS
UNDERSTANDING THE FACULTY EXPERIENCE DESIGNING, DEVELOPING, AND DELIVERING MASSIVE OPEN ONLINE COURSES TO INFORM ACADEMIC LEADERS CONSIDERING MOOC INITIATIVES
Under the direction of J. KEVIN JENKINS, Ed.D.

The work of academic faculty is what defines institutions of higher learning (Steward, 2013). Institutional leaders and decision-makers need valid, qualitative research information regarding faculty lived experiences in order to understand the opportunities and challenges of designing, developing, and delivering instruction on a massive scale. From 2008 to 2011 the Massive Open Online Course (MOOC) went from an obscure experimental course to full-scale adoption by world-renowned institutions without consulting experts in the field of online learning, utilized older pedagogical frameworks, and still few have asked the academic faculty designing, developing, and delivering MOOCs if MOOCs are a viable learning experience or if MOOCs further institutional goals. The researcher chose to conduct a classical phenomenology by developing a 10 question semi-structured telephonic interview (Crotty, 1998; Husserl, 1931). Seven participants, four male, three female from the United States and Canada offered answers to the interview which resulted in rich data regarding their lived experiences. MOOCs can be extremely expensive and take an excessive amount of a professor’s time and energy to do well.
Currently, MOOCs have not proved to be the educational panacea many had hoped however, MOOCs are likely here to stay for the foreseeable future as rapid changes become the new normal for higher education. Because of the emerging nature of this field of research numerous opportunities for future research are open. Institutional leaders need better understanding of costs and learning outcomes in MOOCs in order to evaluate the challenges and opportunities posed by MOOC initiatives in their respective institutions.
CHAPTER 1

INTRODUCTION TO THE STUDY

The cost of higher education continues to rise and according to research, the rates of annual increase have outstripped the rate of inflation (Archibald & Feldman, 2012; Arum & Roksa, 2011; College Board, 2014; Hechinger, 2013). As a consequence many are beginning to ask if a college education is even worth the soaring personal debt without the promise of employment adequate to service that debt in a reasonable timeframe (Anderson & McGreal, 2012; Benson, Estevá, & Levy, 2015; Paquette, 2015). While issues of higher education accessibility and affordability continue to mount, state legislatures also continue to back away from higher education funding (Archibald & Feldman, 2012; Derochers & Kirshstein, 2012; Rocco, 2015; Lowe, 2014). This situation places most of the cost of a college education on the students and their families (Bowen, 2012; Cormier & Siemens, 2010; Wolf, Baumol, & Saini, 2014). Bowen (2012) indicates that there is a growing consensus among higher education leaders that online education in various delivery platforms, including MOOCs, must be a part of the future to educate more students at reduced cost. This is the economic and political environment that has given rise to the Massive Open Online Course or the phenomenon colloquially known as
Massive Open Online Courses (MOOCs) are a recent phenomenon in online higher education and therefore have only a small, but growing, body of research material covering their influence and viability in regards to learning, pedagogy, quality, sustainability, and financial models (Clara & Barbera, 2013; Daniel, 2012; Fischer, 2014; Hollands & Tirthali, 2014; Jacoby, 2014; Kahlenburg, 2013; Liyanagunawardena, Adams, & Williams, 2013; Lombardi, 2014; Norman, 2014; Vu & Fadde, 2014; White, Davis, Dickens, Leon, & Sanchez-Vera, 2014). MOOCs have received an extraordinary amount of national media attention surrounding their potential to reach the global masses and to be essentially free of charge to the participant (Daniel, 2012, Laaser, 2014; McCluskey & Winter, 2013; Pappano, 2012, Sandeen, 2013; Taneja & Goel, 2014). Pappano (2012) is often credited with labeling 2012 “the year of the MOOC.”

The very first MOOC was developed and distributed at the University of Manitoba by George Siemens and Stephen Downes in 2008 (Siemens & Downes, 2008; Daniel, 2012). According to Cormier and Siemens (2010) the course had twenty-five registered, for-credit students in the course before it was opened up to those who wanted to participate in the course without receiving credit added nearly 2,300 learners from around the globe (Cormier & Siemens, 2010). The researchers reflected upon the benefit of having these additional global learners added needed substance to the class (Cormier & Siemens, 2010). The next major MOOC was in the fall semester of 2011 when
Stanford professor Sebastian Thrun offered his Introduction to Artificial Intelligence course using the MOOC format (Fischer, 2014; Gasevic et al., 2014; Jordan, 2014). These early iterations of the MOOC prefigured a dichotomy of application into the cMOOC or connectivist MOOC which was the brainchild of Siemens and Downes, and the xMOOC or instructivist MOOC which uses older forms of online pedagogy (Daniel, 2012; Hollands & Tirthali, 2014). From these early successes several third-party, for-profit technology platforms have developed to deliver MOOCs in partnership with participating universities (Billington & Fronmueller, 2012).

A growing number of higher education institutions are beginning to view MOOCs as a vehicle for extending their influence, globally, by making higher education more accessible and more affordable to participants in developing nations (Belleflamme & Jacqmin, 2014; Hollands & Tirthali, 2014; Taneja & Goel, 2014; White et al., 2014). As a result of the national attention and the potential MOOCs could hold for the future, increasing numbers of higher education institutions in North America, Europe, and Australasia are flocking to the major MOOC providers in an effort to enter the MOOC market and to be on the cutting edge of their development (Baggaley, 2014a; Daniel, 2012; Gasevic et al., 2014; Wilson, Harnett, Brown, Jamieson, & Symonds, 2014).

The potential areas of research study in MOOCs are plentiful from the many challenges facing the development of MOOCs for credit to finding a sustainable, viable economic model (Hollands & Tirthali, 2014; Wilson et al., 2014). Researchers are also interested to know what motivations guide the decision to partner with MOOC platforms
and who are the organizational players making these decisions and negotiating the contracts (Hollands & Tirthali, 2014; White et al., 2014). It remains to be seen whether or not the partnerships between MOOC providers and institutions reflect the best interests of Higher Education as a whole, individual institutions, students, or faculty members or if all the above are at a financial disadvantage compared to the technology companies operating the learning platforms (Baggaley, 2014b; Belleflamme & Jacqmin, 2014).

Another area of research concern that has received very little attention in the rush to begin experimenting with MOOCs is the fact that participants are generating enormous amounts of observational data on the MOOC platform in the form of learning analytics (Eramilli, 2012; Esposito, 2012; Esposti, 2014; Marshall, 2014; Pardo & Siemens, 2014; Schwartz, 2011). Of the numerous motives institutions have for developing and distributing MOOCs, educational research is among them, coming in the form of taking volumes of data on participants that can be used by the learning platform to construct real-time, individualized learner interventions (Banta & Palomba, 2015; Breslow, Pritchard, DeBoer, Stump, Ho, & Seaton, 2013; Gasevic et al., 2014; White et al., 2014).

In the growing body of MOOC literature there is a gap in the faculty experience designing, developing and delivering MOOCs (Azavedo, 2012; Fischer, 2014; Gasevic et al., 2014; Liyanagunawardena et al., 2012; Lombardi, 2014; Ross, Sinclair, Knox, Bayne, & Macleod, 2014).
Statement of the Problem

The speed at which institutions have entered the MOOC marketplace as a means of increasing institutional reach may have unintended consequences for professors, administrators, and students (Lombardi, 2014; Marshall, 2014). This speed of uptake has been referred to as unprecedented by some researchers (Breslow, Pritchard, DeBoer, Stump, Ho, & Seaton, 2014; Schrag, 2013). At the end of the nine-year span from 2008 to 2017, there are still many unanswered questions about MOOC teaching and learning (Baggaley, 2014; Bates, 2014; Bowen, 2012; Daniel, 2012; Domonell, 2014). Among the many unknowns, MOOCs currently do not have a proper theoretical pedagogical framework underpinning their use (Bates, 2014; Clara & Barbera, 2013; Fischer, 2014; Gasevic et al., 2014; Jona & Naidu, 2014; Kop, 2011; Laaser, 2014). According to Siemens, Irvine, & Code (2013) many faculty members are cautious about widespread adoption of MOOCs because of the lack of empirical research on learning outcomes. The current instructivist MOOCs (xMOOCs) use behaviorist teaching methods for which online education was criticized and may represent a pedagogical step backwards in the minds of some researchers (Godwin-Jones, 2014; Jona & Naidu, 2014; Naidu & Barbera, 2014; Norman, 2014; Taneja & Goel, 2014). Referring to cMOOCs, Joksimovic, Kavanovic, Jovanovic, Zouaq, Gasevic, & Hatala (2015) state that current research on cMOOCs has focused on quantitative methods, which does nothing to further the understanding of teaching at the massive scale. Greater understanding of the faculty experience is needed by academic leaders in deciding to experiment or forego
experiments with MOOCs (Lombardi, 2014; Marshall, 2014). The research literature on MOOC development to date has largely revealed the perspective of the participant and technological advancement (Fini, 2009; Liyanagunawardena et al., 2013). This has exposed a major gap in the body of literature researching the experiences of faculty teaching and facilitating MOOCs (Liyanagunawardena, 2012; Ross et al., 2014). Ross, Sinclair, Knox, Bayne, & Macleod (2014) indicate that understanding the faculty experience may indeed be a critical key to the future of MOOC success. According to Lombardi (2013) academic leaders’ decision-making process in regard to MOOC experimentation requires faculty input because they are on the front lines of determining quality pedagogical content and outcomes. Academic faculties are major university stakeholders responsible for the operational and pedagogical structure of teaching MOOCs and faculty work actually defines the university (Stewart, 2013). Institutional administrators and other higher education policy makers have the task of uncovering the longer-term implications of MOOCs (Conole, 2013). Stewart (2013) claims that faculty are also the collegial owners of an institution and responsible for much of the leadership of the academy. Faculty and academic administration have to come together in deciding if MOOCs are an appropriate way to educate and what their role in any institution is going to be (Soffer & Cohen, 2015).
Research Question

MOOC providers have promised great things for higher education and institutional administrators have diverse motives for partnering with MOOC platforms (Daniel, 2012; White et al., 2014). For MOOCs to reach their educative potential many questions need to be answered from the perspective of those on the front lines of designing, developing and delivering teaching on a massive scale (Breslow et al., 2013; Ross et al., 2014). The Chronicle of Higher Education conducted a survey polling faculty who had taught a MOOC asking, among other things, what it was like to teach five and six figure enrollments and if it actually worked (Kolowich, 2013). It would be helpful for academic leaders to get a richer, thicker description of the lived experiences of faculty teaching on a massive scale (Ross et al., 2014). In order to approach this research end and to begin to fill the emerging gap in the research of faculty experiences the researcher sought to answer the following research question (Grbich, 2013; Ross et al., 2014). RQ: What are the lived experiences of faculty members who have participated in the design, development, and delivery of MOOCs that can inform leadership decision-making in regard to institutional strategy?

Theoretical Framework

The basic idea of disruptive innovation is that new, smaller players (entrants) enter a crowded established marketplace, at the low end of the market, with a new, technological innovation, larger companies with greater market share (incumbents)
dismiss these entrants as serious threats and customers eventually recognize the usefulness of the innovation and become consumers of the new technological innovation taking market share from the larger enterprises (Bower & Christensen, 1995; Christensen & Overdorf, 2000; Christensen, 2006; Druehl & Schmidt, 2008). According to other researchers in the field, an industry or company that has been successful over a long period of time can be upended by the very things that made them successful as market forces continually change (Paap & Katz, 2004).

Higher education as an industry has been disrupted most dramatically with the rise of the MOOC (Christensen, Horn, Caldera, & Soares, 2011; Dellarocas & VanAlstyne, 2013; Yuan & Powell, 2013). According to Jacoby (2014) MOOCs are poised to disrupt the monolithic university business model even though there has not been one overarching business model that has entered the MOOC marketplace. Marshall (2013) also indicates that MOOCs have a great potential to disrupt the competitive landscape of universities by offering a low-end product by new entrants.

Significance of the Study

The body of research literature covering the recent rise of MOOCs and the rush of institutions entering into MOOC partnerships reveals a significant need for qualitative information that informs academic leaders of how university faculty members experience teaching on a massive scale (Fishcer, 2014; Gasevic et al., 2014; Liyanagunawardena et al., 2012; Lombardi, 2014; Ross et al., 2014). This study proposes to provide
institutional leaders and decision makers with a faculty perspective of MOOCs and their potential as well as faculty perspectives of their inclusion in the decision making process of MOOC experimentation. Developing a richer understanding of faculty experience has the potential to inform institutional leaders new to MOOC implementation as well as encouraging the future success of MOOCs as an educational format to increase access and reduce the cost of higher learning (Grbich, 2013; Ross et al., 2014). This thick, rich description could aid academic leaders making decisions about whether or not to experiment with MOOCs as well as aiding other faculty members in developing better learning outcomes for participants in future MOOCs.

Procedures

Phenomenological research seeks to develop an understanding of the lived experiences of several individuals and the common meanings experienced in a particular broad phenomenon (Creswell, 2012). The intent of phenomenological research is to ground knowledge in conscious reality by examining the lived experiences of individuals experiencing a certain phenomenon (Creswell, 2012; Crotty, 1998; Grbich, 2013).

The Massive Open Online Course is a relatively new phenomenon in higher education with a small but growing body of literature accompanying their rise (Daniel, 2012; Liyanagunawardena et al., 2012). In order for academic leaders to make informed decisions about MOOC experimentation, understanding of the lived experiences of faculty who teach MOOCs and their inclusion in the decision-making process to
experiment with the MOOC format, the researcher conducted a classical phenomenology (Moustakas, 1994). To answer the research question listed above, the researcher developed semi-structured interviews with 4 faculty members from one research university in the Southeastern United States and 3 other experienced faculty members from Canada and the Eastern United States that have MOOC teaching experience bracketing his lack of personal experience with the phenomenon as well as personal biases toward MOOCs (Creswell, 2012). The faculty members for this study were identified from the few programs that exist that are MOOC based as well as from their personal reputations and prior MOOCs taught. Data was analyzed by coding interview transcripts by open coding and narrowing categories down to significant themes that emerged from the data. Data analysis culminated in a description of the essence of the phenomenon of designing, developing, and delivering a MOOC (Creswell, 2012).

In order to validate the findings the researcher utilized member checking by going back to the individuals who were interviewed and share the findings of the study by email for a two week period to get feedback from the individuals to discover if the findings form the true essence of the phenomenon in the mind of those interviewed (Creswell, 2012).

Limitations and Delimitations

According to Grbich (2013) one of the weaknesses of phenomenology is that bracketing a researcher’s experience into the study is very difficult to do. This researcher
had no formal MOOC teaching experience and no instructional design experience from which to draw. The researcher took online graduate courses in the early days of online education before high speed internet and even then had a good experience. The researcher has also had a bias toward online educational formats because of the convenience they brought to his own education. In order to overcome this limitation the researcher will write a subjectivity statement. A limitation to any phenomenological study is that phenomenology can be difficult to know when to draw the data analysis to a close (Creswell, 2012; Grbich, 2013). Another limitation could be the level of teaching experience of the faculty members interviewed and the number of faculty that agree to be interviewed as well as the faculty’s experience with instructional technology. A number of interview participants’ MOOC design, development, and delivery experience was limited to one third party technology platform so there was no way for them to make comparisons to other platforms. One final limitation of this study is the willingness of experienced faculty to have the time or willingness to participate as well as the small pool of experienced members to draw from. The study will be delimited to faculty, and institutions that have experimented with MOOCs.

Definition of Terms

Synchronous – reference to the time a course meets on campus and or online and whether or not students must log into the course to engage in learning during that same time frame.
Asynchronous – students may log into a course at any time to engage with the course materials at their convenience.

Massive Open Online Course – courses offered through selective universities in cooperation with a third party technology platform that may operate as a non-profit or a for-profit corporation to offer college level courses on a massive or global scale that uses open-source technology or, in some cases, proprietary technology to deliver the course content free of charge. MOOC’s sometimes offer credit-bearing courses that also require a fee.

cMOOC – a massive open online course that runs on an open platform and does not use the traditional professor-centered lecture format.

xMOOC – A massive open online course that runs on a proprietary platform and typically uses the traditional professor-centered lecture for a course format. Content is offered by a partnering university but the technology is managed by the owners of the platform.

Summary

Massive Open Online Courses have rapidly become popular and have captured the attention of people in important leadership positions both inside and outside of academia (Krause, 2013; Taneja & Goel, 2014). The pressure upon institutions to make higher education more affordable and more accessible, have made MOOCs an attractive option (Miesenhelder, 2013). However, there are many questions yet to be answered as
to their viability as a teaching and learning tool for the masses (Bates, 2014; Jacoby, 2014). MOOC providers have not yet determined how they will make money in the future (Daniel, 2012; Taneja & Goel, 2014). A growing number of institutions nationwide and internationally have developed partnerships with for-profit MOOC providers despite the many unanswered questions (Lombardi, 2014). One key to understanding the viability of MOOCs of the future is to develop a qualitative understanding of the lived experiences of those who have taught MOOCs throughout their development and teaching phases as a means of informing institutional leaders who feel pressured to join the MOOC experimentation. To achieve this, the researcher has proposed to do a classical phenomenology to answer the question, What are the lived experiences of faculty members who have participated in the design, development, and delivery of MOOCs?

The theory of disruptive innovation will provide the theoretical framework for the study (Bower & Christensen, 1995; Christensen, Horn, Caldera, & Soares, 2011) due to the disruptive effect MOOCs are seemingly having on the traditional business model of higher education (Marshall, 2013). This study proposes to provide institutional leaders and decision makers with a faculty perspective of teaching on a massive scale that may help them make decisions in the future of whether or not to pursue MOOCs within their own institutions. The researcher will interview six to ten faculty members who have been involved in teaching and developing MOOCs to share their lived experiences with academic leaders to determine their viability. This research may assist academic leaders
in understanding how faculty experience teaching in MOOCs despite the lack of an agreed-upon pedagogical theory underpinning the deployment of MOOCs.
CHAPTER 2

REVIEW OF THE LITERATURE

This literature review will trace the history and development of Massive Open Online courses from their genesis to their current form, cataloging the dichotomy of course design that has emerged from this recent phenomenon. The review of literature will also present scholarly discussion and research around the pedagogical frameworks used to develop MOOCs and how these frameworks are intertwined with the dichotomy of MOOC types. A brief review of the most significant challenges currently facing MOOC implementation and the research gaps that currently exist will be included, culminating in a discussion of how disruptive innovation theory informs this proposed study.

Agarwal, Kumar, & Agarwal (2015) assert the undeniable impact that the internet has had on the world and specifically the influence internet technology has had upon the field of higher education, with special emphasis on the influence open educational resources such as Massive Open Online Courses have had upon the developing world. Massive Open Online Courses or MOOCs, as they are commonly known, have been a part of the educational landscape for less than a decade as of this writing and what they will become or what role they will play in the future of higher education has yet to be

Stein (2014) observes that the tremendous growth in online education occurred in the years prior to the rise of the MOOCs in order to inform readers that the greatest strides in online education were in spite of MOOC technology rather than because of it. To some experts in the field, MOOCs are an unwelcomed, unneeded intrusion into the higher education realm, representing nothing more than a passing fad (Baggaley, 2014a; Bates, 2014; Pappano, 2012). To some instructors who have taught MOOCs, MOOCs are simply a new way to reach out to more students because they are free and offer no credit, as a way of driving enrollment (Impey, Wenger, & Austin, 2015). To many institutional administrators, MOOCs represent a curious new tool for pedagogical experimentation, which if adopted widely, could threaten the future prosperity of those who fail to join the movement (Lombardi, 2014; Stewart, 2013).

To develop a fuller understanding of exactly what MOOCs are, it may be helpful to define each word in the acronym. The massiveness of the MOOC may be the newest of features and one of the most significant challenge as it regards the assessment of teaching and learning in MOOCs (Kay et al., 2013; Sandeen, 2013b; Stewart, 2013). According to Knox (2014) this massiveness is unprecedented in education whereas the open and the online nature have historical roots in higher education. According to Stewart (2013) massiveness in the context of the MOOC refers to the size of the course or the ability of the chosen technological platform to handle greater numbers of course
participants and not to the return on economic investment (ROI) that often gets conflated in minds of administrative leaders seeking to reach economies of scale. In an economic sense, massiveness has the potential to erase the traditional capacity barriers as well as the marginal costs of adding students to a course (Belleflamme & Jacqmin, 2013).

Critics, observers, teachers, and higher education administrators all have different ideas about what this technological innovation has the potential to do in the field of higher education specifically and for organizational learning more broadly (Baggaley, 2014a; Christensen, Horn, Caldera, & Soares, 2011; Daniel, 2012).

The term open refers to the fact that there are no real admissions requirements barring a participant from joining in (Sandeen, 2015). The fact that MOOCs are open also means that they are free of charge therefore, they are affordable and accessible for learners practically anywhere in the world and the fact that they are online also indicates that they are available to anyone with an internet connection (Kay, Reimann, Diebold, & Kummerfeld, 2013). The course element of the MOOC means that there is a recognized beginning and ending period and that there is some form of recognition for participation if that is what is sought by the participant (Cormier & Siemens, 2010; Weller, Siemens, & Cormier, 2012). The last three features of the acronym have historically been a part of the higher education landscape individually or paired in some way, representing nothing unprecedented in higher education (Anderson & Dron, 2011).
MOOC History

Prior to the popularity of the MOOC, higher education institutions were growing in their acceptance of and capacity for offering high quality online and blended courses as part of their traditional curriculum (Allen & Seaman, 2013; Bruff, Fisher, McEwen, & Smith, 2013). The general efficacy of online education is still debated amongst scholars and many of the arguments posited against the effectiveness of MOOCs were also said of earlier online and blended learning courses in general (Bates, 2014; Godwin-Jones, 2014; Gikandi, Morrow, & Davis, 2011; Guri-Rosenblit & Groz, 2011). Guri-Rosenblit and Groz (2011) point to a number of contradictory studies of whether or not online learning is as effective as traditional, face-to-face, faculty-lead instruction. However, other studies demonstrate that those who claim online courses are inferior have been shown to have no experience teaching online courses (Irvine, Code, & Richards, 2013). Faculty on the front lines of teaching MOOCs question the efficacy of teaching on a massive scale as to their ability to provide the kind of quality indicative of a credit-bearing course (Lowe, 2014). One of the ways that existing MOOCs are being used by partnered institutions is to blend a MOOC by top-notch faculty at top-tier universities with another institution’s similar course offerings on-campus, formulating a wrapped MOOC (Bruff et al., 2013). The findings of Bruff, Fisher, McEwen, & Smith (2013) in a MOOC-wrapped, on-campus course were that students enjoyed being able to view video lectures on their own time and at their own pace while engaging in an on-campus community of learners rather than engaging with other online users and participants.
Experienced distance educators have openly criticized MOOC platform providers for ignoring the pedagogical lessons learned in earlier phases of online education and express their curiosity as to the popularity of the MOOC format (Baggaley, 2014b; Bates, 2014; Godwin-Jones, 2014; Hollands & Tirthali, 2014a; Jona & Naidu, 2014; Naidu & Barbera, 2014). Krause (2013) stated that in the space of only five years MOOCs went from being a mere intellectual curiosity, to a way of radically overhauling higher education. Lowe (2014) levels the accusation for speedy MOOC proliferation at politicians looking to find a cheap alternative to the expensive process of educating today’s students.

Anderson & Dron (2011) catalog three distinct generations of distance education by means of their pedagogical developments within each generation. The first two generations range from mail correspondence courses in the mid-twentieth century to the online courses available in the early years of the internet based on behaviorist and social constructivists theories of pedagogy (Anderson & Dron, 2011). The third generation of online education is that of connectivism which appears to be an outgrowth of Cognitive Behaviorist and Social Behaviorist pedagogical theory with the feature of somewhat diminishing the role of the teacher as the sole proprietor of knowledge transmission (Anderson & Dron, 2011). Siemens (2005) notes that these prior pedagogical models were developed in a time when the communicative potential of the internet and web 2.0 technologies were unknown and therefore, these older pedagogical models are insufficient to explain how modern learners construct knowledge in virtual learning environments.
The Massive Open Online Course has its roots in the 2008 work of Siemens and Downes (2008) Connectivism and Connective Knowledge (CCK08) which began as a way to facilitate a new way of sharing knowledge between learners and amongst learners distributed across great distances by the affordance of web interconnectivity (Fischer, 2014; Siemens, 2005). The actual course began as an exercise in marrying connectivism with open educational resources and networking learners as they collaboratively developed the course content of CCK08 (Conole, 2013; Cormier, 2008). Siemens & Downes (2008) originally had 25 paying students on campus at two Canadian universities, and then, with little fanfare and no marketing strategy then added 2200 participants auditing the course over the internet throughout the world uploading their own created content to the course (Cormier & Siemens, 2010; Fini, 2009; Jacoby, 2014; Lowe, 2014; Mackness, Mak, & Williams, 2010; Sandeen, 2013a; Weller, Siemens, & Cormier, 2012). These auditors who rarely complete courses have come to be known as lurkers due to their lack of engagement (Glance & Barret, 2014). This course model served as a launching pad for other professors to reach greater numbers of students in their online courses and for institutions to increase their global stature and reach (Billington & Fronmueller, 2013; Hollands & Tirthali, 2014). The idea behind the course was to get firsthand experience engaging with the Connectivist theoretical concepts and practical principles while participating in online distributed learning and developing course content as participants (Mackness et al., 2010).

After the first CCK08 event, Siemens and others continued to offer connectivist (CCK) MOOCs to cover various other open learning subjects fitted for connectivist
learning on a massive scale (Jacoby, 2014). Sandeen (2013) mentioned an attempt by the University of Illinois, achieving similar success as CCK08, in 2010 with a U.S.-based cMOOC (eduMOOC) that registered over 2500 online participants (Knox, 2013; Sandeen, 2013b; Sandeen, 2015). One New York Times reporter referred to these new courses as, collaborative techie learning events, seemingly as not being on par with later MOOCs offered by the major platforms such as Udacity or Coursera thus limiting their value to only a technologically advanced few (Pappano, 2012). It is important to understand that these efforts were an outgrowth of the Open Education Movement where Ivy League universities provided free course content without credit over the internet and others were developing free course wikis that actually were the precursors of cMOOCs (Decker, 2014; Weller, Siemens, & Cormier, 2012). Connectivism and Connective Knowledge continued in subsequent years to build on the former success of the cMOOC model.

Another example of a cMOOC is that of ds 106 in digital storytelling, which was developed by the computer science department at the University of Mary Washington and which opened up to the world in the fall and spring of 2010. Participants were given their own domain name and were asked to submit course assignment ideas and an overwhelming number of ideas poured in to the site (Conole, 2013; Owens, 2011). The idea was to allow students the flexibility and creativity to frame their own personal narrative through any audiovisual media available to them as a means of experimenting with learning generally and learning computer science applications specifically. According to Sandeen (2015) these courses allowed future innovators to scale up their
online offerings by revealing a massive, international demand for access to quality education.

The following year, the launch of the Stanford, Introduction to Artificial Intelligence (AI) MOOC in 2011 was the beginning of mainstream MOOC use and since that time this form of MOOCs have received an extraordinary amount of media attention because a number of them have achieved six-figure initial participant enrollments (Bates, 2014; Billington & Fronmueller, 2013; Fischer, 2014; Friedman, 2013; Pappano, 2012; Sandeen, 2013a; Stewart, 2013). Dr. Sebastian Thrun used the MOOC model of Siemens and Downes (2008) to open up his AI course in the Fall semester of 2011 to online students. Consequently 150,000 students from all over the world enrolled, which demonstrated a world-wide desire for high quality learning experiences (Billington & Fronmueller, 2013; Crispin, 2012; Jacoby, 2014; Pappano, 2012). This success led Dr. Thrun to found Udacity, the third party technology platform from which many courses are now launched and with which a number of notable universities have partnered to offer courses in the fields of Science, Technology, Engineering, and Mathematics (Billington & Fronmueller, 2013; Decker, 2014; Jacoby, 2014).

Udacity’s success with what has become known as the xMOOC format has not been without its challenges. The company suffered a widely-published, public relations setback after a highly-touted partnership with San Jose State University that was initiated in January, was terminated in July because of low pass rates in required math courses (Lopes-Harris, 2013; Rivera, 2013; Stein, 2014; Vu & Fadde, 2014). Another similar technology platform developed by Stanford professors, Coursera, has also had its share of
negative publicity when a miscalculation of a Google application and its capacity to handle multiple users, shut down a computer science course in the first week of the launch of the course at a top-tier public research university (Jaschik, 2013). These setbacks have not stopped the advance of the technology or institutions’ desire to experiment with MOOCs.

Since 2011 a number of other new technology platforms have come to market to partner with universities in order to offer MOOCs and a number of institutions have rapidly joined the experimentation (Decker, 2014; Jacoby, 2014; Jordan, 2014). As stated above, two other faculty members at Stanford University, Ng and Koller, launched Coursera and have partnered with numerous top-level universities world-wide (Pappano, 2012). Both of these third-party technology platforms are for-profit ventures that began with significant infusions of venture capital but have yet to find a viable money-making business model (Billington & Fronmueller, 2012; Dellarocas & Van Alstyne, 2013; Taneja & Goel, 2014; Yuan & Powell, 2013). During this same time frame Harvard University and Massachusetts Institute of Technology (MIT) entered into a non-profit joint venture to produce MOOCs called edX (Breslow, Pritchard, DeBoer, Stump, Ho, & Seaton, 2013; Taneja & Goel, 2014). Coursera and EdX have a significant following outside the United States but are inspiring countries such as India to develop their own platforms to reach greater segments of their own populations with open educational resources (Agarwal et al, 2015; Joshi, 2015). Europe also has a non-profit counterpart technology platform known as Futurelearn as an answer to edX in the United States (Yuan & Powell, 2013).
A fourth, lesser-known MOOC platform in the United States that has entered the MOOC space is Udemy, which focuses more on skills and vocational training directly from experts in the field (Billington & Fronmueller, 2013; Yuan & Powell, 2013). Udemy is interesting and different in the fact that it provides a platform for teachers to develop and post their own course content and set a student fee for the course, linking students and teachers directly, rather than linking institutions with students (Kay, Reimann, Diebold, & Kummerfeld, 2013). Impey, Wenger, & Austin (2015) used the Udemy platform because of this direct teacher-student link without having to stay within an institutional agreement framework, to advertise an Astronomy MOOC that later developed into a credit-bearing, on-campus blended course. The number of MOOC platforms entering the market and MOOC initiatives by institutions is continuing to grow as well as the influence and capability of these platforms and initiatives (Jordan, 2014; Joshi, 2015; Kay et al., 2013; Yuan & Powell, 2013). According to Joshi (2015) major players such as Pearson and Google also have plans to enter the MOOC commercial sphere in the near future.

**MOOC Dichotomy**

MOOCs currently appear in one of two main varieties based on the type of pedagogy undergirding their design, development, and deployment (Clow, 2013; Rodriguez, 2013). The connectivist MOOC or cMOOC is the collaborative, informal network type of course that operates to experiment with new forms of pedagogy and exists in what Yuan & Powell (2013) describe as a fringe area of higher education
(Siemens, 2005). This type of MOOC focuses on participants constructing knowledge on their own around open educational resources and linking participants to one another through social media and other web 2.0 technologies in order to collaborate on course assignments and projects (Owens, 2011; Taneja & Goel, 2014; Zheng, Rosson, Shih, & Carroll, 2014; Stewart, 2013). Rodriguez (2013) adds that this new pedagogy presents a totally new educational ecosystem where the learners themselves are the course. Research however, has shown that this self-directed form of learning is often overwhelming to learners who are often expecting a similar ecosystem of teacher-student interaction (Saadatmand & Kumpulainen, 2014).

Stewart (2013) observed that the real point to the connectivist MOOCs was to transform the sociocultural model of education in the public mind from a closed, meritocratic system to an open, democratic system where access can be gained by anyone who wants to learn rather than only those who have the means can enter and learn. One area where this becomes a problem is in the area of assessment because cMOOCs have no formative or summative assessments to determine what learning has taken place (Joksimovic, Kovanovic, Jovanovic, Zouaq, Gasevic, & Hatala, 2015). Since MOOCs are a recent phenomenon with a small body of literature there is a well-known group of academic authorities researching and writing on connectivist MOOCs (Baturay, 2015; Jacoby, 2014; Saadatmand & Kumpulainen, 2014). Addressing the growing nature of this body of research literature, Norman (2014) admits that the research is beginning to come in since delivered MOOCs now number into the hundreds. Regardless of the gaps and imbalance in research, traditional institutions have largely gone a different direction
with MOOC development than the cMOOC direction to a more traditional form of pedagogy on a sophisticated technology platform (Sandeen, 2013a; Stewart, 2013). Ahn, Butler, Alam, & Webster (2013) referred to cMOOCs as a bottom up approach to online education rather than the traditional top-down model followed by the latest platforms.

This leads the discussion to the second type of MOOC available widely across the MOOC landscape; the instructivist/extended, or xMOOC which follows the behaviorist models of pedagogy and operates on a proprietary technology platform as either a for-profit such as Coursera and Udacity or as a non-profit such as edX (Clara & Barbera, 2013; Kocaleva, Petrovska, & Zdravev, 2014). According to Siemens (2012), regardless of the ideology behind the development and delivery of a MOOC, it is still a platform (Daniel, 2012). The xMOOC is the MOOC version that many institutional partners are now developing which still rely on faculty lectures by video interspersed with other content disseminated to student participants so that professors are still the purveyors of educational content (Kay, Reimann, Diebold, & Kummerfeld, 2013; Stewart, 2013). When asked how they felt about institutions moving more to the instructivist model Weller, Siemens & Cormier (2012) admitted to dropping in and out of Coursera offerings themselves and praised their work. The only problem in the mind of these MOOC pioneers is if the current platform model (xMOOC) stifles the future of pedagogical innovation and experimentation. The xMOOC has been criticized for its lack of pedagogical innovation likened to a horse-drawn carriage having an internal combustion engine attached to it (Jacobs, 2014).
Another criticism leveled against the xMOOC format is that it perpetuates the old adage of the “sage on the stage” claim that superstar, Ivy-league professors become academic Rock Stars (MOOC stars) whereas the cMOOC facilitates the role of teacher as being the “guide on the side” (Decker, 2014; King, 1993; Taneja & Goel, 2014). Clara & Barbera (2013) indicate that xMOOCs will be forced to reexamine their pedagogy in the future in order to come more in line with cMOOCs in order to continue the evolution of MOOCs in the Web 2.0 environment because more and more participants have the digital literacy to create much of their own content when they enter these courses. Kay, Reimann, Diebold, & Kummerfeld (2013) speak to this need to examine pedagogy in terms of MOOC proliferation creating a situation where quality becomes more and more important. Stewart (2013) indicates that the problem is that xMOOCs have simply duplicated what happens in the classroom and broadcast it massively rather than creating something truly innovative. Sandeen (2013a) suggests that MOOCs are heading into a MOOC 3.0 era where they will be assimilated into the traditional curriculum as blended courses. Bruff and others (2013) agree with Sandeen that future courses will wrap a campus course in an existing MOOC as supplemental learning materials even taking the place of textbooks. Conole (2013) suggests that these two categories are too limiting in describing MOOCs and their potential contribution to education.

A second level of dichotomy is the bifurcation of MOOCs into for-profit and non-profit categories (Yuan & Powell, 2013). According to Taneja & Goel (2014) the three largest players in the MOOC platform arena have different motivations for experimenting with MOOCs. EdX seems to be interested in increasing the access to quality education as
well as educational research which is consistent with the historical traditions of non-profit entities (Taneja & Goel, 2014). However, Baggaley (2014a) notes that recent offerings by edX that were less than massive, signals a requiem for the MOOC format. Futurelearn is the non-profit platform that services MOOC participants throughout Europe whose motives, like those of edX are to increase educational access to European students giving them a more local connection (Stewart, 2013).

The creators of both Coursera and Udacity have similar motives of offering a quality education at a reduced cost but there is also an entrepreneurial dimension to their efforts (Taneja & Goel, 2014). As a critic of profit motives Baggaley (2014b) likens MOOCs to the fast food industry “supersizing” their menu offerings. Implicit in this criticism is that massification will necessarily be followed by a drop in quality or a lack of concern about the quality in order to reach the masses with pseudo-educational content. The critical challenges of the current state of higher education create a situation ripe for such offerings as MOOCs as a mitigating force (Sandeen, 2013a). Aside from the various motives for developing MOOCs, the increased focused research on student learning and online course development could serve to bring improved returns for online education as well as to both institutions and students (Taneja & Goel, 2014; Zheng et al., 2014).

The popularity of MOOCs in the media have created a following of sorts where faculty innovators want to use features of MOOCs and MOOC-type labeling of derivative courses similar to MOOCs although many are not massive in nature (Hollands & Tirthali, 2014b; Sandeen, 2015). Hollands and Tirthali (2014b) catalog further proliferation of
acronym-labeled courses similar to MOOCs in their full report under the heading of MOOC derivatives. This new nomenclature feature is still in its developmental infancy and is not covered in enough depth in the literature to expound upon in any greater depth in this review of literature.

MOOC Pedagogy

Siemens (2005) asserted that synchronous and asynchronous learning environments created for online learning were suffering from a lack of learning and pedagogical theory that took into account the exponential growth of knowledge and the development of new web technology. Connectivism was developed as a pedagogical theory to address these concerns and has been at the center of the pedagogical debate surrounding MOOCs (Bell, 2011; Cormier & Siemens, 2010; Siemens, 2005). The worldwide web and specifically the development of Web 2.0 technology has ushered in an era where learning can reside in an open space on the web, free to all users allowing them access to the content and to be a part of the learning conversation as well as part of the process of constructing knowledge (Cormier & Siemens, 2010). Connectivism helps these learners communicate and introduce one another to these open spaces through online networking (Bell, 2011; Clara & Barbera, 2013; Kop, 2011; Siemens, 2005).

Web 2.0 is a generalization for the fact that anyone with the digital literacy, technical skills, and inclination can develop web content or learn to develop web content and post it to a site on the internet through a host of online tools such as mobile applications, weblogs, and social media (Anderson & Ponti, 2014; Bell, 2011).
Connectivism is the name given to the theory that knowledge is constructed by learners through a facilitated network of collaborators sharing resources and knowledge residing in open and many times, non-human appliances or repositories such as servers and databases (Siemens, 2005). Connectivism seeks to use these technological networks and resources beyond the classroom to connect learners to one another and to sources of information whereby learners can themselves construct knowledge through social interaction over those collaborative networks (Siemens 2005). Connectivism is based on the principles of autonomy, diversity, openness, connectedness, and interactivity and early studies have shown that while the principles are affirmed in design they are still problematic and limited (Mackness et al., 2010). Cormier and Siemens (2010) stress that open sources of learning and cMOOCs in particular, not only allow masses of students access to the academic world but also allows teachers to innovate teaching in ways that traditional courses do not. In addition, the researchers elaborate on a major strength of open courses is the moving away from educator-created content of closed, traditional courses creating greater access to learning (Cormier & Siemens, 2010).

Connectivism as a pedagogical theory has received its share of critical debate. Laaser (2014) even refers to connectivism as a pretend learning theory stating that the principles of connectivism do not rise to the level of learning theory. Bell (2011) acknowledged that the disjointed and anachronistic pedagogical theories based on classroom teaching and learning are, in fact, inadequate for the online space but that connectivism itself is also inadequate as an online pedagogical theory because of its purported lack of rigor. An outspoken critic of MOOCs, Baggaley (2014a) exposed a
number the various authors who have taken extremely critical views of connectivism. The author points out that connectivist MOOCs question the role of a teacher which, in his estimation, requires a suspension of belief, that replacing teachers with independent learning could ever enter the realm of serious academic discussion (Baggaley, 2014a).

However, researchers definitely recognize the challenge to traditional pedagogy presented by MOOCs because they effectively eliminate the personal interaction of the professor with participants because of asynchronicity and massiveness (Li, Himanshu, Skevi, Zufferey, Blom & Dillenbourg, 2014). It would be humanly impossible for one instructor to interact with every participant in a course even once throughout the duration of a particular course due to the volume of content that is created in one social media feed alone, such as twitter (Lowe, 2014; Stewart, 2013; Weller, Siemens, & Cormier, 2012). This hurdle gets increasingly lower as MOOCs and their supporting technologies continue to develop. Mitros, Agarwal, & Paruchuri (2014) indicate that machine assessments and learning analytics data continually home in on instant formative and summative assessments and real-time feedback to participants on weak areas of their knowledge that need work. Since assessment is such an elemental component of pedagogy and especially in the online environment, establishing validity and reliability of automated assessments will need to be a major focus of their future development (Gikandi, Morrow, & Davis, 2011).

Clara and Barbera (2013) conclude that connectivism is not adequate to explain learning a Web 2.0 environment or any other learning environment because it does not address the central attributes of learning such as some students requiring the direction of
a teacher in order to stay engaged in a course. At the same time, the researchers note that while xMOOCs may have followed behaviorist, cognitivist, or social constructivist models of pedagogy xMOOCs are not, in fact, pedagogically driven but driven by institutional strategy for integrating technology into their campus-based programs (Clara & Barbera, 2013). The researchers’ conclusion is that connectivism can be jettisoned as a theory without discarding MOOCs as a whole. A recent study on cMOOCs in particular, focused on determining what learning occurs in cMOOCs in order to gain a better understanding of the practice of teaching on a massive scale (Joksimovic et al., 2015).

Bell (2011) asserts that actor-network theory and social learning theory are pedagogical frameworks that could undergird future MOOC as well as future online learning efforts. Kop (2011) took a more moderate approach to questioning and critiquing connectivism, revealing several challenges for connectivist learners which were chiefly the strength of a participants’ self-direction and the need for critical technical literacies to participate in connectivist MOOCs. Kop, Fournier, & Mak (2011) concede that the digital age has brought an abundance of new tools that enhance learning by bringing an abundance of educational resources in addition to simply having books and lectures.

On the contrary, Jacoby (2014) posits that cMOOCs represent the greatest level of pedagogical innovation because of their transformative effect on teaching and learning. On the other side of the same coin Vu & Fadde (2014) recognize that the xMOOC presents a one-size-fits-all mode of teaching and learning that is insufficient for the future of teaching and learning via MOOCs. Jacobs (2014) agrees that the world of education is
on the cusp of a major transformation that will positively impact students individually rather than having to settle for the traditional one-size-fits-all model of education.

Knox (2014) introduces an interesting question to the MOOC divide and debate over pedagogy suggesting that most of the literature “under-theorizes” MOOCs, posing the question of what happens when thousands of people orient themselves around specific arrangements of educational material, for consideration. The researcher co-taught the E-Learning and Digital Cultures MOOC (EDCMOOC) in 2013 to challenge both the Coursera instructivist model of pedagogy as well as the connectivist model of CCK08 (Knox, 2013). This research represents an attempt to understand what the massive in MOOC can do to revolutionize education in an increasingly global world of higher education (Knox, 2013).

Daniel (2012) concedes that MOOCs have already demonstrated their potential to educate the masses as long as there are instructional teams supporting the professors teaching the courses. Drawing from the experience and research of long-time distance educators, Daniel (2012) insists that support teams of instructional designers assisting the professors teaching MOOCs are what add educational quality to MOOCs. Adding to this, Fischer (2014) concludes that learning science researchers play a critical role in the future evolution of MOOCs and encourages their engagement in order to steer MOOC research away from the current media and political influences seeking to shape future efforts (Kahlenberg, 2013). White, Davis, Dickens, Leon, & Sanchez-Vera (2014) admit that while MOOCs offer great potential for the future of higher learning they cannot possibly be the panacea for all the current ills of higher education. Pedagogical concerns
continue to stand at the heart of MOOCs inability to solve the major educational problems of accessibility and affordability (White et al., 2014). Regardless of how this pedagogical debate stands as it applies to the continued development of MOOCs, this pedagogical divide between learning process versus content-based courses is said to have been going on prior to the MOOC entry into higher education (Yuan & Powell, 2013). Conole (2013) suggested that a better pedagogical design framework was based on the seven “c’s” of learning design (14).

MOOC Motivations and Objectives

Institutions, MOOC platform providers, and MOOC faculty all have numerous intentions for experimenting with MOOCs at the institutional and individual course levels (Wilson, Hartnett, Brown, Jamieson, & Symonds, 2014). Yuan & Powell (2013) state that the overall motive for creating MOOCs was originally rooted in the belief that knowledge should be shared freely and openly to the world without regard for demographics, economics, or geographical boundaries. A survey of institutional motivations by Allen & Seaman (2014) revealed nine basic objectives of institutions that either offered MOOCs or were planning future MOOCs. The two most popular objectives listed were to increase the visibility of the institution globally and to drive student enrollment (Allen & Seaman, 2014). Researchers confirm this motive of increasing the visibility and range of a university by showcasing top-shelf faculty in MOOCs (Impey et al., 2015; Wilson et al., 2014).
Developing a new income stream appeared to be the least important of all motivating factors for institutional administrators according to the research; yet, student enrollment is itself the major income stream of institutions of higher education (Allen & Seaman, 2014). Lombardi (2014) concluded with a number of key questions institutional leaders should ask before planning and launching MOOCs and the very first question in the list asks how MOOC experimentation at the institutional level will advance the strategic goals of the institution. Hollands & Tirthali (2014a, b) conducted a survey of 83 people at 62 institutions and found six different broad categories of goals amongst institutions operating or planning MOOCs. The results of that study were similar to that of Allen & Seaman (2014) in that institutional leaders are under pressure to join the MOOC experimentation or risk being behind the innovation curve, therefore institutional leaders contract with MOOC platforms to improve the reach of their institutions and expand access to higher education (Cusumano, 2014; Hollands & Tirthali, 2014b; O’Connor, 2014).

Contracting out the technological needs of the university is also an attractive alternative to institutions overwhelmed by the speed of technological innovation (Daniel, 2012; Yuan & Powell, 2013). By the same token, an institution can leverage the MOOC platform to expand their online course offerings in a technologically efficient and cost-effective way (Conole, 2013). Capital expenditures necessary to get into the online education marketplace have historically been so cost-prohibitive as to keep many traditional institutions out of the online education marketplace altogether (Irvine, Code, & Richards, 2013). The MOOC platform now levels the playing field where every
institution that cares to experiment has the same access to the technology to use online education as part of their course offerings. The University of Pennsylvania entered into a contractual relationship with Coursera largely for their inexperience in online education (Popp, 2013). The fear of being left behind by not participating has been a strange motivating force for institutions as well as faculty members (Kolowich, 2013; O’Connor, 2014; Popp, 2013).

Sandeen (2013b) encapsulates the published intents of the major platform providers’ divergent motivations for providing their services. Coursera seems focused on upper division courses from elite institutions while Udacity seems to offer access to students currently underserved by higher education and fostering student success in lower division required courses, primarily in stem fields (Sandeen, 2013b). O’Connor (2014) quotes the stated objectives of Coursera from a statement on the Coursera website regarding opening up world-class education to all who want it in order to improve their lives. Faculty MOOC developers appear to be motivated by the interest in innovative teaching and learning as much as by the fear of being left behind technologically (Impey et al., 2015; Kolowich, 2013; Scholz, 2013).

**MOOC Challenges**

The newness of the MOOC phenomenon along with the speed institutions are opting to experiment with MOOCs has revealed a number of critical challenges to the design, development, and delivery of MOOCs (Breslow et al., 2013; Ferenstien, 2013; Schrag, 2013; Smutz, 2013). This section of the literature review will catalog a number
of critical challenges that are facing institutions as they implement MOOCs but will not be exhaustive. Learning Analytics and Intellectual property rights are challenges to MOOCs that are still in their infancy and will not be covered as part of this section of the review of literature (Clow, 2013; Domonell, 2013; Rathemacher, 2013; Richter & Krishnamurthi, 2014; Stein, 2014). Wilson, Hartnett, Brown, Jamieson, & Symonds (2014) found that in addition to tensions between faculty and IT developers on video production and course content, copyright issues were a major issue in going live with a MOOC that will require specialized expertise moving forward. As described above, there are a number of motivations that administrators have for experimenting with MOOCs and only time will tell if these motivations are paying off for the institutions that partner with MOOC platforms (Allen & Seaman, 2014; Cooper & Sahami, 2013; Daniel, 2012).

Completion Rates

Analysis of the completion/dropout rates of MOOCs is a topic that receives much attention in the MOOC literature and may require an adjustment to the definition of success because of the scale (Blackmore, 2014; Wang & Baker, 2015; Weller, Siemens, & Cormier, 2012; Yuan & Powell, 2013). Weller, Siemens, & Cormier (2012) asserted that a more nuanced view of completion and success is necessary because if a student got what they needed from the course in the first session or two then, in the minds of the researchers, that was a success. Blackmore (2014) echoes the need for a more nuanced view of success in the MOOC context focusing on participant intention because many
learners do not engage in the reflection and discussion components of a course because they are there simply for information and not for social interaction.

Even though many xMOOCs report six figure enrollments, the completion rates are much lower with an average of about 5% (Breslow et al., 2013; Jordan, 2014; Gee, 2012). According to Jordan (2014) this six-figure enrollment scenario is not necessarily typical either, revealing that the average enrollment of registered participants is around forty thousand. Additionally, Jordan (2014) reported a weak positive correlation between enrollment figures and course length, finding that serious students were searching for longer, more substantial courses but also that the longer the course, the fewer the completions of those courses. Though many participants may drop in and out of a course at any given time, some participants are simply looking for certificates that provide inexpensive credentialing in their career fields (Baturay, 2015; Jordan, 2014; Radford, Robles, Cataylo, Horn, Thornton, & Whitfield, 2014). Glance & Barrett (2014) found that many registrants were actually non-starters and that engagement by those who started, began to decay sharply after the first course, leaving only the most dedicated participants in the last few weeks of a course and even fewer completers. Impey, Wenger, & Austin (2015) used the Udemy platform for their course, received IRB approval to study the analytics data on their students and found that nearly 50 percent of participants never opened any of the course materials or video lectures necessary to complete the course.

Gee (2012), in discussing the initial figures of the first MITx entry into MOOCs, was astounded by the attrition rate, asked the question of whether or not significant
dropout rates were really a problem when considering that the number of students at a five percent success rate was still far more than matriculate through the on-campus program at this massive scale. Sandeen (2013b) stated that if 100,000 students participate, a ten percent completion rate is still a significant number of students. One factor that must be realized in attrition rates is that the participants themselves have diverse reasons for participation in a MOOC that may differ dramatically from what the instructor/facilitator or the institution intends (Stewart, 2013). A significant number of participants are simply curious about the subjects offered; others want a risk-free opportunity to try their hand at online learning, while others have professional development motives for lurking behind the scenes of a MOOC (Sandeen, 2013b). Sandeen (2015) notes that once the participant has acquired the desired knowledge from the course it is likely that interest is not sustained in completing the course. MOOCs have given the world the opportunity to observe higher education without actively engaging in it. Jacoby (2014) adds that the lack of ability to identify and track MOOC participants in order to gather long-term data about participation and completion rates is an obstacle to progress. One interesting development has been the finding that more and more participants in MOOCs have prior experience in MOOCs (Macleod et al., 2015).

Access

In a 2013 survey by the Chronicle of Higher Education asking why faculty chose to engage in teaching a MOOC, found that the most frequently given answer was providing access to higher education (Kolowich, 2013). Online education in any form
has the potential to reach learners beyond the geographical boundaries that limit brick and mortar institutions (Irvine, Code, & Richards, 2013). One of the key goals of the cMOOC has been to open education for the masses but research currently demonstrates that the typical MOOC participant is already well-educated and lives in the developed world (Breslow, Pritchard, DeBoer, Stump, Ho, & Seaton, 2014; Jordan, 2014; Macleod, Haywood, Woodgate, & Alkhatnai, 2015; Norman, 2014). This is a distressing fact set against the idea that MOOCs could educate the uneducated in the developing world (Friedman, 2013). Sandeen (2015) refers to this phenomenon as attracting a leisure learning or professional development crowd rather than reaching a segment of people in need of postsecondary learning.

Citing data from a study conducted by University of Pennsylvania, Emmanuel (2013) intensifies these facts stating that people participating in MOOCs in developing countries are often from the wealthiest families and already have educational attainments significantly higher than the general population of educated people in those developing countries. Agarwal, Kumar, & Agarwal (2015) compared recent efforts in India to develop a MOOC platform for the burgeoning population of people wanting access to engineering courses to that of Coursera and EdX and found areas that needed improvement in order to reach the lower end of the socioeconomic strata of their country. Participants from the Indian subcontinent appear to have an affinity to the edX platform yet government efforts there are to turn the traffic toward their own country’s MOOC initiatives (Joshi, 2015). Macleod, Haywood, Woodgate, & Alkhatnai (2015) noticed a
spike in registrants from China signaling people in that region of the world seeking access to top-tier higher education.

According to Emmanuel (2013) reaching the educated and wealthy with MOOCs only serves to reinforce the advantages of the privileged rather than serving the ideal of improving life for those lacking advantages in developing countries. A number of MOOCs are reporting that their enrollments are not only weighted toward the privileged end of the spectrum, but that there is also a significant preponderance of males who take MOOCs as compared to females and that the majority of MOOC participants male and female come from English speaking nations of the west, particularly North America (Norman, 2014). In addition to these less than encouraging facts, affordable, reliable internet access continues to be a barrier to educating populations in the developing world via online instruction (Joshi, 2015; Naidu & Barbera, 2014; Yuan & Powell, 2013). In recent years mobile technology has begun to fill the gap where internet access and electricity are still spotty and unreliable (Joshi, 2015). Recent studies also show a remarkable increase in the availability and use of learning technology equipment, especially mobile devices, and web 2.0 tools (Gosper, McKenzie, Pizzica, Malfoy, & Ashford-Rowe, 2014).

Affordability

One consistent theme in the affordability category is that MOOCs in their current form are much more expensive to develop than smaller, on-campus courses (Cusumano, 2014). Hollands and Tirthali (2014a) mention reducing educational costs as the third
most important institutional goal in their study and found that because of their excessive need for faculty time and other institutional resources, many are concerned that MOOCs in their current form are not financially sustainable. MOOCs are currently extremely expensive to develop and launch, in some cases as much as $50,000.00 in terms of faculty time and production costs (Popp, 2013; Sandeen, 2013b). This expense makes MOOCs a difficult project for smaller institutions with tighter budgets. However, one small, private institution in a southern state recently received a $571,000.00 grant to begin experimenting with MOOCs for teacher development to offset expenses more easily bourn by larger research universities and elite institutions (Shoun-Smith, 2014).

In addition to the production costs associated with developing MOOCs, faculty report that producing MOOCs takes many more hours of prior preparation and ongoing maintenance from the faculty side than traditional courses (Kolowich, 2013). Stein (2014) points out one positive outcome of the added development time are the ability of faculty and designers to collaborate and focus their work in their areas of interest. Richter & Krishnamurthi (2014) highly recommend this team collaboration of faculty and instructional designers in order to overcome many of the issues that face faculty in developing MOOCs such as knowledge of copyrights and how to leverage existing resources in the production phases of a MOOC. However, this extra time often comes at the expense of regular faculty duties, which is an unacceptable proposition for most institutions and their faculty (Alvario-Hoyos, Perez-Sanagustin, Delgado-Kloos, Gutierrez-Rojas, Leony, & Parada, 2014). This expense of time is not free time but represents the need for institutions to fund all the added coordination costs (Belleflamme
& Jacqmin, 2013). Stein (2014) adds that faculty developing MOOCs do expect to be paid for their extra time in producing and maintaining their MOOCs. Alvario-Hoyos, Perez-Sanagustin, Delgado-Kloos, Gutierrez-Rojas, Leony, & Parada (2014) wrote up their collective experiences developing a MOOC from scratch in order to guide other professors in what to expect time-wise on new course development by providing a useful rubric for course development. Richter & Krishnamurthi (2014) also provide a list of best practices for Faculty Development Centers who focus on providing help and resources for faculty who will engage in MOOCs.

Friedman (2013) and others hold out hope that MOOCs may provide the solution to the rising costs of higher education by providing access to education for those at the lower end of the socioeconomic spectrum (Archibald & Feldman, 2012; Cooper & Sahami, 2013). In the first decade of the millennium the spending rates per student dropped and tuitions continually rose and students and their families shouldered most of the costs of higher education (Desrochers & Kirshstein, 2012). This is a trend that continues into the second decade of the millennium which makes MOOCs more important as an innovative tool to educate more students more cost-effectively (Belleflamme & Jacqmin, 2013; Sandeen, 2013b). According to Kolowich (2013) faculties who have taught MOOCs in the past believe that MOOCs have the potential to make college more affordable. As MOOCs continue to develop through experimentation, institutions may indeed expand their reach but as of yet skeptics tend to think that MOOCs ability to contain growing educational costs will only be marginal at best (Naidu & Barbera, 2014).
Taneja & Goel (2014) remind readers that the current crop of for-profit MOOC platforms exists due to infusions of investor capital and that those investors expect to eventually see a return on their investments (ROI). This was also the conclusion of Popp (2013) in regards to the relationship between Coursera and the University of Pennsylvania, remarking that shareholders may eventually demand a return on their investment. Schrag (2013) includes the comments of platform developers and their long view for ROI but also pointed out that cash-strapped non-profit administrators are not so patient. Only time will tell how patient investors will be in regard to seeing their returns from these educational experiments (Daniel, 2012; Schrag, 2013).

Researchers and commentators continue to search for ways of making MOOCs profitable (Belleflamme & Jacqumin, 2013; Daniel, 2012). Dellarocas & VanAlstyne (2013) suggest a number of ways that MOOCs could be paid for such as by the states themselves stating that MOOCs could be as politically defensible as Pell Grants. The researchers also suggest that students could pay a reduced tuition upon successful completion as well as a paying for a host of other services provided by the platform such as diagnostics and tutoring throughout the duration of their studies (Dellarocas & VanAlstyne, 2013). Taneja & Goel (2014) make similar suggestions and add that, in addition to students paying tuition and paying for services, there could be employers who would be interested in contracting with MOOC platforms in order to identify talent for their organizations, using the MOOC as a screening tool for potential job candidates. This potential option has evolved a bit more in the recent acquisition of Lynda.com a popular for-profit learning platform by Social Media networking giant LinkedIn.
(Blumenstyk, 2015). Radford, Robles, Cataylo, Horn, Thornton, & Whitfield (2014) surveyed employers as to their awareness of MOOCs and found that of those human resource professionals who were aware of MOOCs, a solid majority of them considered using MOOCs as a source for talent and hiring decisions. Macleod and others (2015) found that in countries of southern Europe, economic forces were acting to drive participants to MOOCs for an inexpensive way to improve their career development.

Accreditation

Schrag (2013) indicates that the University/MOOC platform partnership has already changed the higher education business model, making credit-bearing, tuition-charging MOOCs a current threat to higher education generally and legal education specifically as at least one law school has contracted with an unnamed provider to offer MOOCs for credit in legal subjects. As the number of MOOCs offered continues to grow the number of credit-bearing MOOCs is still relatively low (Norman, 2014; Wilson et al., 2014; Yuan & Powell, 2013). As of yet, there are very few MOOCs available for credit but the pool of credit-bearing MOOCs is steadily growing (Kolowich, 2013; Schrag, 2013). One reason for this lack of accredited courses is that traditional institutions do not want to undermine their residential programs with cheaper options of at least similar quality (Kolowich, 2013; Sandeen, 2015).

According to Naidu & Barbera (2014), assessment in MOOCs remains the weakest quality link, limiting the number of MOOCs for credit primarily because there is, as of yet, no good way to authenticate who is taking the course and competing the
assignments (Schrag, 2013). Siemens, Irvine, & Code (2013) point out another potential barrier to widespread adoption of MOOCs and therefore being able to accredit and assure the quality of the learning experience, is the fact that so many faculty members still remain cautious until more empirical research is done on MOOC learning outcomes. Offering MOOCs without offering students a way of receiving credit limits their use to marketing outreach in the minds of some (Impey et al., 2015). Blumenstyk (2015) reaches a similar conclusion as Baturay (2015) and Jordan (2014), reporting on the recent purchase of a MOOC-like educational website by a well-known networking social media company; the potential for inexpensive credentialing could also impact higher education by unbundling the credentialing services offered by traditional institutions.

Certification remains an issue within the MOOC universe and certifications outside of typical university settings are only as valid as the recognition they receive from employers (Belleflamme & Jacqmin, 2013; Cooper & Sahami, 2013; Schrag, 2013). According to Kolowich (2013) the traditional degree is still the “coin of the realm.” Impey, Wenger, & Austin (2015) echo this sentiment reiterating that a college degree is still considered the best way to a better, more financially secure future. In the context of quality assurance, which is what accrediting bodies do, Conole (2013) warns that the initial design of individual MOOCs is primary to the quality of MOOCs, ensuring that the key components of good learning will provide participants with a quality experience in a MOOC. Belleflamme & Jacqmin (2013) encourage accrediting bodies to use their intermediary role in issues of quality standards to push institutions toward pedagogical
innovations in order to bring MOOCs up to the quality level that traditional classrooms are currently.

One alternative concept that is emerging in the absence of accreditation is the idea of a system of educational badges that can be earned through various aspects of the course (Ahn et al., 2013; Bixler & Layng, 2013; Conole, 2013). The badges become a way for learners to receive an informal type of learning assessment (Abramovich, Schunn, & Higashi, 2013). Law and Law (2013) described an open course badging system piloted through OpenLearn using the Mozilla Open Badge Infrastructure (OBI) and found that awarding badges served to attract participants and keep them motivated to complete courses. The researchers refer to this concept of recognition for informal learning as a soft form of accreditation (Law & Law, 2013). There is already an ecosystem developing for those earning badges, awarding badges, and those whose task is to display the badges for employers to see an earner’s accomplishments (Bixler & Layng, 2013). Abramovich, Schunn, & Higashi (2013) caution, that badges need to receive critical consideration before being fully adopted since they could serve as a demotivating factor in some educational contexts. However, alternative credentialing systems may provide a way for participants in developing or economically disadvantaged countries to improve their employment prospects (Macleod et al., 2015).

MOOC Research Gaps

MOOCs are a new phenomenon in the world of online higher education and as such research into the effectiveness of MOOCs is in its infancy, therefore, research gaps
are to be expected (Saadatmand & Kumpulainen, 2014). According to Jordan (2014) there is a gap in MOOC literature studying how course characteristics influence enrollment and completion rates. Data released by Coursera to its partner institutions does not make their way into the mainstream world of MOOC research and may conflate six figure enrollment numbers with active participation and completion rates (Jordan, 2014). Researchers are concerned with how to engage learners in quality learning experiences in MOOCs in order to increase completion rates (Yang, Sinha, Adamson, & Rose, 2015). Researchers are also interested in the motives institutions have for planning and developing MOOCs but very little exists in the body of literature discussing what teachers experience in teaching on such a massive scale (Ross, Sinclair, Knox, Bayne, & Macleod, 2014; Yuan & Powell, 2013). In an environment with so many pedagogical questions, the faculty perspective of teaching on a massive scale would be key in determining the future of MOOCs (Lombardi, 2014; Lowe, 2014; Ross et al., 2014).

**MOOC as Disruptive Innovation**

Disruption in the context of higher education simply means that some product or business model periodically emerges that changes the way institutions, faculty, and students go about the business of teaching and learning (Christensen, 1997; Conole, 2013). Disruptive innovation theory, more specifically, describes the phenomenon where new entrants to a market break into the market, most often at the low-end, which threatens incumbents at the high-end of a market with an innovative product or a new business model (Christensen, 2006; Yu & Hang, 2010). The situation that allows this
low-end entry is the preoccupation of the market incumbents providing sustaining innovations to its already established customer base and ignoring the new entrant, dismissing their disruptive innovation, such as a cheaper product previously unavailable or a completely new business model (Christensen & Raynor, 2003; Yuan & Powell, 2013). The newer, more affordable product or business model attracts customers for whom the new product will suffice and gains market share as the product is taken up-market (Christensen, 1997).

Christensen’s (2006) work describing how theories develop describes his initial observations of the phenomena began as he researched the disk drive industry, building a database of every company in the world that manufactured components for the industry between 1976 and 1992, their revenue history and market share (40). According to Yu & Hang (2010) this database was the result of Christensen’s own dissertation work on the innovator’s challenges in a market environment against competitive forces. The theory of disruptive innovation evolved from the 1942 work of Schumpeter on “creative destruction” (Yu & Hang, 2010). A succession of researchers since that time has observed a similar phenomenon in technological advancement that unseated top companies in any number of various industries (Yu & Hang, 2010). Christensen (1997) was originally concerned with technological market disruptions but actually coined the term disruptive innovation in his subsequent work (2003). Since then, researchers have noticed other types of disruptive innovations (Johnson, Christensen, & Kagermann, 2008; Markides, 2006; Yu & Hang, 2010).
Christensen, Horn, Caldera, & Soares (2011) make the connection between the theory of disruptive innovation and the marketplace of higher education with MOOCs taking center stage in the discussion. Because cMOOCs are open and democratic in nature, they have the most potential to disrupt higher education at the low end of the Christensen disruptive innovation model (Jacoby, 2014). According to Stewart (2013) the open models of education enable democratization of the learning environment and the decenentralizing of the facilitator role where participants recognize their own expertise in creating knowledge (79).

Stewart (2013) also observed that if higher education institutions stake their future on the xMOOC they may, in fact, actually undermine themselves as market incumbents because they are helping develop the literacies in their participants that will eventually open their market to new entrants with newer and cheaper products and business models. MOOCs also create a direct market for professors to own and license the content they produce (Domonell, 2013; Impey et al., 2015). The suggestion of MOOCs disrupting the business model of higher education is critical to leadership because the MOOC also disrupts the traditional role of faculty (Decker, 2014). Stewart (2013) also offers the interesting perspective that MOOCs may or may not represent the future demise of institutions of higher education but may offer a way of acculturating new digital literacies and distributed models of learning.

Yuan & Powell (2013) offer a word of caution in applying disruptive innovation theory to higher education because there is not a great overlap in their markets between traditional institutions and other educational competitors like there is in technology
markets. In other words, MOOCs are not as likely to replace established universities the way internet technologies and services replaced older forms of digital storage media and retail storefronts unless they are configured to offer entire degree programs (Bruff et al., 2013; Yuan & Powell, 2013).

Summary

This review of literature has traced the brief history of Massive Open Online Courses (MOOCs) from their genesis in Connectivist pedagogy to their widespread use as a technology platform institutions use to experiment with massive teaching (Sandeen, 2015). This history is relevant because of the speed with which institutions have adopted the technology that broadcasts video lectures and course assignments to massive audiences world-wide and because the use of MOOCs is still in its infancy (Breslow et al., 2013; Norman, 2014; Schrag, 2013). Currently, more and more significant studies are being conducted in the effectiveness of MOOCs as an educational tool to reach mass audiences in the developing world (Jacobs, 2014; Jordan, 2014; Sandeen, 2015). A significant feature of MOOC history is the original dichotomy that has developed based on connectivist pedagogy and subsequently moving back in the direction of behaviorist pedagogy in later iterations (Cormier & Siemens, 2010; Weller, Siemens, & Cormier, 2012; Sandeen, 2013a; Siemens, 2005). According to Hollands and Tirthali (2014b) MOOCs are beginning now to further break down into different segments with different uses and purposes but using acronym nomenclature in the style of MOOCs and not all of these iterations are massive in nature. The dichotomy has come about due to the
pedagogical philosophies guiding both major divisions. Connectivism driving cMOOCs and the more traditional behaviorist pedagogies guiding the extended or xMOOCs due to their adherence to residential campus course structures (Sandeen, 2015). Pedagogies underpinning MOOCs are a major issue in the study of MOOCs regardless of which side of the dichotomy a course is on because both Connectivism and Behaviorism/Social Constructivism are debated as to their ability to deliver quality online learning to students and participants.

Researchers are currently inquiring as to institutional motivations for contracting with MOOC platforms and experimenting with MOOCs. What is coming from these studies is the fact that most institutions believe MOOCs have the ability to do a multitude of positive things but most importantly they have the ability to reach a world-wide audience increasing the visibility of their individual institutions (Allen & Seaman, 2014). However, there are still many obstacles to overcome before the full potential of MOOCs will be realized. While MOOCs are unlikely to replace the current system of higher education, they do hold the potential to lower the cost of higher education for those most in need of vital access to higher education (Friedman, 2013). Researchers appear to agree that MOOCs are not likely to completely replace traditional programs but will significantly enhance the traditional residential higher education program (Belleflamme & Jacqmin, 2013; Bruff et al., 2013).
CHAPTER 3

METHODOLOGY

The Massive Open Online Course, or MOOC, for short, is rapidly becoming the online course option of choice for many institutions as opposed to the in-house, institutionally-owned learning management system platform, or LMS (Fini, 2009). According to Allen & Seaman (2013) well over half of the nation’s institutions of higher education are undecided about the viability of MOOCs, while there are 6.7 million students who are taking courses online and that number is continuing to grow annually. The MOOC continues to receive mixed reviews and attention from sources who believe MOOCs will fail to deliver measurable gains in learning as well as those who believe that the MOOC is here to stay as a vehicle to provide accessible and affordable educational options as well as opportunities for professional development, lifelong learning, and to expand the visible reach of the institutions that implement them (Adams, Yin, Madriz, & Mullen, 2014; Baggaley, 2014; Gillani & Eynon, 2014; Kolowich, 2015).

Rationale for the Study

In order for MOOCs to make major inroads for the future of higher education, understanding the experiences of faculty is going to be a key factor (Ross, Sinclair, Knox, Bayne, & Macleod, 2014). Institutional decision makers need the input of faculty developing and teaching MOOCs to know for sure if MOOCs are contributing to
institutional goals including expanding the global reach of the university (Hollands & Tirthali, 2014; Lombardi, 2014). Thus far, literature on this emerging phenomenon is concentrated on the student experience in Massive Learning Environments (White et al., 2014; Zheng, Rosson, Shih, & Carroll, 2014). According to Lombardi (2014) academic leaders’ decision-making process in regard to MOOC experimentation requires faculty input because faculty are on the front lines of determining quality pedagogical course content and quality outcomes for the participants. Additionally, academic faculties are major university stakeholders responsible for the operational and pedagogical structure of teaching MOOCs and faculty work actually defines the university (Stewart, 2013). Stewart (2013) also claims that faculty are among the collegial owners of an institution and responsible for much of the leadership of the academy. Faculty and academic administration must come together in deciding if MOOCs are an appropriate way to educate and what their strategic role in any institution is going to be (Soffer & Cohen, 2015).

Research Question

MOOC providers (xMOOC) and experimenters (cMOOC) believe that MOOCs hold great promise for the future of higher education but there are still a number of unanswered questions regarding their pedagogical framework, their ability to provide access to those most in need of quality education, and their affordability to the institutions employing them (Jordan, 2014; Yang, Sinha, Adamson, & Rose, 2013). Institutional administrators have diverse motives for partnering with MOOC platforms,
primary among which are to extend institutional reach and drive enrollment (Allen & Seaman, 2014; Daniel, 2012; Impey et al., 2015; White et al., 2014). For MOOCs to reach their educative potential many questions need to be answered from the perspective of those on the front lines of developing and teaching on a massive scale (Breslow et al., 2013; Ross et al., 2014). In order to approach this research end to understand faculty experiences teaching MOOCs that will inform leadership decision making, the researcher proposes to answer the following research question (Grbich, 2013; Ross et al., 2014). RQ: What are the lived experiences of faculty members who have participated in the design, development, and delivery of MOOCs that can inform leadership decision-making in regard to institutional strategy?

Research Design

Qualitative research employs a diverse set of interpretive practices designed to better understand a phenomenon beyond its numerical value and quantitative characteristics (Denzin & Lincoln, 2011). Inquiries involving or sensitive to human beings and the meaning placed upon social phenomenon by the people involved in them are better supported by and researched within a qualitative framework (Creswell, 2012). In order to interpret natural, social phenomena qualitative researchers use observational tools to inquire and listen to people recount their experiences (Lincoln & Guba, 1985). Qualitative interviewing is the correct approach to develop a proper understanding of social phenomena outside of a researcher’s own experience (Rubin & Rubin, 2005).
Adams, Yin, Madriz, & Mullen (2014) used phenomenological research to develop an understanding of MOOC completers’ experience in xMOOCs, which provides a good example for how phenomenology and qualitative interviews could be used on the faculty side as well, to further develop understanding of the MOOC phenomenon. Although it is not labeled as a Phenomenology, Wilson and others (2014) undertook a study of staff experiences at a university in New Zealand to document the amount of work staff, including teaching faculty, put into MOOC development. Kolowich (2013) conducted a survey of U.S. teachers who produced MOOCs to uncover their motives for participating in the MOOC phenomenon. This research represents the first attempt, early in the process of development, to understand the faculty side of the MOOC debate from a positivist viewpoint (Crotty, 1998). A richer, thicker description of the faculty experience is required to inform institutional administrators in the process of deciding whether or not to pursue MOOCs at their respective institutions (Grbich, 2013).

The researcher conducted a classical phenomenology to interview professors who have taught at least one massive open online course and to describe through these interviews what has been their experience in teaching these massive open online courses. (Crotty, 1998). Phenomenological research was founded by Edmund Husserl (1931, 1970) with roots its roots in Constructionism epistemology where meaning is constructed by human actors interacting with the phenomenon under inquiry (Crotty, 1998; Groenewald, 2004; Moran, 2001). Phenomenology is an interpretive approach to qualitative research that attempts to understand the essence of an experience or phenomenon and how participants make sense of their experience with the phenomenon.
(Grbich, 2013). Essential to understanding the essence and meaning of an experience is the researcher bracketing his or her subjective experience in order to offer an unbiased narrative account of the experiences of several individuals (Crotty, 1998).

Population

Currently there are two different prevailing types of MOOCs: the x MOOC or extended MOOC and the cMOOC or Connectivist MOOC (Clow, 2013; Rodriguez, 2013). The researcher conducted faculty interviews from both types of MOOCs in order to get an adequate understanding of faculty experience teaching massive scale courses across the spectrum of course types. In order to reach faculty members who have experimented with xMOOCs, the researcher contacted a local research university that is currently contracting with an xMOOC platform to deliver a Master’s level MOOC-based program to solicit interviews with faculty. The researcher had a fellow cohort member who had access to this body of faculty and agreed to help the researcher gain access to interviewees. These xMOOC faculty members work with a proprietary platform discussed in the literature review and known as Coursera described in the literature review above.

In order to reach the cMOOC community the researcher contacted well-known cMOOC teachers through individual contact via email. The researcher used Google search engine to locate the contact information for six well-known and publicly available cMOOC developers and facilitators. The first two cMOOC proponents interviewed were part of the facilitation team conducting ongoing research during the very first MOOC
experiment in 2008 known as CCK08. A third cMOOC interviewee was Director of the Division of Teaching and Learning Technologies and an adjunct professor at an institution on the Eastern Seaboard of the United States and was instrumental in instructing a MOOC as part of a team. Each of these interviewees personally knew other, key cMOOC faculty who would be willing to provide an interview to reach data saturation. The researcher relied on these referrals for snowball sampling strategy.

The faculty experience designing, developing, and delivering MOOCs is necessary to forge the future of teaching massive level courses (Liyanagunawardena et al., 2012; Lombardi, 2014; Ross et al., 2014). To answer the research question the researcher needed to conduct semi-structured interviews with six to twelve faculty interviewees who have previously taught or are currently involved in the design, development, and delivery of MOOCs (Guest, Bunce, & Johnson, 2006; Mason, 2010). According to Moustakas (1998) 5-15 completed interviews should result in information saturation that will yield the essence of the phenomena under investigation.

Sample

Conducting non-probabilistic, qualitative sampling calls for a criterion-based form of sampling referred to as purposive or purposeful sampling (Mason, 2010; Merriam, 1988). Creswell (2012) points to three main concerns for a purposeful sample: whom to select as a participant, the sampling strategy, and the size of the sample. According to Groenewald (2004) purposive sampling and snowball sampling can be used in conjunction with one another and the same seems appropriate for this study. The main
criterion for this purposive sample is that of faculty members or instructors who have taught either a cMOOC on any open platform or an xMOOC on a proprietary platform or participated in the development of a MOOC of either type. To develop a purposive sample the researcher identified faculty in a Southeastern Research Institution utilizing a third party technology platform to deliver xMOOCs. Upon approval from the Institutional Review Board, the researcher conducted, semi-structured interviews by telephone and record them for later transcription. Per IRB protocol, interview participants were informed that the call would be recorded and all verbally agreed to a recorded interview and sent in a signed IRB consent form. In addition to this xMOOC site, the researcher has located the professional contact information for six cMOOC faculty identified by Google© search. Upon approval from the Institutional Review Board, the researcher contacted each cMOOC faculty individually with an explanation of the study and an invitation to participate in a telephone interview. Each individual that agreed to a telephone interview was sent an electronic informed consent form to be signed and faxed back or scanned in and sent back to the researcher. The researcher used Snowball sampling to query the cMOOC participants as to individuals who have taught MOOCs and who might be willing to sign an informed consent to participate in a semi-structured interview (Tongco, 2007).

Participants

Faculty members or instructors who had taught xMOOCs or cMOOCs were interviewed in order to discover their lived experiences in developing and delivering
massive open online courses. The researcher used these interviews to develop a rich, thick description of the essence of this experience in order to inform administrative leaders planning MOOC experiments in the future so that those efforts to make education accessible and affordable might be successful and provide a quality educational experience for participants and faculty.

Instrumentation

In phenomenology, the researcher is the instrument collecting and analyzing the data while bracketing his or her experience into the narrative (Creswell, 2012; Grbich, 2013). According to Crotty (1998) the purpose of this is for the researcher to set aside their own understandings to gain a fresh understanding of a phenomenon from a different perspective. To develop a semi-structured interview appropriate to develop a clear understanding of faculty experience in MOOCs a set of open-ended questions was developed and piloted prior to use. The researcher developed this list in conjunction with the dissertation committee methodologist. In order to pilot the semi-structured interview prior to using it to interview, the researcher shared the questions with two faculty members at a small, private institution in the Southeast who had been awarded a large grant by their state to experiment with MOOC development, in order to test the wording and open-ended nature of the questions (Burke & Miller, 2001). These MOOC experimenters were similar individuals to those who would be interviewed in that they are university faculty and have extensive university teaching and administrative
leadership as well as some experience with online teaching and scholarship as well as experience in the design, development, and delivery of MOOCs.

Validation

In order to establish trustworthiness for the data collected in this study the researcher followed the steps established by Lincoln & Guba (1985). In terms of establishing credibility the researcher’s field activities consisted primarily of recorded telephone interviews. In addition to interviews, the researcher conducted member checking by sending an electronic copy of the findings to the participants in order to verify if their words are truly represented by the narrative. All those who wished to take the opportunity to comment were satisfied that the results chapter correctly characterized their comments in the interview. To establish transferability the researcher produced a rich, thick description of the essence of teaching on a massive scale. The researcher kept the interview transcripts anonymized by giving participants pseudonyms. This was done so that interviewees could not easily be identified by their comments. All raw data has been retained by the researcher secure and an audit trail of field activities and methodological notes provided so that dependability and confirmability will be satisfied.

Data Collection

According to Creswell (2012) qualitative interviews are an appropriate technique for collecting data from the personal lived experience of those who have experienced the phenomenon under investigation. Qualitative interviewing requires acute, sensitive,
interpersonal listening skills and organizational skills (Kvale & Brinkmann, 2009; Rubin & Rubin, 2005). The researcher conducted a series of one-on-one, semi-structured interviews by telephone with xMOOC faculty in a research university in a Southern state. It was determined due to logistical and scheduling difficulties that telephone interviews with identified faculty members who have previously taught a cMOOC or an xMOOC were most suitable to every participant (Burke, & Miller, 2001; Creswell, 2012). Data saturation is determined to be that point at which new themes are no longer emerging from the information (Guest et al., 2006; Mason, 2010; Moustakas, 1998).

Institutional Review Board Approval

The researcher submitted all necessary forms for Institutional Review Board approval of this study. According to 45 CFR 46, also known as The Common Rule any academic research that involves human subjects must be reviewed by IRB professionals in order to determine any potential ethical violation or potential harm that could result from a proposed study (DeWett, 2010; Karpf, 2012). The Mercer Institutional Review Board required informed consent forms for all individuals who were interviewed. Further approval was needed and received from the Institutional Review Board of the Research University as well as the small, private institution where the pilot interview was conducted.
Data Analysis

All prerecorded, telephonic interviews were recorded using the NoNotes smartphone application that providing the researcher with a recorded interview that could be dictated into a transcript. The application also offered transcription services that was utilized only once and was not used again because of too many inaccuracies in transcription. These interview transcripts were read and re-read by the researcher. Upon the second reading of each transcript line by line open coding was done as significant codes emerged from the interview transcripts. Initial codes were condensed into appropriate themes upon subsequent readings. Significant themes that emerged provided the essence of the faculty experience described in the written narrative by the researcher.

Reporting Results

The study results are published and discussed in chapter 4 of this dissertation and an electronic copy of the approved chapter four was sent to participants for member-checking and to report back the findings of all interviews. Those who reviewed in the two week period allowed for additional comments were satisfied that their statements were fairly reflected in the narrative.

Summary

The Massive Open Online Course has rapidly reached the national conscience and has changed the global landscape of higher education and some still believe that it is simply a fad that will follow the peaks and valleys of the Gartner Hype Cycle (Baggaley,
Emerging research is demonstrating that while the initial hype is beginning to subside interest in MOOCs is continuing to grow (Wexler, 2015). While researching the faculty role in MOOCs has begun to appear in the literature a rich, thick description of the essence of their experience teaching massive courses is needed to inform leadership of the ability MOOCs have to enhance the mission of the institution (Lombardi, 2014; Stewart, 2013).

This research study proposed to develop a narrative of faculty experience in MOOCs by answering the question of how the essence of faculty experience informs institutional decision makers in the MOOCs ability to contribute to institutional goals. In order to do this a classical phenomenology was conducted to explore the lived experience of faculty who have developed and delivered course content in either an xMOOC or a cMOOC. The researcher conducted one-on-one, recorded semi-structured interviews by telephone with experienced xMOOC and cMOOC faculty. The researcher produced a rich, thick description of this essential experience bracketing his own experience. The trustworthiness of the data was established by following the steps laid out by Lincoln & Guba (1985).

The researcher’s proposal was accepted and approval was granted by the Institutional Review Board. Subsequently, the researcher developed the semi-structured interview questions and piloted them with two similar faculty members in a small, private university in the Southeastern United States who had won a six-figure state grant to experiment with the design, development, and delivery of MOOCs. Once the set of interview questions was successfully piloted, the researcher set up the interviews and
recorded them with NoNotes smartphone application to produce interview transcripts. Transcripts were be coded using open coding and initial codes were condensed into appropriate themes that emerged from the data. All research participants were sent an approved chapter four for their information and to see results of the study and the impact of their participation.
CHAPTER 4

RESULTS

The work of academic faculty designing, developing, and delivering coursework is what defines institutions of higher learning (Stewart, 2013). The purpose of this research study is to develop an understanding of the lived experiences of faculty members engaged in designing, developing, and delivering Massive Open Online Courses (MOOCs) in order for institutional leaders to assess the viability of MOOCs for their institutions. Institutional leaders and decision makers need valid, qualitative research information regarding faculty lived experiences in order to understand the opportunities and benefits of designing, developing, and delivering instruction on a massive scale.

To achieve this research goal the researcher engaged in a classical phenomenology (Husserl, 1931). The researcher conducted seven semi-structured interviews with faculty members who have been key players in the design, development, and delivery of MOOCs. Six telephone interviews were conducted remotely using the Nonotes.com smartphone application which would record calls for later dictation into interview transcripts. All participants agreed to telephone interviews and were informed by the researcher that the interview was being recorded. Each participant agreed before
commencing the interview. One additional interview was conducted using the WebEx platform for a participant who was not physically present in North America. The WebEx platform offers the option to record an interview in order to be transcribed for analysis. This participant also agreed to have the interview recorded by the Web Ex platform. All interviews lasted anywhere from 30 minutes to 1 hour and consisted of 10 in-depth questions aimed at developing an understanding of the lived experiences of faculty members who have been involved in the design, development, and delivery of MOOCs. Each faculty participant received an electronic copy of the questions prior to the interview so they might have an opportunity to review the questions along with an informed consent form which was signed and returned to the researcher prior to using and analyzing the interview transcript for that individual.

The interviews were recorded on the Nonotes.com smartphone application in audio format that allowed the researcher’s smartphone to record the sessions and save them as an audio file on the application website. The WebEx platform allowed interviews to be recorded and saved on the researcher’s laptop. The recordings from telephone interviews were available for download on the website or directly from the smartphone application and could be archived directly from the application as well. Each interview that appears in this analysis was agreed upon between the researcher and the participant before proceeding with the interview. The recordings were used to develop interview transcripts that were coded to discover codes and themes of faculty lived experience in order to develop a rich, thick description of faculty lived experience.
Research Question

MOOC providers (xMOOC) and experimenters (cMOOC) believe that MOOCs may hold great promise for the future of higher education but there are still a number of unanswered questions regarding their pedagogical framework, their ability to provide access to those most in need of quality education, and their affordability to the institutions designing, developing, and delivering them in conjunction with numerous third party platforms (Jordan, 2014; Yang, Sinha, Adamson, & Rose, 2013). Institutional administrators have diverse motives for partnering with MOOC platforms, primary among which are to extend institutional reach and drive enrollment (Allen & Seaman, 2014; Daniel, 2012; Impey et al., 2015; White et al., 2014). For MOOCs to reach their educative potential many questions need to be answered from the perspective of those on the front lines of developing and teaching on a massive scale (Breslow et al., 2013; Ross et al., 2014). In order to approach this research end to understand faculty experiences teaching MOOCs that will inform leadership decision making, the researcher proposes to answer the following research question (Grbich, 2013; Ross et al., 2014).

RQ: What are the lived experiences of faculty members who have participated in the design, development, and delivery of MOOCs that can inform leadership decision-making in regard to institutional strategy?
Pilot Study Results

In conjunction with the researcher’s methodologist, an interview protocol was developed with seven open ended questions in which to assess faculty lived experiences designing, developing, and delivering MOOCs. In order to pilot the questions prior to actual interviews the researcher sought out available MOOC faculty who were most like the actual interview subjects. Two such faculty members were located in a small, private, non-profit institution that had received a major state education grant to experiment with MOOC design, development, and delivery. In order to access these faculty members the researcher had to apply for and received Institutional Review Board approval from that institution.

The original seven questions were offered to the MOOC developers who evaluated and commented on the questions and their wording. One of the faculty members with journalism experience proved effective at helping the researcher improve the wording of the questions to be more succinct. Both faculty members were helpful in determining that all questions needed more focus in regard to the researcher’s research question and the need to use the actual wording from the research question in the interview questions. Also, the Pilot faculty suggested that the interview questions have the research question at the top of the page with reworded questions and that it be emailed to the participants prior to the actual scheduled interview in order for the interviewee to have a chance to think about the questions before offering their answers. In addition to rewording all of the questions, the seventh question was eliminated and
four additional questions were added. An example of the revised interview is located in Appendix A of this dissertation.

Respondents

In order to sample MOOC faculty on their lived experience with the design, development, and delivery of MOOCs access was gained by the researcher to a research university in the Southeastern United States. An initial contact was introduced to the researcher by an employee of the institution known by the researcher. This provided the first interview subject and from there, two strategies were employed to gain access to other potential interview subjects.

The first strategy was to use snowball sampling by asking each participating interview subject, the name of another colleague known to them, who might be willing to interview and once a name was submitted, email addresses were searched and obtained from the institution’s employee directory on the institution’s website. The second strategy was to search the website of the participating MOOC platform. On the MOOC platform website, the researcher located the institution and searched for participating faculty members. The researcher listed the names of participating faculty and then went back to the institution’s website to obtain email addresses. Over the course of the study, individual emails were sent to twenty-three faculty members from five research institutions in the United States and Canada and eight agreed to interview. One faculty interview was dropped because it did not get recorded and was not transcribed for
analysis. In each email, the researcher attached a Word document that contained the title of the research study along with a stamped informed consent form.

The pilot study revealed that faculty should have the intended questions prior to the interview so they could preview the questions prior to agreeing to the interview. When interview subjects responded positively, dates and times for the interview were set up and the telephone interviews were conducted on the given day, at the given time, and few questions were asked beyond the published questions, in fairness to the participating faculty members. These strategies succeeded in seven faculty interviews that provided in-depth insights into the lived experiences of faculty members who have designed, developed, and delivered MOOCs in order to inform institutional leaders considering MOOC initiatives. In the description that follows, all interview subjects have been given pseudonyms in order to protect their identities, ensuring that their statements remain confidential.

As stated above, the first respondent was introduced by email to the researcher through a mutual colleague, known by the researcher, who also works in human resources at the institution. This respondent is a male professor who teaches MOOCs and is known to have worked with multiple platforms to design, develop, and deliver MOOCs in Computer Science. This faculty member was one of the few interviewed who had experience with multiple third party proprietary platforms. This participant is known throughout the study as Peter.
The second respondent was located through the institutional link on the MOOC platform website. This respondent is a retired, male professor who has also worked in the Provost’s office and therefore has been both a professor and an institutional administrative leader. His introduction to MOOCs was his interest in experimenting with the new technology while continuing his teaching practice throughout his retirement years, seeking a productive pedagogical project. This MOOC was designed, developed, and delivered as an answer to a Gates Foundation Grant in a subject area underrepresented in MOOCs. In the study he will be referred to as Frank.

The third respondent is a female assistant professor of humanities with an extensive background in technology and pedagogy. This is a professor who is versed in distance education and associated with numerous faculty and practitioners of eLearning. This professor’s MOOC was also designed, developed, and delivered in response to a Gates Foundation grant in underrepresented subject areas. The pseudonym for this individual is Susan.

The fourth respondent is a non-tenure track faculty member who is responsible not only for designing, developing, and delivering on campus courses in addition to MOOCs but is also responsible for some of the program administration in his subject area. This respondent is a male professor with a military background and is one of the leading MOOC developers in his subject area. This participant has produced numerous MOOCs in his field and has produced MOOCs that have been widely used as supporting materials by faculty and students. This person is referred to by the name Sid.
The fifth respondent is an educational technologist who, at the time of his MOOC experience was working as an adjunct professor at an institution on the Eastern Seaboard of the U.S. and is currently teaching in Europe and is running a private IT company. This respondent is a male and was part of an early MOOC collaboration that focused on connectivist pedagogy. This participant offered a perspective that demonstrated how MOOCs could be produced in a less expensive manner and opened up a number of contacts on the connectivist side of the MOOC phenomenon. He is referred to throughout this research, pseudonymously, as Roman.

The sixth respondent is a female cMOOC author and developer from Canada who serves as the Dean of an online institution. This respondent was heavily involved in cMOOC research as part of the very first cMOOC launched in Canada as described in the literature review of this research document. This professor is widely published and was sought out and contacted as a result of her extensive body of published works. She will be known throughout the study as Lilly.

The seventh respondent was also a female professor working with an educational research firm in Canada who was also part of the research and observation of the very first MOOC to be launched. This participant is versed in cMOOCs and is well known for publishing and coauthoring numerous works on MOOCs. Her comments noted in the research are recognized under the name Sue Ellen.

The eighth respondent is a professor in the Southwestern United States who developed MOOCs first, on a MOOC platform where faculty work independently with
the MOOC platform and directly with students, independent from institutional contractual constraints. This interview was not properly recorded and no transcript was developed from the interview notes and therefore this interview, although providing valuable insights was not available to re-interview and therefore was dropped from the study. The professor was unavailable to attempt to get a proper recording. Overall this represents a set of faculty from diverse backgrounds and practices current in the developing field of MOOC pedagogy.

Findings

Question 1: Give a brief overview of your experience designing, developing, and delivering MOOCs.

Most respondents enthusiastically responded with fairly comprehensive reviews of their experiences with MOOCs. Taken together three themes emerged from the analysis of this question from all seven interviews. The first theme was the fact that MOOCs are on the cutting edge of pedagogical experimentation. Contributing to this theme were repeated ideas of being one of the first at their institution to get aboard the “MOOC train” to which it was often referred. Susan weighed in on the newness,

This was totally new! It was new to everybody who was trying to do it. And so everyone…as I have written about this because I wanted to track the process of doing this…because what I had figured out very quickly was that there was a lot of polarized debate about MOOCs. But no one was talking about the process of making one and
doing one. I felt that was really important. The train had left the station and we were on
the train and there was no stopping the train but we were trying to lay the track in front of
the train as fast as we could so the train wouldn’t derail.

Peter was admittedly, the first professor at his institution [sic] to produce a
MOOC. Lilly and Sue Ellen were facilitators in the very first MOOC. Lilly said that she
came to that experience because there was no research into how technology could
enhance informal learning and she, Began to see evolving technology would have an
impact on education with social media, increased bandwidth, and mobile technology
offering possibilities to increase learning experiences.

I changed my PhD because of the new possibilities of new technology. The more
the social media came in, the bandwidth increased, and the mobile technology changed.
So from that moment I became interested in what the technology can do to increase the
learning experience. Also there wasn’t any research yet, there were no journal articles on
how to use blogs or wikis, you know, how to use technology to enhance informal
learning.

Sue Ellen was, part of a Canadian team that actually coined the term MOOC and
was conducting preliminary research that would feed back into the design, development,
and delivery of future MOOCs. She also related that she has been working with MOOCs
from their beginning and has been co-designing and facilitating MOOCs from the
beginning.
The whole MOOC experience; we’ve been at it since 2008 designing, co-developing, and facilitating MOOCs with my colleagues. The first MOOC emerged from an open educational resource movement. The term [MOOC] was actually coined here in the Canadian Atlantic Maritimes.

A second theme from the general experiences of faculty in MOOCs had to do with the morphology and structure of MOOCs particularly the fact that third-party proprietary platforms rely heavily on prerecorded and heavily edited video instruction. Secondary to the production value was the fact that experts in the field limit video segments to shortened, condensed lectures of no more than 10-15 minutes in length. Overall faculty members commented on the way their teaching had to change and how much time it took to design, develop, and deliver MOOCs. Frank pointed out that MOOCs force professors to teach differently as in relying less on the lecture model for brief snippets of instruction in video format.

It is a very difficult process because it is a very difficult thing. I have been programmed for 40 years to do fifty minute lectures and now you’re doing ten minute lecture modules and so you have to be very careful about what you present in those lecture modules. Then when you make the lecture modules they are professionally developed in the studio. So, I am in the studio with nobody in the room but me and I am not used to that. I am used to being in the classroom getting feedback from students.

Susan said that MOOCs are a lot of work, take a lot of time to design, develop, and deliver, require high value production, require the help of expensive technical
experts, and have serious technical problems that create more work and time consumption.

It pretty much gobbled up the entire next year of my life and any number of people’s lives. I worked with a team of people and from the time we started writing the grant to when we rolled out and finished the MOOC, so that was October to the end of July the following year. It pretty much took up my days and nights. I mean, I had very little time for anything else.

On this topic, Sid said he was “ready to take a break,” noting that he was “experiencing burnout” from the design, development, and delivery of MOOCs after producing multiple MOOCs in his field. A tertiary theme of faculty experience in MOOCs seemed to be the rapid evolution of technology to answer problems in early MOOCs and the numerous possibilities MOOCs have for the future of instruction.

**Question 2: Describe how your institution got into designing, developing, and delivering MOOCs. What went into that decision, who were there key people/positions responsible for making the decision, and describe your involvement in that process.**

Top tier universities, many of which had no experience with online or blended instruction, went full force into the MOOC phenomenon in order to gain market share, perhaps to corner the market. Susan offered that Elite schools jumped at the chance to dominate the MOOC marketplace. Susan pointed out,
The notion of online education has been around for a really long time but there was something about the notion of MOOCs that captured the media’s attention. Elite schools are not really known for distance education and we didn’t spend much time talking to the professionals in the fields of e-learning and distance education.

According to faculty on the front lines of designing, developing, and delivering MOOCs, the media hype fueled speculation that MOOCs were going to revolutionize higher education and the fear of being left behind prompted executive administrators to illicit the help of the third party, proprietary MOOC vendors. Peter stated specifically that “Media hype played a role in the decision to launch MOOCs” at his institution. Further stating that Executive Administrators claimed, “The MOOC train had left the station” believing that MOOCs are the future of higher education and not participating was the equivalent of “being left behind.” Frank also cited that the “Provost’s office was key to MOOC initiatives and that MOOCs are initiated for fear of being left behind.”

Time after time faculty responded that their colleagues encouraged them to join the MOOC phenomenon by designing, developing, and delivering MOOCs in their respective fields. Susan and Sid both claimed that they were “approached by colleagues to teach MOOCs.” Among faculty members surveyed, they came from various fields such Engineering and Computer Science to humanities. Regardless of institutional size, classification, and MOOC type, most faculty participants played the role of content developers, instructional experts, and teachers or facilitators of MOOCs. Decisions to experiment with MOOCS were primarily the role of Executive level administrators.
Susan intimated that “not all faculty realized the decision was finalized by Executive level leadership even though no one was forced to participate in the experiment.”

Digesting all this information, the theme that emerged from this line of questioning was that Executive level administrators were the initial decision-makers. Faculty also noted that it was the financial strain of shrinking state budgets, pressure from legislators, and media hype that influenced these decisions being made quickly as a means of finding relief and potential solutions to the problems facing higher education institutions. Susan made the point that,

It came about at a time when legislators were looking for easy ways to trim and to justify trimming college budgets. A lot of things came together sort of exactly at the moment that allowed MOOCs to rise up.

*Question 3: What specific role have you played in designing, developing, and delivering MOOCs at your institution?*

What emerged from this question was that individual faculty members in xMOOCs and cMOOCs play slightly different roles at their institutions. Connectivist MOOC faculty members are often course facilitators who support students who are creating their own online learning space as well as choosing and producing their own learning activities. Faculty members working with third party platforms often find themselves working with a cohort of non-teaching technical professionals such as videographers, IT professionals, and editing specialists as well as course designers.
The one role that crosses both MOOC forms is the role of content developers. Faculty who teach MOOCs, regardless of whether they are xMOOCs or cMOOCs serve as the main content creators for MOOCs. Roman had this to say:

I played the role along with every other educational technologist in developing it. I was one of three or four people who helped imagine it and helped design it. My role was as a designer was thinking about the course more akin to the web and I was very much driven by that vision.

Both xMOOC and cMOOC faculty collaborate with other faculty members and technical specialists in order to create online instructional content in its various forms. Frank defined two different roles he played in the design, development, and delivery of MOOCs.

Well, I think there are two roles: I serve on the committee that decides what new MOOCs will be developed and there is a budget in the Provost’s office that pays for that and most of the money goes to development of the lecture modules, as you can imagine because they are professionally done in a studio. And the second role is that I developed one of the early MOOC classes which was well received.

Sid found his experience to be worthwhile but felt a much more concentrated area of expertise was needed in his role.

My specific role has been just…the institution decided this is something they wanted to get into and they recruited me to be someone who would deliver these and so
my role is not in the overall why we are delivering them, mine has been to design, develop, and deliver specific MOOCs in [my subject area].

MOOCs require the main specialty of instruction and content creation in order for technical specialists to enhance the quality of the video presentations and the learning experiences for participants. Sid was also provided insight into this cross disciplinary relationship.

Yeah, there’s quite a team of institutional folks…we have a couple of studios, we have folks who film and edit and help with the complete process of putting things together. I am also given graduate teaching assistantship support for helping set up the web page before the course launches.

These non-teaching professionals build out parts of instructional websites in open-source spaces such as Moodle or proprietary platforms. Assignment banks, discussion forums, video lectures, and other tools require constant update and functionality changes in addition to instructional content. Faculty in both xMOOCs and cMOOCs collaborate with these professionals and with each other to develop greater functionality to MOOCs. Instruction and academic content are the indispensable links provided by faculty designing, developing, and delivering MOOCs.
Question 4: If your institution has worked with a third-party MOOC platform, how has that experience improved or hindered your role in the design, development, and delivery of MOOCs?

This inquiry was made in order to gauge whether that has been a good experience or if it had been an unpleasant experience. As would be expected, there was a diversity of experience among faculty interviewed. Faculty were reticent to offer harsh criticism to any one platform and the majority of faculty who had experience with proprietary platforms only experienced one platform and had no knowledge of how the other various platforms worked. Only Peter had experience with more than one proprietary platform. Peter disclosed that some MOOC platforms offer more creative control for the creator and others are highly structured.

So, I had experience with [platform A] and [platform B] and there were both good experiences. The nice thing about [platform A] is that the creative control is strongly left with the professor and that you can, you know, do whatever you want which I think is actually kind of fun. [Platform B] is really a completely different experience for the creator. They have very high production standards, each lesson that you create has to be scripted and at least 200 people sometimes create reviews and comment on each lesson design. So the quality of the lessons I did on [platform B] was much higher than the one I did with [platform A].
Frank divulged specifically that some subject areas work well with MOOCs while others do not. In his experience, MOOC rules and peer reviewed assignments were unworkable for faculty and students.

They have all kinds of rules about how things work and how things are supposed to work and I found some of them very useful and I found some of them are nightmares. Their rules work in computer science where you’re coding. It works in mathematics where problem solving is well-defined. I found that in humanities courses it is almost impossible. The second and third times I used the course I did not use the platform provided homework. I would have loved to have done it but it doesn’t work for students, it doesn’t work for me and it was one of the worst experiences I had in terms of trying to grade something when the information I had was not valid or reliable.

Among the cMOOC faculty members open-source platforms such as Moodle were the preferred platform and unlike those who worked with proprietary platforms, cMOOC faculty reported positive experiences interfacing with and posting to the open source platforms. Sue Ellen expressed her preference for open source platforms,

Because proprietary systems are closed, you are kind of locked into what tools and functionalities they are offering. Open platforms are much friendlier to additions and re-coding and the open source community of developers are constantly adding features and functionality so you are not stuck in this proprietary system.

Roman had the most unique response to this question asserting he never had any intention of working with a third party of any kind but preferred to make the system
specific to the student which was, in his words “antithetical to a system.” The perspective Roman had was that each student was given the power to choose which delivery and syndication method to use to participate in the MOOC.

I think, for us, we never had any intention of working with a vendor or delivery mechanism because part of our idea was to actually make the system specific to the student. So the idea was actually, in many ways, antithetical to a system. The only thing that scales for us is the individual and so therefore, you give the individual the tools to build their own infrastructure and you just link those infrastructures through syndication. So we actually bypassed the idea of a system altogether and we enabled students to get domains and web hosting, build their own space and found a means and a mechanism by which we linked it all together.

The majority of xMOOC faculty had positive experiences with their proprietary platforms they reported having little choice in which platform was to be used. Susan was disappointed with the lack of flexibility of the platform she had to use stating she did not have a choice in which platform to use.

The biggest problem with [platform] is that it simply could not do what we needed it to do ultimately. It wasn’t set up to do peer review in the way they thought it might be able to do. We just did not have the control we needed. The thing that has to be true is that the platform has to support the pedagogy. In this case the platform constrained the pedagogy and that is simply unacceptable. Sid felt that the platform was immaterial.
Yeah, I mean, [platform] has been pretty easy to work with, it hasn’t necessarily improved or hindered my role. It is an ongoing process but I pretty much came up with the pedagogical ideas of how I was going to design, develop, and deliver. I mean, they review it and stuff like that but they haven’t hindered…I mean, I’ve learned things from looking at other MOOCs and things from doing it but [platform’s] been a pretty easy third party MOOC platform to work with.

The choice of platform was largely an Executive decision at higher ranks of the institutional administration and the faculty worked diligently with the platform and the army of specialists devoted to designing, developing, and delivering quality MOOCs at their institutions for the benefit of learning participants and potential students.

The singular theme that emerge from the data on this question was that regardless of the pleasantness or unpleasantness of the platform experience, faculty all realize that platforms of all types have unlimited potential to revolutionize the delivery of online and blended instruction in higher education. Sue Ellen pointed out that each new piece of technology requires a learning curve to full adoption.

With every piece of technology, with every new platform, I’d say there’s always a learning curve. Even if you’re a tech wiz, even if you’re a faculty member and you’re always up on your training and your workshops and you know, you’re very comfortable with technologies whether it’s the LMS, the LCM’s, there’s lots of free and open platforms out there. The faculty member, the professor, instructor, still has to learn that
technology, work with it. There’s time and effort that has to be dedicated to that as well, above planning and designing your course content.

Additionally, the choice of platform can be an improvement for some or an impediment to others and to the teaching and learning experience but faculty have learned that some subjects do not work well with MOOC platforms simply because the subjects themselves do not conform to independent student work. Among the possibilities faculty see the ability of the various and growing number of platforms to keep students on track with their daily and weekly assignments. Sid preferred the features where “the platform sends course information and reminders to the participants to keep them on track.” Other faculty members note the growing number of capabilities platforms are continuing to develop. With each successive new MOOC more is being learned about what is needed in the way of tools and capabilities to enhance both the teaching and the learning experiences in MOOCs. Besides the time and effort needed to learn to use each platform, there is additional time and effort needed for faculty to learn how to use the newly developed tools and capabilities to enhance their courses.

This question was developed with xMOOC faculty in mind and was a little more difficult for cMOOC faculty to answer because of the independent nature of connectivist learning. The very first cMOOCs were more about students creating their own online presence and collaborating with other learners to find, develop, and post their own learning content both for their own learning and to teach others. This was reflected in the comments of Roman noted above. This was in keeping with connectivist ideals to make
the system specific to the student. This faculty member stated that the goal was to give
the learner the tools to build their own learning infrastructure and to link various
infrastructures through syndication. Sue Ellen noted lately the more organized use of
open source platforms, particularly Moodle to give more structure to connectivist ideas of
instruction and to give “students who needed the structure a place to go online to receive
learning materials and instruction and to post assignments.”

Question 5: Describe how designing, developing, and delivering a MOOC is different
from designing, developing, and delivering an on-campus course or a traditional online
course.

When asked this question, it was discovered that xMOOC faculty had little to no
experience developing or teaching online courses prior to their MOOC experiences. Both
Lilly and Sue Ellen had taught and developed numerous online courses prior to the rise of
MOOCs. Lilly compared xMOOCs to traditional online courses noting that there was no
difference between the two except in the matter of scale, the xMOOC being an online
course offered to a “massive” audience. Sue Ellen made a similar comparison but added
that in either case faculty needed latitude and support from administrators regardless of
any differences. Susan noted that top-tier universities heavily involved in MOOCs were
not known for online education prior to the MOOC phenomenon and that online
education was not what they were known for in the first place. Additionally, Susan
admitted that no one was reaching out to distance educators and experts in the field of
online education to get their input. Additionally, when comparing MOOCs to the traditional classroom experience, Susan noted that she had never taught online prior to her MOOC experience and shared her perspective on the differences she observed.

When you’re doing a MOOC there are a lot of other people who have to be involved in what you’re doing. Everything has to be scripted, everything has to be planned in a way that is far less flexible. If something gets off track, if you need to change something, it’s not just a matter of standing in front of a group of people in a classroom and someone introduces something that was highly unexpected, I can address that in the moment. [In the MOOC] I have to go back and shoot more video or I have to go into the discussion boards…it’s much more administrative in a way than it can be in the classroom.

Much of the discussion around this question centered on the video production value and length; how the typical lecture had to be broken up into 10 minute video modules. This was a much different way to teach for experienced classroom teachers such as Frank. The time commitment to their recording, the thought that had to go into those ten-minute sections and how corrections were handled were a major topic among Peter, Frank, and Sid. Peter revealed that “Creating MOOCs can be a lonely experience making faculty more like a newscaster than a teacher.” Frank even stated “MOOC faculty have to learn new skills of broadcast communications.”

Second to the video production value and length was the rigidity of the process of design, development, and delivery as well as the fact that they were still involved in one-
way communication from experts. Susan said “MOOCs are basically a one-way communication from experts.”

So, if you’re a discussion based person, not a lecture based teacher then you already have a problem because essentially all MOOCs are delivered in a kind of “sage on the stage” platform. Even the ones who like to pretend they’re doing it discussion wise because maybe they’re sitting around a table with a group of people and those people are having a discussion…it’s still basically a one-way conversation.

For xMOOC faculty at a research institution the big differences were the amount of time it took to get their MOOCs from concept to live on the platform was much more excessive and their contact with students was much more limited. Even though there were tens of thousands of participants logging into and commenting and collaborating on the online forums, the professors themselves were separated by great distances and only had the ability to interact with a small portion of the participants. Peter offered “MOOCs create greater distance between faculty and participants and require greater attention to be paid to creating assignments appropriate for thousands of participants.”

Additionally, the professors were struck with the world-wide reach and the implications of mistakes made in front of a global audience. While MOOC successes were celebrated accomplishments, the potential for disastrous MOOC failure was as likely. Faculty noted technological glitches that caused course segments to have to be re-recorded, server crashes, and other technical failures as well as cultural faux pas that were unanticipated and had reputational consequences for faculty and institutions. Susan noted
that “If things go wrong, changes are more difficult to make.” Besides noting that his courses were found by students and faculty all over the world, Sid admitted that having pre-recorded many classes, “MOOCs allow faculty to flip and blend their on campus courses using class time for more advanced activities.”

Yeah, I deliver this exact same material that I do if I were doing it on campus in a lecture mode style. The only thing that’s different is that instead of doing a 50 minute class or an hour class, I break that into chunks of 5 to 10 minute modules so little subjects build on each other. So the biggest time consumption is to get the material together, break it into chunks and put it together and the MOOCs are available. I personally no longer use lecture in the classroom. I have my students do these modules in preparation for the class and then we do more advanced, active learning in the classroom.

Connectivist MOOC faculty with much more online teaching experience also noted the lack of difference between online courses and the more structured of the MOOCs; it is basically still one-way communication from experts to learners. The use of videos for instruction is nothing particularly new. Scale is the one factor that accounts for the greatest difference between on campus instruction, traditional online instruction, and MOOCs. Faculty of every background and experience were all aware of the massiveness of scale that MOOCs have brought to the forefront. Lilly expressed, “The global reach becomes an enriching experience when access is open and free.”

So, it is an enriching of the learning to have these extra people so the difference is scale. It’s also, for me, looking at the cMOOCs, the way you make people work. In my
own courses it’s like a traditional classroom they have to read something and they have to talk about it and the instructor talks about it and they have to do an assignment. In cMOOCs it’s more open, it’s more self-directed, I would say that general online courses are already more self-directed than face-to-face classes which I have also worked with but in cMOOCs there’s an extra layer of resources and of networking and of using technology on top of that.

Being detached from the learners and having so many of them is something that faculty have a difficult time dealing with. Extended MOOC developers get around this hurdle by the use of teaching assistants who manage some of the course forums and bring certain questions to the faculty member to address. Otherwise, many of the issues and questions not handled by teaching assistants were dealt with by peers or by peer led communities that developed based on shared interests or geography or some other external necessity.

*Question 6: What aspects of designing, developing, and delivering a MOOC challenge you as a professor? What are the opportunities and benefits?*

Here, faculty members were quick to cite challenges. Their experience designing, developing, and delivering MOOCs made them quickly realize the barriers posed by MOOCs even though they came about as a proposed solution to the problem of increasing access to education while reducing the cost of higher education. In addressing challenges many faculty members agreed that the requirements on faculty time and
managing student expectation in MOOCs were definitely a major hurdle. Faculty designing, developing, and delivering MOOCs are broadcasting their content to a worldwide audience yet they are constrained by being a single human being who could not possibly be available to answer the questions of tens of thousands of students, they could not possibly grade the work of tens of thousands of students in a single course, and they struggle with developing assignments that are appropriate for tens of thousands of participants of diverse knowledge and backgrounds. Frank was struck by the way “MOOCs challenge the traditional methods of design, development, and delivery because they do not allow student interaction during the lecture.” He added,

It is a very different way of preparing information for students in terms of lecture. You have 20 thousand students so the interaction that they did with the material can’t be done in the classroom, it had to be done in the interactive textbook I used. There is a forum, they can ask questions on the forum. I had a TA and all that TA did was monitor the forum. We discovered that if you wait 24 hours before you get on the forum, 90% of the questions asked or discussion points raised are addressed by other students. You only have a few that you actually have to deal with and the TA would deal with most of those and then he would send me the questions he thought I had to deal with and then there were no more than 10 questions a week [for me to deal with] when there are literally thousands of questions or points made on the forum itself when you have that many students.
Susan was impressed by the way students came together organically around the material being studied.

The way students work together and create these independent support groups; I’ve never seen anything like this in a classroom situation. Some of that is what, I think, you get from the great numbers. We had almost twenty-two thousand students in our course. When you have that many people you are going to have some small sections of them who bond together. I think that happens in the regular classroom, it’s just that when you scale that down you’re talking about maybe two students getting together. It feels so much more like a thing when you’ve got a group of 50 or 60 students in a MOOC who get together. It feels more meaningful. But nevertheless, I loved the kind of community spirit that came out of that.

Lilly mentioned that MOOCs cause faculty to have to be on their toes because of the volume of information and questions coming from participants. As I said before, my main challenge is how to get a deep level of learning and that’s for the students and I think that’s for me. I always think that the professor has the most opportunities to learn because they have to process everything that the students come out with, so you have to be on your toes all the time and with MOOCs that’s even more because even more will be thrown at you. People at all sorts of levels will throw stuff at you that you have to respond to and engage with so I suppose it is the scale of it that’s the main challenge with it.
As noted above, faculty often teach for altruistic reasons and along with that altruism comes the burden of wanting to make a difference in a student’s life which may still happen in MOOCs with those the professor can engage with but it is virtually impossible for one professor to engage with tens of thousands of participants in MOOCs. Sid admitted that “Altruism is the motivating reason to get into the design, development, and delivery of MOOCs.” Therefore, those faculty members who have participated in MOOCs agree the scale of MOOCs to be the greatest challenge. Sid was excited and happy to know that his video content was being found and used by other professionals in the field, “Professors worldwide find the MOOCs and use them. Faculty find it complimentary when students and teachers in other countries find and use their courses.”

The MOOC experience also opened positive avenues of discovery for higher educators. Among the benefits MOOCs offer numerous benefits were described by those who have participated in the design, development, and delivery of MOOCs. The public relations benefit was mentioned by Frank along with the MOOCs ability to be “used by top tier universities to screen the best and brightest students in the world.” The MOOC allows institutions to extend their reach beyond their geographical location. Because of the MOOC platform and the affordances of the internet a single institution in the Southeastern United States can offer its faculty and expertise to far-flung corners of the globe where educational opportunities are few. Connectivist developers also note this value. Lilly professed, “MOOCs are best in areas of the world that lack access to higher education.”
Multiple faculty members experienced the development of student communities around their material and cited this as a tremendous benefit of MOOCs of all varieties. Susan and Roman shared the view that getting a group of people excited about the subject matter and get them working together and thinking together as a community was a benefit of MOOCs. The spontaneous development of peer led communities got professors excited about the possibilities MOOCs hold for the future of higher education as well as for their own subject areas. Susan noted, “It was encouraging to witness people coming together around topics and issue of inquiry to answer questions, spread knowledge, and solve big problems.” Roman was also excited by this issue and noted that MOOCs have the potential to “Build a culture of positivity by highlighting other people’s good work and collaborating.” Roman formulated his answer to the above question in the form of a series of questions.

I think the challenge for me is, how do you create a community around a course? I don’t care if that’s an online course or a face to face course, how do you understand a course? Is it a group of people who come together for a specific period of time? How do you make that congeal and cohere as a community of people who want to work together and push with each other and trust each other? For me that was the challenge. I think one of the ways was to build a culture of positivity, right? To actually highlight the good work, to push people to do more, to try harder and to push and have them collaborate and highlight and honor each other’s work.
Question 7: What insight(s) have you gained from designing, developing, and delivering MOOCs that will guide your teaching practice in the future?

The themes that emerged from this question were focused on learning outcomes and the changes faculty members would make in future classes and MOOCs. There was a consistent recognition of active learning from the experience designing, developing, and delivering MOOCs. Peter pointed to the value of active learning.

I think the biggest insight that I’ve learned is the value of active learning. Essentially, rather than just say, continuous video lecture, you need to have some engagement of the students, you know, multiple times during a lesson. On one platform we used quizzes sprinkled throughout the video lessons. I now do this in my on campus courses and it is a big difference in terms of getting students to think about a problem before giving them the answer. It sinks in much more effectively that way.

Sid pointed out that since a great number of instructional videos existed for the MOOC, even his on campus classes could be enhanced by flipping and blending the classroom.

I have always been a believer in active and engaged learning and it has made it easier to, now that I have the material so that I can do more advanced stuff in class and not just have to lecture in front of students because lecture is not that effective for learning. MOOCs allow me to do active, engaged learning much better. I don’t have to stand up and lecture and lose a lot of time in class so we can actually do and be engaged and the students have the resources. In fact, if they have problems, even in the
classroom, they can pull up my module and see how certain things are done so it has really been good and interactive.

To add clarity, students could listen to online lectures outside of class and then engage with each other during the class period taking advantage of the time together. Lilly found MOOCs useful as a research tool into what motivates people to become self-directed learners.

[MOOCs] have given me a bigger interest in self-directed learning and what motivates people to learn and what should be in a learning environment to inspire people and engage people to get to a deeper level of learning. I take that interest into my own classrooms and I try to engage with that. You know, teaching in any environment, if you want to do it well...at the heart of this is the connection that you’ve got with the student. It is a personal connection that makes you both get something out of it. If you don’t do that, well, to me, if you only give someone a book or a website it is meaningless. Where people really learn is where you manage to really get them engaged with the resources rather than to just give them resources.

As for changes to their teaching one professor noted that MOOCs and the ability to be a part of designing, developing, and delivering MOOCs increased the longevity of the teaching practice for this one individual. Frank commented that, “MOOCs allow instructors to stay in teaching after retirement, offering an interesting project to be involved in.” Roman realized that teaching as part of a collaborative team was a superior experience to teaching as a singular individual.
I will never teach a class solo again. I will always, given the option, teach with someone else, include other people. I have not taught alone since [MOOC]. The idea of teaching and being part of a team is the greatest part of [MOOC]. Teaching is fun anyway, I love doing it, but teaching with other people and sharing and building a community, it makes it even more awesome.

The MOOC offered a far richer teaching experience for this individual because of the interaction between colleagues in each phase of design, development, and delivery of MOOCs. One concern offered by Susan is that MOOCs might have the potential to narrow the curriculum, where elite intuitions are deciding what everyone else in the world needs to know.

I am proudest of having written, from an academic standpoint, about essentially a new kind of colonialism that’s happening. One of the problems with MOOCs is that we’ve said that a set group of people at a set group of very elite institutions should decide what everybody else in the world needs to know.

In answering another question Lilly addressed a similar concern that MOOCs at elite schools may eventually render smaller institutions that value teaching rather than research as irrelevant. All in all faculty members who have experienced teaching on a massive scale have individual opinions and reasons for participating in the MOOC phenomenon but one thing that emerges from the data is that there is still a fair amount of curiosity about where MOOCs ultimately lead professors, students, and institutions.
Question 8: How many full-time employees does it take to design, develop, and deliver a MOOC and what training and resources do faculty need to design, develop, and deliver MOOCs well?

This question shifted the faculty member’s attention to the structural realities faced in the design, development, and delivery of MOOCs. Because these faculty members taught in different departments and different institutions there was very little similarity in the answers they gave. Only one professor from a research institution was extremely clear about how many employees were necessary to produce the MOOCs in a single academic department. Peter knew definitively that one MOOC requires at least 150 hours of faculty time and significant portions of time from many other experts.

Designing, developing, and delivering a MOOC takes one professor about 150 hours of their time. In addition, I had three other full-time people to help create the course. A course developer who acted as the producer and a video editor, I also had teaching assistants…so, a total of four people working full-time for three months.

When it came to grading assignments and sampling questions from the student forums Peter added that it “requires the use of teaching assistants 5-10 hours per week for 16 weeks.”

Every other participant had a different and only vague idea of how to answer the question. Sid answered that he was not certain of personnel needs primarily because he was more focused on content development and not so focused on the behind the scenes production. Some faculty members were designing, developing, and delivering MOOCs
of an experimental nature in an educational organization not connected with a particular institution of higher education while others were designing, developing, and delivering MOOCs to be broadcast over a proprietary platform. Roman was an experimenter in the early phases of the MOOC phenomenon and revealed that the MOOC he took part in was done with minimal inputs of capital.

So, my full-time job was directing the instructional technology group. The MOOC was something I did in addition to my job. No one who built [MOOC] or taught it with me did it as part of their job. There was no full-time position. We did it really cheap. It cost us next to nothing because we basically did it for the price of hosting. Our idea was to do things very, very cheap, as close to free as possible as we could without stealing from people. We really pushed hard on avoiding costs.

Lilly said, very little is needed other than inspiration and also stated that she could produce a basic course with a Moodle instance and an RSS feed.

I think it takes very little. It takes inspiration, right? Because that is at the heart of this whole thing. You have to understand what it takes for people to learn so you can transfer the learning, not transfer the knowledge, but transfer the learning, to get people to get it basically. Of course, if you want to engage 10,000 people then you need a different environment than if you engage five to ten or 100 people. So, the environment has to be scalable. I think you have to have a web designer who knows how Moodle works and it would be enough.
Faculty engaged in designing, developing, and delivering MOOCs have had a broad range of experiences with how much it took from an employee perspective to participate in the MOOC phenomenon.

One similar thing that several professors talked about across the spectrum of experience was that rather than having a specific number of employees working on specified tasks, high quality MOOCs required small bits of time and effort from a broad array of technical specialists from videographers, editors, IT professionals, professors, and instructional designers. One professor observed that these technical professionals were working on multiple MOOCS in multiple subject fields and were more expensive to employ than the average professor. Susan noted that,

A lot of people thought this was about cost savings this is not about cost savings it is about cost shifting. The average professor makes less than the average videographer does. Some of these people have to be real technologists. They are going to get paid a lot more money because they are good at what they do. Good information technology people are more expensive than the average professor. It is really the behind the scenes stuff that nobody thought about, you’ve got Lawyers involved, you’ve got intellectual property involved. You’ve got to be thinking about all that. It is so multi-layered in ways that people can’t even begin to imagine. There are dozens and dozens of people who have to be involved some of them very little and some of them a lot.

Roman echoed the monetary concern that “The money changed the tone of what could have been a very interesting experimental period for educational technology and
turned it into a business.” Roman also stated specific numbers related to MOOCs and that it depends on the approach taken by institutions.

The other thing I had a problem with was once you start associating massive costs with MOOCs any idea of experimentation or any idea of innovation starts to quickly evaporate because of the costs involved. I’ve heard numbers involved with doing a class online that are stunning, anywhere from eighty thousand to 200 thousand to run a course based on people’s time and energy. For better or worse, [MOOC] ran off people’s passion and interest. That’s labor and I am not pretending that that’s free but it’s a very different thing when people willingly do something because they want to be part of a community.

Another unifying fact that emerged from the data is the excessive amount of time faculty must devote to designing and developing MOOCs before they can ever be delivered. Frank said, “MOOCs require great time and effort from faculty developers” and “Many people are involved in the production of one MOOC.” Professors underscored how much of their off time they put into creating content and recording lectures. Sid referred to it as being “a labor of love and having to commit to the process from beginning to end.” Sue Ellen mentioned that rather than specific numbers of personnel MOOCs required leaders with first-hand experience, good examples of walking the walk and talking the talk of MOOCs and innovation.

So, if you have examples, if you have people who are actually walking the walk and talking the talk that will help with the level of commitment, in the level of support
that is already in place. If you’re a pioneer and no one has done it before you, it’s going
to be a tough and rocky road ahead of you. If you have leadership, if you have the
support of your faculty, that’s a great thing, then you’ll have the tech support, the
administrators sending out emails, you’ll have courses scheduled, people helping you
with that, training will be in place.

Faculty were also asked about the kinds of training they felt was needed to do this
well. Proprietary platforms require specific training and offer ongoing training for those
interested in the design, development, and delivery of MOOCs. Peter attended an
immersion training because of the specificity of proprietary software used by platform
providers. For others who have been involved since the early days of the MOOC
phenomenon, they have learned “by doing and making many mistakes along the way,”
according to Sue Ellen. Consistently, across the spectrum of xMOOCs to cMOOCs
faculty experience designing, developing, and delivering MOOCs requires the support of
technical specialist but also of executive administrators. In short, faculty need time to
learn to use whatever platform they choose or is chosen for them in order to deliver high
quality MOOCs.

*Question 9: In the future, what should institutional leadership provide for those who
design, develop, and deliver MOOCs?*

The purpose of this research was to provide institutional leaders with qualitative
research that gives a voice to the faculty who are on the front lines of designing,
developing, and delivering Massive Open Online Courses. The MOOC phenomenon is so new and so hyped that decisions to engage in the design, development, and delivery of MOOCs have been made quickly in many cases (Lombardi, 2014). Administrative leaders need to hear what it takes in terms of institutional resources to put on a successful program of MOOCs.

When faculty were asked to comment on what their administrative leaders who wished to engaged in MOOCs should provide them with, the answers were they gave were consistent and clear. Faculty on the front lines designing, developing, and delivering MOOCs understand the commitment of time it takes to produce a single MOOC and that time is not free. In some cases, faculty received extra pay to design, develop, and deliver MOOCs in addition to their regular teaching load. Some professors rightly express concern that designing, developing, and delivering MOOCs becomes an all-encompassing activity that takes away from their research activities toward tenure. This was a concern mentioned by Susan. Susan added that in addition to time and money, “Administrative leaders need to understand the need to protect faculty legally, physically, and professionally.”

You are asking faculty to be highly public in a way that they are not. A lot of people regard this as a knee-jerk reaction because professors teach in public universities. While that’s true, the tens of thousands of students have not been vetted in the same way on-campus students have been. We know who they are when they come and sit in our classrooms. If you are teaching a MOOC people can sign up for your MOOC and they
don’t even have to tell you who they are. They can pretend to be someone else [to conceal their identity]. Institutional leaders have to understand and be responsible for that.

Faculty consistently responded that what administrators who want to join the MOOC movement need to provide for faculty come in the form of time and money. Peter recommended that designing, developing, and delivering MOOCs should be counted as part of faculty teaching load.

The biggest change I advocate is that creating and teaching MOOCs should count as part of an instructor’s teaching load. So, right now, at [institution], there is a certain expectation of how many courses I teach per year and if I want to do a MOOC I can but it doesn’t count towards that teaching load. Providing additional pay is good but I think it would be better if it could be counted as my normal professor duties. This is an issue that I do not think will be resolved for a while.

There are a fair number of teaching administrators who have been involved in the design, development, and delivery of MOOCs. This research represents the responses of at least three such individuals. This insight provides non-teaching administrators considering MOOC projects a consistent voice for those on the front lines of these projects what has to be sacrificed in terms of work/life balance to produce quality MOOCs. Sid pointed out a number of intangible benefits institutions gain from producing MOOCs but stated there are currently no monetary benefits to doing MOOCs. He said, “There has to be some incentive or some desire by faculty members to do it.”
Professors and teaching administrators reporting agree that there is not yet a consistent way across institutions of remunerating the time and pay for those who design, develop, and deliver MOOCs. Peter suggested “MOOC faculty generally get extra pay for designing, developing, and delivering MOOCs.” The theme that emerged from the data is that Executive leaders who want to join the MOOC experiment need to find a fair way to give faculty the necessary time to design, develop, and deliver MOOCs and to pay them accordingly for the time it takes to do them well. One professor working with a third party platform estimated the faculty time to design, develop, and deliver a single MOOC to be around 150 hours because of the thought that is required to condense the material and corroborate the accuracy of the information to make it suitable for a global audience. Professors have suggested that designing, developing, and delivering MOOCs should be counted as part of the teaching load. Even in top tier research universities, this has not been the norm. Sid, as a teaching administrator, proposed offering incentives to faculty to participate. This is also a professor who has cultivated an impressive body of MOOCs.

Among the other varied suggestions faculty have for administrative leaders for what faculty need to be provided to do MOOCs well, Frank suggested “a vision for the future.” This professor echoed the comments of others who realize that MOOCs may or may not be the future of higher education but that they represent a new first step in the major changes that are occurring in the marketplace of higher education. There is still a great need for learning opportunities throughout the world. Access and affordability are
major higher education issues that MOOCs were attempting to address but in many cases, faculty have begun to realize that MOOCs are expensive and time consuming to produce and will not meet the needs of the future in their current form. Faculty consistently point to profit motives as a concern. At least one case recommends MOOCs as grass roots efforts that actually circumvent contracts and leadership control. Roman offered that “The less leadership has to do with it the better.” To be clear, this was not a suggested subversion as much as a recommendation to leaders to give faculty the freedom they need to explore the affordances and topography of the internet in order to educate a greater number of people. In other words, administrative leaders need to empower faculty to innovate when it comes to the future of pedagogy. Sue Ellen believes that providing good examples of MOOCs done well and knowing the market; what the needs and want are in order to provide it rolled up under this consistent theme.

Good examples of what people have done before them, hopefully on their faculty. If not, other faculties, watch what’s going on…we’re on a world stage now, it’s not just your institution, there is a movement out there of what’s going on in the world because MOOCs open up the opportunity for students. So the world is watching.

Question 10: What do institutional leaders considering MOOC initiatives need to know about the design, development, and delivery of MOOCs?

In order to give institutional leaders the qualitative information they need to make informed decisions on the design, development, and delivery of MOOCs faculty were
given the opportunity to weigh in on what these leaders should know before initiating MOOC projects at their institutions. The one thing that emerged from this question was the significant investment of resources MOOCs require. In terms of dollars faculty relate that the costs to produce one high quality MOOC requires hundreds of thousands of dollars. Peter revealed that a single, high-quality MOOC requires inputs of up to $100,000.00 to design, develop, and deliver.

I think the key thing leaders need to know is that creating high quality courses takes a lot more resources than they probably think. As I mentioned before, it takes at least four full-time people for three months so essentially it’s at least one hundred thousand dollars to produce a high quality course and I don’t think most administrators have that number in mind. So there’s definitely a fixed cost of the course but then it scales nicely. But I don’t think they usually anticipate the high initial cost.

Administrators considering new MOOCs do not usually have these costs in mind.” This is the testimony of people who are in the trenches developing the content, recording the video modules, producing assignments, collaborating with technical specialists, and seeing the enormity of the infrastructure required to produce one course that goes live and may or may not be used again.

The concerns faculty members have that roll up into this theme are the things that actually vary from professor to professor. Susan expressed the concern that “Just as MOOCs have great potential to build an institutional image, they also have great potential to destroy an institutions image with bad publicity when things do not go well; unwanted
things have to potential to go viral.” Professors have stated concerns about whether the return on investment is going to materialize any time soon. If MOOCs deliver on their promises to increase accessibility and improve affordability there is a concern that the curriculum could narrow and that elite institutions could leverage the power to close lower institutions and thereby create the loss of institutions who value quality teaching as opposed to those that value image, career mobility, and profitable research. Lilly stated that MOOC success could mean “Fewer institutions, loss of lower institutions who are more concerned with quality teaching than image, career mobility, and research.” Sue Ellen cautioned that “student expectations and student demands are only growing and institutions have to get behind the faculty who are innovating and protect them by whatever means possible and stay ahead of the curve of demands and expectations.”

Summary

In order to inform administrative leaders considering the design, development, and delivery of MOOCs, the researcher developed a qualitative, phenomenological study of the lived experiences of faculty who have designed, developed, and delivered MOOCs. A ten question personal interview was developed and piloted by faculty in a small, private institution by two faculty members who have also experimented in the design, development, and delivery of MOOCs. Twenty-three invitations went out to various MOOC innovators and seven agreed to interview and signed informed consent forms in agreement. Telephone interviews were conducted in six cases and in one case a WebEx
interview was conducted for a faculty member who was teaching abroad and unavailable by cellular phone. The researcher recorded all interviews with a smartphone application known as NoNotes available for download. The web and mobile service offers transcription services as well and can be accessed by the app or online at nonotes.com.

From the seven faculty members whose interviews were used in the study the essence of their experience can be described as altruistic. Teachers love to teach. Professors take the work of conveying knowledge very seriously. One faculty member interviewed had a studio set up at home to record video modules as if it were not just a vocation but an avocation. Another faculty member has produced at least six MOOCs as of late, requiring thousands of hours of preparation in addition to the development and delivery phases of these projects. Even those who still see little benefit or return on investment after their MOOC experience see the value of pedagogical experimentation. Those professors who were actually in on the initial MOOC experience and are largely responsible for coining the term remain committed to ideals of open educational resources and personal learning environments even in the face of the MOOC hype. Professors in the monolithic elite institutions realize the higher education cannot continue on the same unsustainable path with the ancient forms of pedagogy.

While the ability to scale courses from tens of students to hundreds of thousands of participants, scale has been the greatest challenge to professors of all stripes. Professors with online teaching experience have the same challenges as professors of traditional on campus programs in that they cannot personally reach students as a single
professor broadcasting to hundreds of thousands. Assignments that are appropriate for hundreds of thousands of participants are challenging to produce and grade. Systems are developing to meet this challenge but professors note that the technology still is not there to support this kind of learning experience in order to deliver true educational value and rigor to the learner. While the design, development, and delivery of MOOCs continues apace, the media hype has subsided a bit because politicians and pundits alike are seeing the cost figures come in and they too are realizing that third party platforms are delivering courses at scale but they are not yet inexpensive and they have not yet achieved the goal of profitability in most cases.

MOOC faculty continue the process of design, development, and delivery committed to the cause of opening up access to high quality higher education and to making higher education affordable for learners around the globe. Professors develop the content and learn new ways of delivering their content for the benefit of learners. Teachers teach because there is still a hunger to learn and discover and the need for high quality, openly accessible, and affordable education is only growing. Unsure of the future, faculty all over the world soldier on applying their essential craft by any means available and necessary.
CHAPTER 5

Summary of the Study

The movement toward experimenting with Massive Open Online Courses began nearly a decade ago with proponents of open educational resources developing ways to increase access to educational opportunities (Baturay, 2015; Canole, 2013; Daniel, 2012; Iniesto, McAndrew, Minocha, and Coughlin, 2016). In 2008 the very first MOOC, Connectivism and Connective Knowledge (CCK 08) began as a connectivist or cMOOC to build interest in a new form of pedagogy that took advantage of the affordances of the internet and computing technology to connect learners in connected learning communities free or mostly free of charge (Ferguson, Coughlin, & Herodotou, 2016; Kop, 2011; Kop, Fournier, & Mak, 2011; Weller, Siemens, & Cormier, 2012). Connectivist MOOCs continued to develop at a gradual pace until 2011 with the Stanford Artificial Intelligence course that garnered so much media attention with its six figure enrollments once the professor opened it to the world (Auletta, 2012; Pappano, 2012). Since that time a whole new educational marketplace has opened and top tier universities around the world have contracted with third party proprietary technology platforms to offer instruction to the masses online (Allen & Seaman, 2014; Daniel, 2012).
According to Hollands and Tirthali (2014), at the time of their writing there was scant research evidence as to the effectiveness of MOOCs yet numerous institutions were signing on to be a part of the MOOC phenomenon. Among the many reasons for joining this unproven sphere of pedagogy was fear of being left out or left behind by the technological breakthroughs in learning that might occur (Cusumano, 2014; Ulrich & Nedelcu, 2015). Ulrich & Nedelcu (2015) reported the FOMO (fear of missing out) syndrome as a motivating factor of faculty participation in the design, development, and delivery of MOOCs in European Universities. Research participants noted this repeatedly in their responses to questions of how their university got involved and who the decision makers were in their respective institutions. The research landscape has begun to change as more and more MOOC research is added to the body of current literature (Gasevich et al., 2014; Reich, 2015). Google scholar alerts for MOOCs as a key term often yield multiple new results weekly.

MOOCs have entered the educational sphere during a time when States are searching for places to trim budgets, when the public at large is questioning the return on investment of an academic degree, and when the student loan program is said to be in an economic bubble ready to burst (Arum & Roksa, 2011; Bowen, 2012; Bras & DeMillo, 2017; Dellarocas & VanAlstyne, 2013). Research into MOOC pedagogy has been ongoing since the beginning of the MOOC phenomenon and is continuing apace (Kop, Fournier, & Mak, 2011). One area of research that is still ripe in this burgeoning field is that of faculty perceptions (Cabrera & Fernandez-Ferrer, 2017). This study has sought to
inquire of faculty members engaged in designing, developing, and delivering MOOCs as to their lived experiences with this new phenomenon. A ten question interview was developed and piloted to ascertain faculty lived experiences designing, developing, and delivering MOOCs both cMOOCs and xMOOCs.

Summary of Major Findings

The questionnaire developed for this research yielded interesting findings from the perspective of faculty that has the potential to inform academic leadership considering MOOC initiatives. The first question asked professors to give a summary of their lived experiences designing, developing, and delivering MOOCs. As might be expected, because of differences in subject matter taught and size of the institution where employed, there was a diversity of responses. For some in larger institutions partnering with third-party platforms the experience involved numerous support professionals such as videographers, editors, and sound engineers as well as a host of teaching assistants. For those in smaller institutions where the financial resources were more constrained, the cMOOC route proved a more feasible pursuit utilizing free and open-source tools such as open-source Learning Management Systems and widely available open-source software solutions. There were three important common threads that connected each of these individuals from different subject areas from the first question of giving an overview of MOOC experience.
The first common thread was that a number of respondents expressed some form of personal pride and sense of accomplishment gained from being a sort of Pioneer with MOOCs at their respective institutions. Peter mentioned being the first at his institution to take on the task, pursuing the opportunity to do MOOCs prior to his institution’s MOOC initiative. Sue Ellen was proud to have been part of a team that actually coined the term MOOC. Sid was encouraged to engage in the design, development, and delivery of MOOCs by colleagues while Frank saw MOOC experimentation as a way to extend his teaching practice while learning something new even though it was a difficult transition to make from many years of traditional teaching. Roman and Lilly were enamored of the possibilities for open learning that this new technology offered higher education and appreciated the opportunity it brought to experiment with creativity as well. So, all in all, professorial experience was described as sharing a Pioneering spirit.

Where things were differentiated were with the M and the O of MOOCs as well as a clear distinction between the experiences of those in xMOOCs and those who worked primarily in cMOOCs. For professors working with third-party platforms the emphasis was on the massiveness of the experiment from a visibility standpoint and from a labor standpoint. This seems consistent with the work of other scholars in this emerging field (Allen & Seaman, 2014; Dennan & Chaulan, 2013; Dunagan, 2017; Ferguson, Scanlon, & Harris, 2016). The amount of overhead and work that was put into MOOCs at their institutions was a concern from the perspective of their stellar image. When things did not go well technologically, it was a huge embarrassment. The
professors found themselves preoccupied with making sure their lectures would stand up to worldwide scrutiny from other international academics because as a massive experience, the world is watching. Comments to that effect were given numerous times, “the world is watching.” Additionally, tenure-track professionals were concerned that working on the design, development, and delivery of MOOCs would interfere with their research productivity. All four professors from the Southeastern research university mentioned that design, development, and delivery of MOOCs also required the work of numerous ancillary professionals like videographers and technologists as well as being aided by, in some cases, numerous teaching assistants. Two of the professors were funded by grants from the Gates Foundation to experiment with Liberal Arts courses, yet still had numerous hours of preparation invested in addition to all the ancillary labor and technical expertise required.

For those professors at smaller institutions researching and developing cMOOCs the emphasis was on the Open nature of MOOCs. A number of these individuals were formerly involved in online learning and learning technology in ways that the xMOOC faculty were not (Bates, 2014; MacLeod, 2015). Roman, Sue Ellen, and Lilly were also fond of their early experiences with MOOCs before it was “cool” to MOOC so they were on the cutting edge, however, all three were fascinated with what could be and how professors were allowed the opportunity to create with greater flexibility. It was interesting to note that both Lilly and Sue Ellen were researching the very first MOOC as it was unfolding and yet have both noticed that participants themselves are causing
cMOOCs to develop along a more structured and accountable framework than originally structured. In other words, cMOOC participants are seeking venues that are more structured and accountable with the possibility of credit being given. Perhaps the structure of xMOOCs has developed an expectation in those who participate in cMOOCs, or in online education in general.

The second question sought out the key players in coming to the decision to offer MOOCs. Overall, the answers pointed to Executive level administrators, particularly at the Presidential and Provost Rank, as the key decision makers in this area. Another revealing finding is that, consistent with other scholars, this research suggests that the pressure on these high ranking academics is perceived to have been external to the institution (Archibald & Feldman, 2012; Ulrich & Nedelcu, 2015). Susan made the observation that MOOCs arrived on this “Perfect Storm” of media hype and politicians seeking budget cuts (Mirrlees & Alvi, 2014). Throughout the interviews and throughout the literature on MOOCs the idea of being left behind also created a kind of pressure to get involved in the MOOC revolution (Ulrich & Nedelcu, 2015). Auletta (2012) reported on the statement by an R-1 university president that a “Tsunami is coming” in reference to the advent of MOOCs.

On the cMOOC side of this discussion the decision to experiment with massive audiences was an intrinsic motivation to apply research and advance the cause of open education (Clara & Barbera, 2013; Kop, Fournier, & Mak, 2011; Siemens, Irvine, & Code, 2013). In speaking to the Pioneers of the original MOOCs one finds their opinions
of xMOOCs as a technology in search of a business model rather than using technology to reach more students and developing pedagogy that increases what an individual learns (Kop, 2011; Kop et al., 2011). Relative to this, xMOOC professors such as Frank see the MOOCs at high level institutions being used to create a greater reach for the institution and to bring to campus some of the brightest minds throughout the world. So, Frank in particular, discussed the recruiting potential MOOCs had which strengthens the point cMOOC professors were making by stating that xMOOCs are technology platforms searching for a way to monetize.

Question three was directed at the specific role each individual played in the design, development and delivery of MOOCs. The only finding of substance in this question was that regardless of whether a professor was a cMOOC facilitator or an xMOOC content expert, everyone interviewed saw themselves as playing a primary role in course design. Lilly and Sue Ellen saw themselves as researchers in CCK 08 and have since been instrumental in MOOC research. As content experts, xMOOC professors have not been as analytical of the search for a business model or the research end of MOOCs themselves although they do perceive the MOOC phenomenon to be a pedagogical experiment.

In question 4 professors were asked whether their experience with a technology platform (assuming they had experience with a platform) was helpful or if it was a hindrance of their teaching. Although cMOOC professors had not had experience with 3rd party platforms they saw the importance of having “a central hub of activity” as Lilly
called it, in order for participants to share their work and experiences in a forum. It is also important to note that cMOOC professors are more informed about the MOOC phenomenon than most, making their observations, thoughts, and experience germane to the discussion of xMOOCs and various third party platforms.

Those professors that used at least one or more of the proprietary platforms gaining popularity, saw the platform as providing a helpful structure for their courses as well as having an insistence on high production value video lecture segments. Professors also appreciated the updates and reminders to students of assignments. Respondents also like the marketing features that highlighted their courses to people around the world. However, their answers to this question were more heavily on the side of the platform experience being somewhat of a hindrance for various reasons. For instance, Peter, Frank, Susan, and Sid all commented on the fact that their video lectures took enormous time to develop in order to minimize their exposure to wide criticisms from others in their academic fields. At least two of the four perceived that the platform would not successfully translate their course material, in-class course structure such as group discussion, and the assignments they wanted completed into an online environment that was appropriate for a Massive audience of participants. Frank and Susan teach in subjects that typically rely on in-class discussions that could not happen with a Massive audience. They did notice small communities developing organically to have threaded discussions in the online forums which were monitored and sampled by Teaching Assistants.
In one case the experience with designing, developing, and delivering a MOOC in the humanities actually was found to have constrained the pedagogy rather than serving as an enhancement to the pedagogy. Both Frank and Susan, in separate interviews independently observed that certain subject fields with well-defined problem solving and discrete subject content structures such as mathematics and computer science work well in MOOCs while other courses that require substantial written assignments or verbal participation do not translate well into the MOOC environment.

Questions five and six sought differences between MOOCs and traditional online courses and the challenges and opportunities MOOCs provide. These two questions did not reveal enough rich data to merit long discussion. Interview participants saw little difference between xMOOCs and traditional online courses, which is consistent with much of the criticism leveled against MOOCs (Bates 2014; Weller, Siemens, & Cormier, 2012). Those who taught xMOOCs noted the difference between their classrooms and MOOCs being the short condensed lecture and high production quality video. Roman commented that 3rd party platform providers have succeeded only in creating a Learning Management System that scales. On the opportunity side of question six, the verdict still seems to be out in reference to where MOOCs will eventually lead the world of Higher Education (Bates, 2014; Daniel, 2012; DeWaard, 2011). Frank could see that University operations are on an unsustainable financial path and that changes are coming, but what exactly those changes were remains to be seen.
Question seven anticipated the kind of response that question one delivered; that professors would analyze and reflect upon their experience and how those experiences would be applied in the future. However, the professors’ answers were more succinct and straightforward than anticipated by the researcher. A few xMOOC professor’s realized the value of active learning by using their MOOC video lectures to flip and blend their on campus courses. The cMOOC faculty all had more diverse responses from this question. Roman decided that, as an educational technologist, he would only teach as part of a team going forward. Lilly was inspired to dig deeper into self-directed learning, whereas Sue Ellen observed that the technology is advancing and evolving at such a rate that instructors have difficulty keeping up with new developments.

Question eight switched gears to get respondents to comment on how their experiences can inform Executive level administrators considering MOOC initiatives. Participants were asked about the personnel resources required to design, develop, and deliver MOOCs. This was another question where the answers diverged between xMOOC and cMOOC faculty. Peter was the only professor who would estimate, in real numbers, what it took to design, develop, and deliver his MOOCs. He estimated that one professor would spend upwards of 150 hours producing 30 lessons for video while 2 full-time employees helped the professor with design and development of a single course. He also estimated that a professor would need to attend a 2-3 day immersive “bootcamp” with the Platform provider to receive training prior to going live with their course. In
addition, he estimated that numerous Teaching Assistants would be needed for monitoring the discussion forums 5-10 hours per week.

To Frank, the numbers were difficult to get to, observing that a host of technicians, editors, teaching assistants, and full-time faculty were needed at varying rates of time in addition to the expensive physical resources required in terms of studio and lighting and all the professionals needed at a percentage of time to produce the video segments. In addition to the physical and personnel resource needs, he knew that Teaching Assistants and learning specialists were enlisted to help multiple professors design, develop, and deliver their MOOCs. Susan noted that a dedicated course designer should work with a professor along with the necessary information technology professionals, videographers, and editors. Unlike some of the others she could see that because of issues like Intellectual Property, lawyers would need to be involved. Her observation, like that of Frank, concluded that small percentages of work time of numerous people were required to design, develop, and deliver MOOCs well.

On the cMOOC side, practitioners have often come to MOOCs with critical literacies in Information Technology in order to do a number of technical things for themselves such as creating algorithms, building websites, and back end programming of open source Learning Management Systems (Kop, Fournier, & Mak, 2011). Those on the cMOOC side of the phenomenon see inexpensive options and open-source applications as the way to advance the cause of Open Educational Resources and educational technology (DeWaard, 2012). Roman noted that in his experiences
participants in the MOOC he helped to facilitate were able to get people involved for little more than the cost of web hosting. The later developments of proprietary platforms were a source of disillusionment because in his opinion the proprietary platforms are nothing more than an LMS that scales bigger; the proprietors are simply seeking to create a business rather than open up education to the world and unlock the creativity and inspiration of people who want to teach as well as those who want to learn.

Lilly believes that MOOC creators only need inspiration to do MOOCs well; that a web designer with an open-source leaning platform can incorporate a number of web tools into the platform to reach the world with necessary educational content through personal learning environments. Sue Ellen likewise believes that good examples of teaching and learning coupled with the supportive approval of administrators is the best starting point for the design, development, and delivery of excellent MOOCs. Sue Ellen also observed that those who want to join the cause need to gain the training and expertise in some of the critical literacies of computers and the internet in order to produce MOOCs that educate. Depending upon which direction an institution wants to go, decision-makers need to commit to appropriate support for faculty teaching MOOCs. This could be either contracting with a proprietary platform or using open-source platforms, and committing time and dedication to good learning outcomes.

Question nine sought to dive deeper into the resource question to give institutional leaders granular details that would help them understand how to support faculty on the front lines designing, developing, and delivering MOOCs. It was clear in the mind of
Peter, Sid, and Susan that designing, developing, and delivering MOOCs needed to count toward the faculty teaching load but there was also the realization that this issue is not going to be resolved for some time because of the experimental nature of this phenomenon.

Frank observed that the university as historically founded and conceptualized is on an unsustainable path which agrees with a number of contemporary scholars on the subject (Archibald & Feldman, 2012; Arum & Roksa, 2011; Bowen, 2012; Christensen, Horn, Caldera, & Soares, 2011). However, there is no consensus on what the University of the Future will look like. There is going to be a necessary change in the way that instructional needs are going to be met because it is currently too expensive (Archibald & Feldman, 2012; Benson, Esteva, & Levi, 2015; Christensen et al., 2011). Susan, like Peter, wants institutional leadership to understand the amount of time it takes to do MOOCs well but also the kind of public exposure faculty who produce MOOCs are now under and protect them and be responsible for them when things go badly.

Roman suggested that leaders make a commitment by being willing to invest resources in experimenting with new forms of pedagogy without an expectation of an immediate return on that investment. His suggestions went as far as challenging leaders to create a sort of “skunk works” research and development team who are tasked with determining how people learn online. Give them the latitude to do whatever is necessary without the accountability for coming up with an immediately viable product. Sue Ellen directs leaders’ attention to the fact that institutions now have a worldwide stage upon
which to work and encourages them to open up to the world and provide good examples of teaching and learning.

Question 10 aimed at giving these experienced individuals an opportunity to inform institutional leaders what they should know before launching a MOOC initiative. Peter wants leaders considering MOOCs to understand that the required resources to participate are often far greater than initially expected. The media hype created at the unveiling of xMOOCs created a sense that MOOCs were going to be the vehicle that saved higher education by lowering the cost (Auletta, 2012; Cusumano, 2014). However, the current price tag of a MOOC is over $100,000.00 and many leaders do not anticipate that kind of cost. This has limited participation in third-party platforms to only those institutions with deep pockets.

Frank, coming from the ranks of executive leadership and the faculty simply states that MOOCs cost money and require enormous amount of time. He notes that many leaders just do not understand the amount of resources required for this kind of initiative and that the faculty alone cannot develop all the expertise required to perform this monumental task. For smaller institutions with falling enrollments and tight budgets, this is simply not possible to develop. Frank does see the infrastructure of platforms as a way to more effectively market institutions to top-notch students in order to recruit for the institution. Susan adds to this same thought by pointing out that MOOCs cannot be a half-measure and done poorly because they can have as much negative effect as positive if things are done poorly. Sid shared that MOOCs are more work than the inexperienced
can imagine, estimating 400-500 hours invested in their design, development, and delivery and that they have the potential to drain the resources of an institution as well as drain the energy of the faculty by robbing them of the proper work-life balance.

Lilly shared concerns that the current focus on xMOOCs has ushered in a commercial interest that has the potential to undermine good teaching. Since high-profile research institutions are building market share in the MOOC ecosystem, the risk is great that institutions whose focus is on teaching could be shut out of the online teaching marketplace. She also shared concerns that the commercial appeal of xMOOCs has not advanced the cause of teaching and learning because the xMOOC features old pedagogy rather than new pedagogy. Roman added that there is absolutely nothing new about recording lectures and posting them on the internet, noting that Distance and Online educators have been doing that for a generation now. Sue Ellen offers leaders the perspective that slow, plodding efforts that allow faculty to develop are superior to more rapid pace exploration. She encourages leaders to expose faculty to new opportunities and to support their development efforts and stay ahead of the technology advancement curve. She also notes from the cMOOC side of the phenomenon that the chaotic nature of early MOOCs is slowly evolving more structure because student participants are expecting more structure to these learning events.
Discussion of Findings

Faculty engaged in the design, development, and delivery of MOOCs are cautiously optimistic about the future of Higher Education with MOOCs. The reasons for caution are several, including the fact that some institutions simply have more of the necessary resources to dedicate to develop high quality MOOCs. Naturally, elite institutions with endowments in the billions can support development of MOOCs both through investing in proven technology, and in experimental technology at the developmental stage. This resource gap could lead to dominance of the market, and consequent lack of a diversity of perspectives, between elite institutions and those operating primarily on tuition. Put another way, Susan expressed an open concern that MOOCs could create a new form of colonialism where only the most elite universities who have not been a part of the distance education field are the ultimate arbiters of what people across the world need to know.

Faculty who have been involved in the design, development, and delivery of MOOCs appear happy to have been a part of the movement whether it was in the early stages of cMOOCs or the wave of xMOOCs that came later. Professionals among higher education faculty expressed satisfaction in their institution’s progressive mindset in joining the movement as well as personal satisfaction for participating in the latest form of pedagogical experimentation. Faculty recognize that Universities are going to have to reach far beyond their locale to remain viable by attracting the brightest minds in the world. Even when their courses did not quite fit the online nature of MOOCs there was a
sense of accomplishment and satisfaction for participating and making a personal mark on their individual fields through designing, developing, and delivering MOOCs.

Executive level university administrators have been directly involved in getting their institutions involved in MOOCs. Presidents and Provosts realized that something of international standing and consequence was happening and that their institutions needed to be at the forefront of this movement for the sake of visibility and market share. Immense pressure was applied to institutional leaders from the moment the national media caught on to what was happening. This mainstream hype alerted state and local politicians searching for ways to trim state budgets to a potential new revenue stream for higher education. The rising costs of higher education to consumers and the level of scrutiny facing higher education institutions to prove their value created a situation ripe for experimentation. Decisions to join in the MOOC experiment were made quickly in some cases and the stakes have never been higher for the future viability of higher education (Lombardi, 2014). Institutional leaders are realizing the need to enhance instructional modes in order to meet the educational needs of people who start but never finish degrees as well as those who have never attended college (Parravacini, 2017). Executive administrators also realize in perilous financial times such as these, lacking the experience in online education requires institutions to purchase the expertise they lack (Sykes, 2017; Parravacini, 2017).

Faculty members who have had the opportunity to work with multiple platform providers can provide institutional leaders with information on which platform providers
offer the best solutions for their institutions. The expertise represented in this study was able to provide a diverse set of views on working with a third party platform from the faculty perspective. Faculty understand that there is an underlying desire by platform providers to produce a viable, scalable product for the educational marketplace. However, some faculty members found the experience of working with a technology platform confining for a number of reasons. Frank found that the assignments and peer grading absolutely did not work for him or for his students and he found a way to work around it and forego its use. Susan found that her subject matter did not translate well into an online environment partially because the technical experts lacked the ability to translate the material into the online environment and partially because her teaching style did not translate well. Susan’s subject matter required in-class discussion and participation. In her point of view the platform constrained the pedagogy which was a completely inappropriate set of circumstances. This was an important finding to consider for certain fields of subject matter.

Frank made the point as well that his subject matter did not seem to fit the online course format and did not translate well into the online environment. It is important to note that both initial courses were created in response to Gates Foundation grants that explored the possibility of creating more core content courses for the internet or for MOOC format specifically, with the intent being to reach the greatest number of students in the foundational courses. Institutional leaders considering MOOC initiatives would do well to be armed with this information. Frank pointed out that subject areas such as
mathematics, computer science, and engineering all seem to work well because they all have a well-defined method of problem-solving whereas other subject areas require more student involvement. On a positive note, Frank was excited about the possibilities of MOOCs as recruiting tools. In his mind, a MOOC could be used to identify the best and the brightest students from around the world to be invited to campus. Another positive Frank noted was the rigid syllabus he had to generate to stay on topic and on pace in order to cover his subject matter.

Engineering and computer science had a different experience working with the technology platforms. For these subject areas working with a platform was a positive experience. Sid appreciated the constant feedback and critique from technical experts and learning specialists because they made his lectures more concise and effective. Sid also appreciated the positive feedback he received from students at other Universities around the world who watched his video course lectures as a way to firm up their knowledge in similar courses. While he was nervous about the worldwide exposure of his content (as were most of the participants in this study), in the end he felt like it made him concentrate on getting the content right. Additionally, Sid liked the fact that the platform kept students informed of assignments and sent other course reminders to students to keep them on track and engaged. Sid did not feel as though the platform hindered his teaching practice in any way.

Peter was the one participant in the study who had experience with more than one platform. His comparisons between the two providers with which he worked are
informative because he could see important differences between the two. By his own admission, he preferred working with the platform that granted him the most latitude for content creation. As content creators and subject matter experts, it would seem to be an important feature to allow the faculty the most latitude for the design, development, and delivery of MOOCs.

On the cMOOC side, Lilly and Sue Ellen could see the value of having a central hub of activity but far and away preferred the flexibility of using open-source learning management systems (LMS) as that central hub. Lilly and Sue Ellen realize that not everyone possesses the critical technical literacies to use an open-source LMS most effectively. However, those who would consider learning the necessary computer languages or already possess those literacies have an opportunity to reprogram the software in ways that would enhance their course instances.

In questions five and six regarding the differences between traditional online courses and MOOCs it was interesting to find that most xMOOC professors had no previous experience in online or distance education from which to answer the questions. What faculty did note overwhelmingly is that they realize that current institutions are on an unsustainable financial path. There is a realization from faculty participating in the design, development, and delivery of MOOCs that the future of higher education is going to involve some form of online instruction and that the University of the Future is going to be remarkably different than the traditional model. What is unknown by these observant professionals is exactly what the university of the future is going to look like.
One of the many lessons faculty learned by faculty designing, developing, and delivering MOOCs is the value of active learning. Both Peter and Sid were quick to mention this in their interviews. The MOOC experience opened their eyes to the power of using online lectures to flip and blend their on-campus classrooms. Students who registered for their courses that had a corresponding MOOC were concurrently registered for both modes of instruction so that the on-campus students could preview lectures according to the in-class syllabus and use seat time for hands-on activities. “Flip and blend” was the terminology used by Sid to describe his experience. Sid added that students in other institutions around the globe were finding his MOOCs and using them to supplement their on-campus courses at their respective institutions. He discovered this in feedback from his MOOCs.

As the interview questions shifted to how faculty lived experiences could inform administrative leaders pressured into exploring MOOCs faculty appeared ready to offer advice. On both the xMOOC and cMOOC side of the phenomenon faculty caution leaders of the excessive commitment of time and resources that is required to produce viable MOOCs. Because xMOOC faculty were in an institution with deep pockets and a high level of commitment, they could see clearly the expense of employing videographers, editors, learning specialists, and IT professionals. The faculty had a clear view of the expensive resources required also in the form of studio production infrastructure. Peter and Frank both discussed how much like a newscaster they felt learning how to teach in front of a green screen in a professional studio. Sid was
appreciative of all the technical advice he received from these ancillary professionals on how to condense his lectures and make them more impactful. There was also a great emphasis on the use of academic laborers such as teaching assistants that added to the cost of production. For smaller, independent institutions this is not likely a viable option to launch an effort to reach a massive audience.

Faculty on both sides of the phenomenon also realize the need for administrators to support faculty in the design, development, and delivery of MOOCs. This support comes from several perspectives in the minds of course creators and content experts. There was the support in the form of appropriate remuneration. Peter, Susan, and Frank all felt as though MOOC production should count toward faculty teaching load. Peter realized that this is a form of support that will take time to resolve. Susan was adamant that administrators recognize MOOC production as progress toward tenure as well.

Another form of administrative leadership support was mentioned by Susan coming in the form of identity protection. MOOC faculty put themselves into the public sphere in a way that the classroom does not. In class students have been vetted by the university to attend while MOOC participants have not. Professors appearing in MOOCs have been cyber stalked as well as physically stalked by individuals gaining access to professorial identity. This is a major issue to consider when considering MOOCs. How does a university ensure the safety of the person and personal identity of the faculty appearing as the instructor of the MOOC?
On the cMOOC side, faculty also recognize that institutional leaders need to support the efforts of those producing MOOCs in the form of life/work balance. Roman believes that smaller, independent institutions focused on teaching need to put together teams of professionals tasked with understanding how people learn in the online landscape and explore without being responsible for coming up with a viable product in a quick time frame. Sue Ellen cautions leaders to support faculty exploration by giving them the latitude, budget, and credit toward teaching load and tenure to design, develop, and deliver MOOCs. From the perspective of faculty lived experience institutional leaders considering MOOC initiatives can take these insights from others who have been down this path to determine if it is the right path for their institution.

The final interview question dealt with what leaders need to know that really was not addressed through the interview process. Overwhelmingly, faculty realize that MOOCs are currently expensive as designed, developed, and delivered through third party technology platforms. Sid said that he does not believe that current administrative leaders realize the kind of financial expenditure and time commitments required. There was no clear understanding on the part of the faculty as to whether MOOCs were actually generating revenue or not. Without the mention of names a few professors on the xMOOC side believed that MOOCs were beginning to make money while others did not believe they were actual revenue generators. Frank did mention that he is positive that a viable business model will be found in the short term. Although the hype from MOOCs has begun to ebb, the experiment is still ongoing and platforms continue to evolve while
new ones enter the marketplace frequently. The verdict is still out as to whether they are either pedagogically sound or economically viable.

Conclusions

One conclusion that cannot be missed from this study is the fact that MOOCs do not appear to be the panacea for higher education woes. This was the explicit conclusion of at least one faculty member in this study. Faculty on the xMOOC side of the phenomenon would like to see MOOCs count toward their teaching load and in tenure considerations. They recognize the extreme time requirements and know that there has to be remuneration for MOOCs to be sustainable. There also has to be a successful business model for them to be sustainable. This is one of the growing areas of research on MOOCs attempting to determine which of the varied business models will produce a viable revenue stream for institutions. There is also a growing segment of research into how MOOCs might be used by businesses and industries for in-house training, proprietary training, or how digital badges might serve as a form of micro crediting to screen employees.

From a pedagogical standpoint, MOOC providers jumped into the fray without consulting online education pioneers. Another conclusion from this study is that MOOC providers and Online Education professionals should collaborate on shared interests going forward. Online education pioneers could offer current and future MOOC providers proven online pedagogy where MOOC providers could introduce the pioneers
to new technology to provide access and affordability to consumers and providers of higher education.

The affordances of internet technology have opened institutions of all sizes and classes to growing resources for teaching and learning. Many smaller, independent institutions understand the necessity of providing online options in order to survive. The most important conclusion of this study is that regardless of the future of MOOCs per se, online education in some form or in various forms is the future of higher education. This researcher currently works for a small private institution in the Southeastern United States and notices the increase in online hours and the effort to expand those offerings far beyond the location of the main campus. The move of top tier universities, particularly research institutions into MOOCs is itself evidence of the need to be a part of the online higher education movement (Parravacini, 2017).

Implications

Faculty realize that institutions of higher learning are going to change radically. Frank was adamant about this fact as evidenced from his knowledge of the higher education landscape and from his experience designing, developing, and delivering MOOCs. As an addendum to this thought, Frank noted that no one really knows what will take shape in the future. This is true in the sense that technology is constantly evolving as well. Roman added to this implication by observing that the “topography” of the internet itself is still unknown in many instances. This constant march of technology...
and its influence on the higher education landscape implies that some institutions will close due to their inability to move and react to the changes while some university systems will continue to consolidate to meet the new technological challenges. Faculty realize that the affordances of the internet are going to shape the future of higher education and that MOOCs are most likely only the first step in the inevitable evolution of technology in higher education.

Recommendations for Future Research

There is so much research needed in the MOOC universe that it is impossible to be comprehensive. It is a difficult task even knowing where to start simply because the issue is so big and because of the controversial nature and tone in the literature. The literature itself is new and expansive. In order to advance the field of research on MOOCs this research study finds that it would be important to survey faculty who lurk in MOOCs or who engage as participants and gauge perceptions of pedagogical effectiveness. It might also provide important findings to attempt to answer the question, Does the online nature of MOOCs mitigate the massive nature? Participants engage with the same material and only a fraction of other participants without knowing or seeing how many others are participating or lurking or dipping in and out non-synchronously.

Questions abound in the attempt to determine where the money trail is in MOOCs and how much do they cost and who is making money on MOOCs? The financial side of MOOCs is a very important topic at this time. It would be interesting to work with
presidents and provosts of institutions actively involved in MOOCs to discover what a number of universities across the country are spending on MOOCs. If institutions would reveal this information it would be helpful to discover the profit and loss equation on the business side of MOOCs.

This researcher began seeking to understand how learning analytics can be used ethically to improve higher education. However, the research in this area is too new to provide a literature review. As of the writing of this research, a topic of interest, still in its infancy is the issue of privacy and how the collection of learning analytics data will be impacted by privacy concerns, if at all in the new online landscape. It is unclear whether people online even care about privacy as long as their online presence doesn’t create a financial loss in terms of identity theft. Another area of inquiry that will present itself in the future is what will future universities look like if MOOCs and the online landscape begin to overshadow on-campus enrollment?

Summary

This study of the lived experiences of faculty engaged in the design, development, and delivery of MOOCs commenced from a piloted 10 question open-ended interview with seven faculty participants. The participants come from xMOOC experience as well as cMOOC experience and encompass both male and female professors whose university teaching careers cross different subject areas in sciences and humanities. Respondents were tenured, served in both faculty and administrative roles either previously or at the
time of the study, some have since left teaching roles to pursue business interests as well as educational roles outside of universities. The one thread that connects each respondent is their experience in the design, development, and delivery of MOOCs.

The findings revealed rich data and discussion that may be used by institutional leaders considering MOOC initiatives to aid in the decision-making process. Higher Education Institutions have been faced with diminishing state budgets, falling enrollments, and consumer scrutiny in the last decade that has led to the creation of this phenomenon. State level politicians have been looking for ways to trim budgets, college administrators have been searching for solutions to falling enrollments, and consumers are searching for less expensive alternatives to credentialing. All of this has resulted in an educational landscape ripe for disruption.

Institutional leaders have been faced with a tough set of choices about joining or ignoring the MOOC phenomenon. As a result, faculty have been tasked with designing, development, and delivery of MOOCs. Most faculty participants joined the experiment willingly but with reservations, while others felt pressured to participate. All felt rewarded to have participated regardless of the temporary pain of the process. Arduous, laborious, and expensive seem to be the current results, while progress is slow. Questions persist. After nine years of history the verdict is still out on the pedagogical utility and the economic viability of MOOCs.
REFERENCES


140


Kolowich, S. (2013, September 18). MIT will offer MOOC curricula, not just single courses, on edX.


Owens, T. (2011). Jim and Martha tell the story of ds106 [youtube video]. Available at youtube.com/watch?v=LtQwf3YAXH0


APPENDICES
APPENDIX A

PILOTED INTERVIEW QUESTIONS
INTERVIEW QUESTIONS

Understanding the Faculty Experience of developing, designing, and delivering Massive Open Online Courses to inform academic leaders considering MOOC projects.

Research Question: What are the lived experiences of faculty members who have participated in the design, development, and delivery of MOOCs that can inform leadership decision-making in regard to institutional strategy?

1. Give me a brief overview of your experience designing, developing, and delivering MOOCs.

2. Describe how your institution got into designing, developing and delivering MOOCs…
   a. What went into the decision to design, develop, and deliver MOOCs?
   b. Who were the key people/positions responsible for making the decision to design, develop, and deliver MOOCs?
   c. Describe your involvement in the decision-making process.

3. What specific role have you played in designing, developing, and delivering MOOCs at your institution?

4. If your institution has worked with a third-party MOOC platform, how has that experience improved or hindered your role in design, development, and delivery of MOOCs?
5. Describe how designing, developing, and delivering a MOOC is different from designing, developing, and delivering an on campus course or a traditional online course.

6. What aspects of designing, developing, and delivering a MOOC challenge you as a professor? What are the opportunities and benefits?

7. What insight(s) have you gained from designing, developing, and delivering MOOCs that will guide your teaching practice in the future?

8. How many full time employees does it take to design, develop, and deliver a MOOC and what training and resources do faculty need to design, develop, and deliver MOOCs well?

9. In the future, what should institutional leadership provide for those who design, develop, and deliver MOOCs?

10. What do institutional leaders considering MOOC initiatives need to know about the design, development, and delivery of MOOCs?
APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVALS
15-Mar-2016

Mr. Richard Bryan Collins
3001 Mercer University Drive
Tift College of Education
Atlanta, GA 30341

RE: Understanding the Faculty Experience of developing and teaching Massive Open Online Courses to Inform academic leaders considering MOOC projects. (H1803084)

Dear Mr. Collins:

Your application entitled "Understanding the Faculty Experience of developing and teaching Massive Open Online Courses to Inform academic leaders considering MOOC projects. (H1803084)" was reviewed by this Institutional Review Board for Human Subjects Research in accordance with Federal Regulations 21 CFR 50.102(b) and 46.110(b) (for expedited review) and was approved under Category 6, 7 parts 3 and 610164.

Your application was approved for one year of study on 15-Mar-2016. The protocol expires 14-Mar-2017. If the study continues beyond one year, it must be re-evaluated by the IRB Committee.

Item(s) Approved:
New study with the use of interviews, audio, and video recordings

Please complete the survey for the IRB and the Office of Research Compliance. To access the survey, click on the following link:

"Mercer University has adopted and agrees to conduct its clinical research studies in accordance with the International Conference on Harmonization's (ICH) Guidelines for Good Clinical Practice."

Respectfully,

[Signature]

Ava Chomtits-Richardson, M.Ed., CIP, CIM
Member
Institutional Review Board
Mercer University IRB & Office of Research Compliance
Fax (478) 301-2329
OIC MercerUniversity.edu

1501 Mercer University Dr. | Macon, Georgia 31207-0001
(478) 301-4101 | FAX (478) 301-2329
Status of Research Review

Date: February 11, 2016
Title of Project: Understanding the faculty experience of developing and teaching Massive Open Online Courses to inform academic leadership considering MOOC projects.
Investigator(s): Bryan Collins

☐ Research Approved
☐ Conditional approval
☐ Committee requests further information before a decision can be made
☐ Proposal has been denied

The IRB committee reviewed your project proposal and its decision is marked above. Please review the appropriate text below for the decision that was rendered regarding your proposal:

Research approved: If your protocol has been approved, please note that your project has IRB approval from today for a period of one year and you are free to proceed with data collection. If this study continues unchanged for longer than one year, you will need to submit a Request for Project Continuation form. If this study continues for more than one year and there are changes to the research design or data that is collected, you will need to submit a Request for Amendment to Approved Research form. The IRB reserves the right to observe, review and evaluate this study and its procedures during the course of the study.

Conditional approval: If conditional approval is granted, you are allowed to proceed with data collection provided that the required modifications (see attached) are in place. You will need to submit a Request for Amendment to Approved Research form within 30 days. If this study continues unchanged from that amended protocol for more than one year, you will need to submit a Request for Project Continuation form. If this study continues for more than one year and there are changes to the research design or data that is collected, you will need to submit a Request for Amendment to Approved Research form.

Committee requests further information: Please see the attached document and use it to guide required modifications and then re-submit your request.

This proposal has been denied: See the attached document for an explanation of why your proposal has been denied.

Kent D. Johnson, Ph.D.
Committee Member, Lipscomb University Institutional Review Board
Comments: Your project titled “Understanding the faculty experience of developing and teaching Massive Open Online Courses to inform academic leadership considering MOOC projects” has been approved by the Lipscomb IRB pending minor changes on the Informed Consent to state the following:

This project has been reviewed and approved by Mercer University’s IRB and the Lipscomb University IRB. If you believe there is any infringement upon your rights as a research subject, you may contact the Mercer IRB Chair, at (478) 301-4101 or the Lipscomb University IRB Chair, Dr. Roger Wiemers, at (615) 966-7067.

If you change your methodology significantly, then your project may need further IRB approval.