UNIVERSITY STUDENTS’ AND PROFESSORS’ PERCEPTIONS OF LEARNING IN CREDIT AND NON-CREDIT BASED MASSIVE OPEN ONLINE COURSES (MOOCs)

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Abstract

Technology and in particular, the internet, has vastly changed the traditional learning model in higher education institutions, particularly with online courses providing an alternative to on-campus lecture halls. As the popularity of online learning has grown, a relatively new development has emerged, Massive Open Online Courses (MOOCs), which is viewed by many as a transformative change to the business of education. This mixed-methods study will explore how university students and professors perceive MOOCs, as compared to face-to-face classroom and online course formats. The analysis will compare credit and non-credit based MOOCs and what features are most beneficial to learners. Using an online survey instrument and interviews, data will be collected and analyzed to identify participants’ ratings and experiences with various course formats. The analysis will provide insights into the MOOC development, the impacts on higher education and areas for future research.

Introduction

Is there a “tsunami” coming to higher education? Is the traditional learning paradigm in higher education institutions undergoing a transformative change? Many education leaders, researchers and other experts have been expressing their views on the rapid rise of massive open online courses or MOOCs as they are known. Along with the availability of MOOCs as a learning experience, the most recent development involves providing recognition of learning in the form of college degree-based and industry-recognized credit, as well as certificates that may be accepted for job-specific skills.

Given the increased attention of MOOCs in the media with varying levels of factual details, it is important to distinguish between two types of MOOCs, cMOOCs and xMOOCs, with the concept of
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cMOOCs dating back to the 1960s (Siemens & Downes, 2008). cMOOCs are based on Connectivist theory and are designed to provide social and informal learning. The xMOOC, which is the focus of this study, is the type which has attracted the recent media coverage. Based on the more traditional pedagogy of information consumption, the xMOOC is an online course designed to be available to a large audience on an open access platform via the internet. With the advancement in technology, MOOCs are considered by many to be a 21st century form of distance education, based on the concept of open educational resources (OER), which in broad terms, provides free access to educational content (Daniel, 2012). MOOCs are distinctly different from the more familiar online courses provided by universities, often hosted on their learning management systems, where content is custom designed and delivered in a closed environment with enrolled students requiring secure login credentials (Kop & Mak, 2011).

In the Fall of 2011 when Stanford University first offered free MOOC courses to the general public, their response rate was in the thousands; since that time, the popularity of this new online course design has soared and the demand for this type of resource is continuing to increase. Many of the professors teaching MOOCs are now widely recognized for their expertise and students are eager to enroll in their courses. Many faculty and technology companies have responded to this demand with new infrastructures to support profit and non-profit initiatives that are attracting additional universities to share resources with providers such as Coursera, Udacity and edX.

With this growth, there is the perception of a disruptive force within higher education institutions that may transform the way students access education and also change the role of teachers. For the majority of MOOCs currently available, course access is free and students do not earn college credit. Recently, however, some higher education institutions have decided to offer credit-based
MOOCs that paying students can use toward their degree and also transfer to other participating institutions. Given this momentum, the future of MOOCs may bring significant changes to the traditional methods and costs of earning educational degrees and how these credentials are recognized, not only in academia but also by government and businesses. The cost-factor may have the greatest impact on the growth of MOOCs, as universities are struggling with tuition costs and students are increasingly going into debt or simply unable to afford a traditional university degree (Ruth, 2012).

MOOCs have raised a number of concerns in higher education and have caught the attention of professors and students alike, with issues such as increasing tuition costs, student debt and a tight job market percolating to the surface. Since the MOOC “phenomenon” is fairly recent, empirical research studies are scarce, especially studies that focus on degree-based MOOCs. Some research studies have investigated student perceptions with regards to measuring the quality of university-designed online courses and their personal learning outcomes (Song & Singleton, 2004; Ward, 2010; Armstrong, 2011). Due to this shortage, the purpose of the study is to expand on current studies and to explore the impact of MOOC courses, both credit and non-credit based, on students’ and professors’ perceptions of this format of online learning. Specifically, the goal of the research is to assess if students and professors believe that MOOCs are as effective as university-designed online courses and what features are most beneficial.

To provide additional data for the study, an established MOOC course will be provided to a small group of undergraduate students and professors at the selected university. The MOOC will be selected from Coursera, a company that offers free university courses online. Since a MOOC course usually has a set start date, the course selected for this study will already be in session, thereby allowing a flexible sign-up process for participants.
The findings of this study may benefit universities and professors as they assess their role in the future of higher education, and students, as they assess their options in achieving their learning goals.

The research questions that this study aims to explore include:

a. Is there a relationship between participants’ experience in online learning courses and their perceptions of traditional classroom (F2F), university-designed online and MOOC courses?

b. Does access to free and/or credit-based MOOCs affect their decisions to enroll in a MOOC?

c. What elements are perceived as valuable for F2F, university-designed online and MOOC courses?

The study begins with a review of the research literature related to online and MOOC learning and learner/teacher perceptions of online learning. Following this discussion, is a description of the quantitative and qualitative methods used to collect data and a proposed analysis of the study results. Lastly, in the conclusion, proposed implications and suggestions for further research are presented due to nature of this course assignment.

**Literature Review**

While there are many empirical research studies regarding online learning courses, there is considerably less research available on the highly publicized Massive Open Online Courses (MOOCs). The studies focusing on student perceptions of online learning and MOOC courses vary in the criteria used to measure their experiences, assessment of value and participation levels. Due to the relatively scarce scholarly research on MOOCs, the literature review includes studies of online learning conducted prior to the popularity and public access to MOOCs. The following section includes a brief review of
learning theories as they relate to perception, followed by the previous research, common themes and limitations found in various research studies.

**Learning Theories**

In order to research perceptions of learning, we must look back to grounded learning theories to understand how learning occurs and how perceptions develop that may influence teacher and learner decisions. Some examples of learning theories related to how people perceive their environment include Cognitive, Constructivist, Expectancy and Motivation theories. The Cognitive perspective views learning as an internal mental process of analyzing and applying personal insight, memory and perception. Also under the Cognitivist perspective, Constructivism focuses on the learner’s active role in constructing knowledge, and Expectancy and Motivation theories attempt to understand the cognitive processes affecting individual choice and goal achievement (Driscoll, 2005). A relatively newer theory of learning known as Connectivism, focuses on obtaining knowledge in the digital age with dynamic, informal, social networks where learners can readily create and share content with supporting technologies. Many of the online learning and MOOC studies fall under the Cognitivist and/or Connectivist domains. Learning theories have evolved from Behaviorism to Cognitivism to Constructivism/Social Constructivism to Connectivism. This evolution can be viewed in parallel with the advances in technologies and provides a rich history of teaching and learning (Woo and Reeves, 2007).

Research studies have noted that teachers and students may perceive limitations in online learning environments based on their pedagogical beliefs and personal criteria for effective instruction (Ward & Peters, 2010). In Woo and Reeves study (2007), learning environments based on social constructivism, that support social interaction and collaboration between students and professors contribute to positive perceptions and learning outcomes.
Previous Research Studies

The majority of research articles regarding student perception of online and MOOC courses are case studies with relatively small numbers of student participants. With regards to online courses, experiences were described by students via interviews, observations and/or surveys (Armstrong, 2011; Song 2004). For some of the MOOC studies, surveys were conducted to measure learner perceptions of effectiveness and observations of course activities with the use of web-analytic tools. These tools measured the levels of content creation, network connections and overall level of activity with social networking tools (Kop, 2011).

Another research study by Lee (2011), designed a multi-dimensional questionnaire to compare online learning to traditional F2F format, based on participants’ perceptions of context, their gender and level of education. Another important method was to extend beyond one dimension of perception such as self-efficacy or perceived capability, and include experience and level of interest. This type of research approach may be considered when comparing online learning and MOOCs, as similar aspects of learning such as collaboration, self-regulated learning and information seeking are relevant concepts to measure when evaluating perceptions.

In the Lopez-Perez (2011) study, a blended model where activities were designed to complement the F2F class activities, and objective measures were recorded to track the dropout rate and passing grade on the final exam. Both criteria were improved and students’ perceptions of blended learning were found to be interrelated, with their final marks depending on the blended learning activities, and with the students’ age, background and class attendance rate. These results reveal interesting proposals for additional research on whether degree-based MOOCs would show any difference in drop-out rates to non-degree MOOCs, and whether participants’ perceptions were correlated as well.
Common Themes

Several themes have surfaced from the literature review including learner descriptions of positive learning outcomes as well as negative experiences, different learner characteristics and design frameworks. These themes are discussed below to provide a more detailed review of previous studies and their relevance to present study are outlined in the Summary.

Positive Perceptions

In Nurre’s (2013) study, the effectiveness of video tutorials as a learning aid was measured by use, student perception of the value of tutorials, and the perceived advantages of the technology. Similar in design to the MOOCs which also use video tutorials, students evaluated the technology as a convenience and served to enhance knowledge by providing a hybrid learning environment. When the learning environment is strictly online, as in a MOOC format, Mackness (2010) found the autonomy of the course format resulted in more “connected” learners.

In Lee’s (2011) study, there was evidence that positive perceptions of self-efficacy, experience and interest in collaboration, self regulated learning and information seeking were positively correlated to the amount/intensity of the internet courses selected. They found that the number of online classes a participant was taking was critical to perceptions about this type of learning format.

Negative Perceptions

In Song’s study, the most significant problem that affected perception of online courses was experiencing technical issues. Other factors such as the delay in responses from instructor and/or peers, the unfamiliarity with the expertise of peers, and a sense of isolation due to limited F2F interactions
with peers and instructor, all contributed to a lack of community. Mackness’ (2010) study also noted, in MOOC open network format, learning can be hindered due to the lack of formal structure and direct teacher support that is usually provided in online and F2F formats.

Learner Characteristics

Regarding learner characteristics, it is important to consider participants’ prior exposure to using the internet and social media tools, and their level of experience (Liaw, 2013) with online, blended learning courses, and/or MOOC courses. These types of experiences may influence their perception of value from taking an online or MOOC course. Other learner characteristics such as age, gender and ethnicity may play a role in their perceptions of online learning formats. In Ke & Kwok (2013) study, results indicated there were no significant differences in learner satisfaction among age or ethnicity regarding online experiences, but showed a more positive perception of face-to-face learning formats.

Specific Frameworks

As mentioned above, Lee's (2011) research evaluated student’s perceptions using a model with three specific aspects of learning: collaboration, self-regulated learning (SRL) and information seeking (IS) using a multidimensional questionnaire to evaluate three dimensions per aspect: perceived capability, experience, and interest. In this quantitative study, Lee stressed the relevance of data that not only measures academic performance with technology, but also student’s perceptions as this data will provide important benchmarks in assessing effective teaching and learning online and in a MOOC.

In a research study by Ward (2010), student and faculty perceptions of quality were measured comparing synchronous interactive online, F2F and asynchronous learning environments. The
dimensions of quality that were measured included instructional effectiveness, collaboration, student-faculty contact, ease of access and reduction in cost.

**General Limitations**

Much of the educational research studies are qualitative, using non-probably sampling with one type being "convenience" sampling, where subjects are chosen due to convenience and also "purposeful" sampling, where participants are selected by the researcher due to their potential to be "information-rich". Groups of subjects are not usually randomly selected from a larger population, so the results are difficult to generalize to other subjects and are less representative of the population as a whole due to the unique characteristics of the sample. Also, if surveys are used, specific validity and reliability tests should be completed to assess their value. For example, in Lee’s (2011) study, since the majority of participants were from business and management programs, this characteristic may affect their perceptions of different learning environments. Ward (2010) noted an important distinction between the perception of the quality of learning environments and the actual measurement of the quality.

**Literature Review Summary and Application**

The existing research on teacher and student perceptions of value in online vs. F2F learning environments far exceeds similar studies with MOOCs due to the relatively new emergence of this phenomenon, especially in higher education. In reviewing the literature above, the themes of learner perceptions, characteristics, research design frameworks and research limitations are common threads in educational research. This study aims to focus on providing additional insights on the impact of MOOCs and to extend our understanding of this form of learning technology.
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With the gap in empirical research and the rapid changes in technology, more research is needed to build upon the existing knowledge base to continue to improve learning outcomes. Specific questions concerning student and professor perceptions of degree and non-degree MOOCs are needed, as MOOCs present a more complicated change model to higher education. Also, asking reflective questions about the future role of professors, students and “brick and mortar” campuses and whether the current cost structure will be impacted as technology continues to move teaching and learning into new paradigms.

Research Purpose and Questions

The purpose of the study is to explore the impact of MOOC courses, both credit and non-credit based, on students’ and professors’ perceptions of learning. The goal of the research is to assess how students and professors compare MOOCs to university-designed online and F2F courses, and what features of MOOCs are most beneficial to students.

Qualitative data from open-ended survey questions will be gathered to initially identify the MOOC course participants and construct a narrative of the analysis. Quantitative data from structured survey questions will be collected based on participant demographics, prior online learning experience and assessment of their online learning experiences. Data will be analyzed using descriptive statistics including mean, median and mode based on rating scales and statistical tests to indicate validity, correlation and significance.

This study will address the following research questions:

a. Is there a relationship between participants’ experience in online learning courses and their perceptions of traditional classroom (F2F), university-designed online and MOOC courses?

b. Does access to free and/or credit-based MOOCs affect their decisions to enroll in a MOOC?
c. What elements are perceived as valuable for F2F, university-designed online and MOOC courses?

This study will also examine whether a high perception of value of MOOCs will correlate with a high level of experience and satisfaction with online courses. The analysis will focus on the course delivery format and its effect on the participant’s perceived value of the learning environment.

Method

A mixed method research design was chosen for this study to collect data in order to analyze how students and professors rate MOOCs to online and F2F course formats but also to further understand potential negative ratings of online and MOOC courses. The qualitative design of the open-ended survey questions may provide additional content-rich feedback to supplement the objective outcomes of the quantitative Likert scale survey questions.

The following diagram depicts the method of research questions as an exploratory design type:

QUAL → QUAN

In this sequential exploratory mixed-method type of design, a qualitative survey is used first, containing questions that allow the participants to reflect on their perceptions and other experiences with different course formats. In addition, participants will be asked to indicate whether they would like to participate in a MOOC course and continue with the next phase of the study.

Based on the survey results of those who indicated they would participate in a MOOC and the coding of responses to identify patterns, the quantitative survey will be designed. Since there are relatively few empirical studies of perceptions of MOOCs, gathering qualitative data may help to improve the design of the quantitative survey questions. According to McMillion (2011), this method
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“increases the validity of the scores” since the questions can be “well matched to how the subjects”, not the researchers, react to the MOOC phenomenon.

This study will be conducted in two Phases as described in the next section.

**Phase 1 – Qualitative Study of Perceptions and MOOC Participants**

During this phase, a qualitative survey will be used to explore participants’ perceptions and assess MOOC course participants. A pilot test of this survey will be sent to a sample of five (5) students and two (2) professors from the sample group for feedback on the introductory research description, survey directions, questions and method. Researchers will be make adjustments to the survey based on these comments.

**Participants.**

The selection method for participants is convenience sampling due to the relative ease of accessibility to undergraduate students and professors at the university. The sample of participants will be comprised of the following:

1. Fifty (50) undergraduate students from the following two (2) separate programs for a total of 100 students
   a. School of Business
   b. School of Education and Human Development
2. Ten (10) professors from each program for a total of 20 professors
3. The initial total of Phase I participants will be 120
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Setting.

The characteristics of the research setting include:

1. Large, U.S. urban university with approximately 20,000 undergraduate students
2. Total enrollment is 33,000 with 5,800 students living on-campus
3. Enrollment by major ethnic groups includes: Asian 4,419; African American 2,810; Hispanic/Latino 2,915; White 16,465
4. High percentage of commuter students with 62% full-time and 38 % part-time enrollment
5. The qualitative survey will take place online via the university email system
6. Researchers will meet on campus with university administration to request permission to conduct the study

Variables/Phenomenon/Measures.

The data sources for the qualitative portion of the study include:

1. Central phenomenon (CP): Perception of value in MOOCs vs. university-designed online courses and F2F classroom courses
2. Survey responses to MOOC participation question
3. Survey responses to demographics and open-ended questions

The results of the qualitative responses will undergo interpretative analysis to develop coding categories and identify themes for further discussion. These themes include:

1. level of interaction and communication with students and instructors
2. instructor involvement and support
3. student engagement with content and activities
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4. quality of instructional design
5. satisfaction with learning outcomes

**Instruments/Materials.**

The research instrument will be an online survey designed using Survey Monkey. A total of 120 online surveys will be emailed to randomly selected students and professors within specific participant groups as stated in the Participants section. There will be an initial personalized email sent to participants via the university email system to introduce the study, request their participation and to expect a follow-up email within one week. The follow-up email will contain a link to the Survey Monkey website containing the open-ended research questions, multiple choice options and a Yes/No request to participate in a MOOC course. Figure 1 provides an example of the qualitative research questions for Phase I.

**Figure 1**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participant Characteristics / Demographics</strong></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>What is your age?</td>
</tr>
<tr>
<td>Gender</td>
<td>What is your gender?</td>
</tr>
<tr>
<td>Occupation</td>
<td>What is your occupation?</td>
</tr>
<tr>
<td>Division</td>
<td>What School are you affiliated with?</td>
</tr>
<tr>
<td>Online Course</td>
<td>Have you participated in a university online course (s)? If yes, please provide the name of the course(s).</td>
</tr>
<tr>
<td>MOOC Course</td>
<td>Have you ever participated in a MOOC(s)?</td>
</tr>
</tbody>
</table>
### Perceptions of course formats

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, please provide the name(s).</td>
<td>MOOC course(s): _________________</td>
</tr>
</tbody>
</table>

#### On-campus

Please describe your level of satisfaction with university on-campus classroom courses.

What is most valuable to you about on-campus courses?

#### Online

Please describe your level of satisfaction with university online courses.

What is most valuable to you about online courses?

#### MOOC

Please describe your level of satisfaction with MOOCs (university or external provider).

What is most valuable to you about MOOCs?

### Phase II Participation

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOOC Are you interested in participating in a MOOC designed by an external provider? (Introductory level subject will vary) Sample MOOC Course provided by</td>
<td>Yes / No / Not Sure If not sure, please provide questions or concerns: __________________________</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Question</th>
<th>Response Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSERA: How Things Work: An introduction to physics in the context of everyday objects. Workload: 2-4 hours/week Duration: 6 weeks</td>
<td>Yes / No / Not Sure</td>
</tr>
<tr>
<td>Follow-up Survey Will you complete a brief follow-up survey to rate your previous learning experiences?</td>
<td>Yes / No / Not Sure</td>
</tr>
<tr>
<td>If not sure, please provide questions or concerns:</td>
<td></td>
</tr>
</tbody>
</table>

Researcher's Identity.

Due to the nature of qualitative research and potential for researcher bias, detailed descriptions of the researchers for this study will be provided in the introductory email to participants and will include:

**Background and experience.** Two graduate student researchers in an Instructional Design Research Methodology program will conduct the study. Both researchers have a research interest in online and MOOC learning environments.

**Perspectives on analysis and outcomes.** The researchers acknowledge their potential expectations for the outcomes of this study. Therefore, an external university professor or PhD graduate student familiar with educational research will be secured to review the survey design, methodology and data analysis.
Validity and Reliability.

For this non-experimental research study, there is no intervention treatment used to compare groups. This study will describe a phenomenon as perceived by the participants and interpreted by the researchers. The identity and role of the researchers will be known to the university administration and participants to establish a rapport and accountability. Researchers will ensure participants’ confidentiality and anonymity.

The credibility of the study (McMillon, 2011) is based on the accuracy and trustworthiness of the data, the collection techniques, analysis and conclusions. For this study, credibility will be assessed by a review of one external PhD graduate student or one professor familiar with the subject area to review the study design and resulting data analysis. Detailed descriptions of participants and all study components will be provided. Results will not be generalized to apply to other groups, however, results may be applied to related contexts.

Data Collection Procedures.

The data collection procedures will begin with the graduate research students contacting the Dean of Student Affairs and the Office of the Registrar to describe the research study and request permission to conduct the study at their university. Once permission has been granted, the researchers will contact the Office of Information Technology, School of Business and the School of Education via initial email, follow-up phone call and in person to explain the study and request their assistance for specific requirements. For the Office of Information Technology, a random sample of participants’ names and email addresses will be generated based on the specific characteristics required for the study. For the two Schools, the researchers will contact the Department Heads to describe the study and request their assistance with supporting the study with their students and faculty.
The next step consists of contacting the participants with the initial email to describe the study and to expect a follow-up email with additional details. With five (5) business days, a second email will be sent containing instructions and a link to the Survey Monkey website to complete the online survey within one week or seven (7) business days. A reminder email will be sent mid-week by the researchers to increase the response rate. Survey responses will be tracked for two (2) weeks and a final email reminder will be sent again during the beginning of the second week. During the third and final week, responses to the surveys will be tracked online and data will be exported to Excel for further analysis. A final email will be sent to respondents, thanking them for their participation and to notify them the survey has been closed.

**Proposed Data Analysis.**

The proposed data analysis will consist of participant demographic percentages to ensure a relatively diverse group of participants have responded. If the researchers believe the study will be adversely affected by a homogeneous group, then another random sample will be requested for a second survey procedure. For this Phase I qualitative study, responses will be analyzed by the researchers using Survey Monkey’s Text Analysis feature to code and categorize the open-ended responses to establish themes for Phase II survey questions. In addition, researchers will use Survey Monkey to count the total number of responses, and identify the future MOOC participants and Phase II survey respondents. Additional descriptive statistics will be calculated for response rate and participant demographics as shown in Table 1.
The researchers will assess how many students and professors would like to participate in the MOOC. An initial email will be sent to the future MOOC participants to describe the MOOC Course, instructions on how to enroll and request confirmation. Once a sample size of approximately 40 students and 10 professors has been confirmed, the researchers will proceed with the selection of the MOOC course and set a start date. Researchers will communicate with participants via email, track their account creation via email confirmations and manage the ongoing logistics of the MOOC participation. Once the MOOC course has ended, Phase II surveys will be emailed to participants to be completed within one week to assess perceptions.

**Phase II – Quantitative Study of MOOC Participants’ Perceptions**

During this phase, a quantitative survey will be sent to MOOC participants to collect data on specific responses related to the research questions. A pilot test of this survey will be sent to a sample
of five (5) students and two (2) professors from the sample group for feedback on survey directions and questions. Researchers will be make adjustments to the survey based on these comments.

Participants.

Based on the responses from the exploratory qualitative questionnaire, the participants who volunteered to participate in the MOOC will be included in the quantitative portion of the study. The Phase II participant details include the following estimations:

1. Twenty five (20) undergraduate students from two (2) separate programs for a goal of 40 students and at least 5% of participants should comprise each school.
   a. School of Business
   b. School of Education and Human Development
2. Five (5) professors from each program for a total of ten (10) professors
3. The total number should be at least 30 participants with a projected maximum of 50.
4. Other goals include obtaining a relatively even number of men and women. Age will be recorded as a factor for analysis.

Setting.

The setting for Phase II will be the same as for Phase I. The MOOC course will be conducted online. Communications between participants and researchers will be conducted via email or phone when required. The quantitative survey will be provided to participants via an email containing an online link to the Survey Monkey site.
Variables/Data Sources/Measures.

The data sources for Phase II will comprise responses from the quantitative survey. The numeric results of the responses will be analyzed using descriptive statistics (mean, standard deviation and frequencies) and basic inferential statistics. A correlation will be measured to determine if there is a relationship between online experience and rating of MOOC and online courses. The relationship will not be considered as a causal relationship, but rather considered a predictor of an association between the two variables.

Instruments/Materials.

The research instrument for Phase II will be an online survey designed using Survey Monkey. The total number of online surveys sent to recipients will be determined based on the responses from Phase I. The survey will be emailed to confirmed students and professors as outlined in the Participants section.

The survey will use a 5 point Likert scale rating system, with ranking options and multiple choice questions. Figure 2 provides an example of the quantitative research questions for Phase II.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceptions of Course Formats</strong></td>
<td></td>
</tr>
<tr>
<td>On-campus, Online and MOOC</td>
<td>How would you rate your overall experience with:</td>
</tr>
<tr>
<td></td>
<td>a. On-campus courses</td>
</tr>
<tr>
<td></td>
<td>b. Online courses</td>
</tr>
<tr>
<td></td>
<td>1=Poor</td>
</tr>
<tr>
<td></td>
<td>2=Fair</td>
</tr>
<tr>
<td></td>
<td>3=Neutral</td>
</tr>
<tr>
<td></td>
<td>4=Good</td>
</tr>
<tr>
<td>Question</td>
<td>Response Type</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Valuable attributes to learning</td>
<td>1. Interaction and communication with other students</td>
</tr>
<tr>
<td></td>
<td>2. Instructor involvement and support</td>
</tr>
<tr>
<td></td>
<td>3. Engagement with content and relevant activities</td>
</tr>
<tr>
<td></td>
<td>4. Quality of instructional design</td>
</tr>
<tr>
<td></td>
<td>5. Satisfaction with learning outcomes</td>
</tr>
<tr>
<td>Types of MOOCs: credit vs. no credit</td>
<td>1=Strongly disagree</td>
</tr>
<tr>
<td></td>
<td>2=Disagree</td>
</tr>
<tr>
<td></td>
<td>3=Neutral</td>
</tr>
<tr>
<td></td>
<td>4=Agree</td>
</tr>
<tr>
<td></td>
<td>5=Strongly agree</td>
</tr>
<tr>
<td>Level of online Learning Experience</td>
<td></td>
</tr>
<tr>
<td>Online Courses</td>
<td>How many online learning courses have you completed for university credit?</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>MOOCs</td>
<td>a. How many non-degree MOOCs have you taken?</td>
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<tr>
<td></td>
<td>b. How many credit-based MOOCs have you taken?</td>
</tr>
<tr>
<td>MOOC Sample Course</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Response Type</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Do you feel the sample MOOC course met your learning goals?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>a. What was the most valuable component of the MOOC?</td>
<td>1. Interaction and communication with other students including social media</td>
</tr>
<tr>
<td>b. What was the least valuable component of the MOOC?</td>
<td>2. Instructor involvement and support</td>
</tr>
<tr>
<td></td>
<td>3. Engagement with content and relevant activities</td>
</tr>
<tr>
<td></td>
<td>4. Quality of instructional design</td>
</tr>
<tr>
<td></td>
<td>5. Satisfaction with learning outcomes</td>
</tr>
</tbody>
</table>

Validity and Reliability.

For the quantitative portion of this mixed methods study, the identity and role of the researchers will already be known to the university administration and participants as mentioned in Phase I. Researchers will ensure participants confidentiality and anonymity.

The credibility of the quantitative portion of the study will again be based on the accuracy and trustworthiness of the data, the collection techniques, analysis and conclusions. Since this phase will entail more advanced statistical analysis techniques, a Subject Matter Expert (SME) will be obtained to evaluate the overall survey design, specific wording of survey questions and response options, data collection, selection and use of statistical analysis tests, and valid analysis of results. Detailed descriptions of all study components will be provided. Results will not be generalized to apply to other groups, however, results may be applied to related contexts.
Data Collection Procedures.

The data collection procedures for Phase II will begin when the graduate research students have finished collecting and analyzing the responses from Phase I. Based on the identification of the MOOC participants, the researchers will send an email to describe the details of the selected MOOC and a start date for the course. Participants will respond via email within 5 business days to confirm their MOOC account. A follow-up email will be sent as a reminder of the MOOC course start date. Researchers will support participants with any questions about the MOOC logistics before the course begins. Once the MOOC course begins, researchers will only be available for critical MOOC questions in order to reduce interfering with the participant’s experience with the MOOC. Upon completion of the course, researchers will follow-up with participants via email with the Phase II survey.

Again, reminder emails will be sent by the researchers to help ensure a 100% response rate. Survey responses will be tracked for one week via Survey Monkey. During the second week, an email will be sent to participants that the survey is ending and all responses are due. Responses will be reviewed in Survey Monkey and then downloaded to Excel for further analysis as detailed in the next section.

Proposed Data Analysis.

Survey responses will be tallied using Survey Monkey’s tool to calculate response totals, percentages, and response counts for each question. Data will be exported to Excel for further statistical analysis regarding calculations for means, standard deviations and frequencies.

To address the research question regarding a relationship between participants’ experience with online learning courses and their perceptions of different course formats, a correlation coefficient will be calculated.
UNIVERSITY STUDENTS’ AND PROFESSORS’ PERCEPTIONS OF LEARNING IN CREDIT AND NON-CREDIT BASED MASSIVE OPEN ONLINE COURSES (MOOCs)

To determine if the student ratings between course formats are statistically significant, an analysis of variance test (ANOVA) will be used to compare the group means. Ratings for F2F, online and MOOC courses will be evaluated to identify significant differences in perceptions of the quality of learning outcomes. To determine the statistically significant differences between groups, a measure of probability, or p-value, will be calculated. A p value of < .05 will indicate that there is less than 5% chance that the difference between groups does NOT reflect a real difference.

The quantitative analysis section of this study will also test the hypothesis that a high level of perceived value of MOOCs will correlate with a high level of experience and satisfaction with online courses. The variables include:

1. The independent variable is the course format (F2F, online course or degree / non-degree MOOC)
2. The dependent variable is the participant’s perceived value of the learning environment based on ratings in the survey

Since this paper is based on a research proposal assignment in the EDIT 590 course, the sections for Findings, Discussion and Conclusions will not be included.
References


Fini, A. (2009). The Technological Dimension of a Massive Open Online Course: The Case of the CCK08 Course Tools. International Review Of Research In Open And Distance Learning, 10(5),


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