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**A Comparison Between International and US Graduate  
Students' Attitudes and Experiences Using Massive Open  
Online Courses (MOOCs)**

**by**

**Omar Ibrahim Y. Asiri**

**Thesis Submitted in Partial Fulfillment of the Requirements for the  
Degree of Master of Science in Human Computer Interaction**

**Rochester Institute of Technology**

**B. Thomas Golisano College**

**of**

**Computing and Information Sciences**

**Department of Information Sciences and Technologies**

**JUNE 2014**

**Rochester Institute of Technology**  
**B. Thomas Golisano College**  
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**Computing and Information Sciences**  
**Master of Science in Human Computer Interaction**

**Thesis Approval Form**

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**Dedication**

I dedicate this work to my parents

To my wife

To my son

Who accompanied and supported me during accomplishment of my goals

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## **Abstract**

Massive Open Online Courses (MOOCs) have affected the pattern of learning in the last few years. Many studies have been conducted to investigate MOOCs' impact on the educational field. In this study, the researcher will compare international and US graduate students' attitudes and experiences when they use MOOCs as a resource for learning. The study used a mixed-method design to collect the data. Quantitative data was compiled by using 79 responses for an online survey, and qualitative data was gathered by 10 semi-structured interviews. Participants in the study were graduate students at Rochester Institute of Technology. They were divided into two groups, international graduate students and US graduate students, who represented the study population. The study finds some similarities and differences between International and US graduate students. One of the obvious similarities is that students in both groups use MOOCs to supplement their learning. Moreover, MOOCs helped students to increase their knowledge in other fields and become more confident to learn new things. There are differences in ways of using MOOCs between international and US graduate students. One of these differences is that international students may use MOOCs to enhance their English proficiency and familiarize themselves to the US educational system before coming to the US. To interpret the high ratio of the drop outs in MOOCs, the researcher believes that students are not aware of the reality of the expression "drop out" in MOOCs or they just ignore participating.

*Keywords:* international graduate students, MOOCs, US graduate students

## **Introduction**

### **Background**

People have begun to learn since birth. They build their knowledge in many ways. Additionally, the kinds and the ways of getting knowledge have not been limited to a particular pattern. From time to time, the patterns of obtaining education have changed in many ways.

For example, after the initial revolution in technology, the pattern of education changed. One of these new areas of education is distance education. Distance education has evolved through many stages since its beginning. Decades ago, the beginning stage occurred when people mailed texts to gain education. After that the radio and television became a way of getting knowledge.

In the Internet era everything has changed. People are using their computers to search for information. They are able to get information synchronously and asynchronously. Browsing the Internet has become a daily habit for most people. For that reason, educators considered creating a good way to benefit from using the Internet in their field. Hence the eLearning concept has been revealed.

After the technology revolution created an array of devices, which are used in eLearning, such as laptops, tablets, and mobile phones, getting an education has become more open and accessible for individuals. According to (Lewin, 2013), when the open educational resources (OER) concept was revealed, adapting a new approach in online education became easier, because OER idea reduced the number of rules and restrictions on open courses.

In 2012, the *New York Times* announced that 2012 is the year of MOOCs (Pappano, 2012). Exactly what are MOOCs?

Aparicio and Bacao (2013) defined Massive Open Online Courses (MOOCs) as: “Free diffusion of content courses to a global usage through the Web. Integrates the connectivity of social networking, the Facilitation of an acknowledged expert in a field of study, and a collection of freely accessible.”

MOOCs help people from all around the world to enroll in online classes free of charge to enhance their knowledge. Coursera (<https://www.coursera.org/>) and EdX (<https://www.edx.org/>) are examples of famous websites that provide hundreds of MOOCs for learners. Pappano (2012) stated that EdX had 370,000 students in its first classes, and Coursera had 1.7 million students. These numbers reflected a huge interest for students to take MOOC classes. Student demographics in MOOCs are not limited to a specific place. EdX claimed they have students from all countries around the world.

### **Research Problem**

With the current popularity of MOOCs, many new issues are exposed. One of these issues is related to students' experience and attitude with MOOCs as a resource for learning. Some students may recognize that MOOCs are a revolutionary way of online learning, while others may reject this idea. Reasons for enrollment and expectations from MOOCs vary among categories of students. The high dropout ratio is considered to be another issue that threatens MOOC. Students start MOOCs and then after several days or weeks they drop out (Clow, 2013; Group, 2013). In many cases, researchers are trying to investigate whether the dropout rate is happening with a planned intention or due to a poor experience. For example, some students just

want to learn a piece of information in a unit being delivered as a part of a MOOC class. Others are just interested in the contents of the course and whether this content look like the content of the classes they are taking on campus.

### **Importance of the Research**

The study aims to compare international graduate student and US graduate student experiences and attitudes using MOOCs. International graduate students may use MOOCs differently than other graduate students. They may have issues with language that make MOOCs less valuable to them, or they may be more focused on achieving the goals of the course. They may be more self-directed in the way they use learning resources. Moreover, there may be financial implications to their use of MOOCs.

### **Research Questions**

The main idea of conducting this research is to compare international and US graduate students' attitudes and experiences toward using MOOCs. It also will marginally investigate their information-seeking behavior while they are looking for a new way to enhance their knowledge by adapting MOOC classes. In this process, we will gather comparative data so that the international graduate student responses can be compared and contrasted with US graduate student responses. The research will investigate the following questions:

1. What do international and US graduate students expect to achieve from MOOCs?
2. Why do international and US graduate students drop out of MOOCs?
3. How do international and US graduate students behave within MOOCs?
4. What are international and US graduate students' attitudes toward MOOCs?

## **Definition**

**International student:** Kovtun (2010) defined an international student as, “An individual who holds a student visa (F1 or J1) and is authorized to engage in educational activities in the U.S., including both degree and non-degree programs.”

## **Limitations**

Participants in the study are students from Rochester Institute of Technology (RIT). Neither the researcher nor RIT has an active MOOC class; however, students should have enrolled at least in one MOOC to be eligible to participate in this study.

## **Literature Review**

A review of the literature that has been done on topics related to the study questions are presented in this chapter. The researcher divided the literature into seven sections. The first one is about the definition of information-seeking behavior and how graduate students differ in seeking this information. The second section is about the reasons students enroll in MOOCs. The third section reports what students gain from MOOCs. The fourth section is about categories of students in MOOCs. The fifth section is about issues related to student performance and interaction with MOOCs. The sixth section is about MOOC dropout issues. The last section provides some facts about participation of international students in MOOCs.

## **Information-seeking Behavior of Graduate Students**

Information-seeking behavior (ISB) has been studied for many years. The body of literature reviewed by the author has many studies that explained how and why people seek information. However, this study provides brief information about ISB, since one of the study

purposes is to investigate a possible relationship between graduate information-seeking behavior and their behavior when they choose to enroll in MOOCs.

### **What is information-seeking behavior?**

Wilson described information seeking behavior as:

Information Seeking Behavior is the purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems (such as a newspaper or a library), or with computer-based systems (such as the World Wide Web) (2000).

Case described information-seeking behavior as “a conscious effort to acquire information in response to a need or gap in your knowledge” (2012).

### **What is different in graduate student information-seeking behavior?**

Many studies have been conducted revealing that graduate students have different ways of seeking information. Lee and Tsai (2011) claimed that graduate students have a higher level of capability and interest in Internet-based learning rather than the face-to-face learning. For search behavior, Kodagoda, Wong, and Khan (2010) stated that highly literate users tend to scan, while others with lower literacy rates tend to read. George et al. (2006) stated that graduate students prefer online resources and rely heavily on Internet. Moreover, graduate students value the Internet because of its power searching for information. George et al. reported that the graduate students' information use differs depending on many factors, such as student's major and level of study (masters, doctoral). They also found that information-seeking behavior of graduate students is more refined and organized because they are more knowledgeable in their research fields.



## **Why do Students Enroll in MOOCs?**

A question was raised about why students are drawn to enroll in MOOCs. Many studies have investigated the reasons that led students to register in MOOCs. The University of Edinburgh launched six different MOOCs in January 2013. The university reported that most students stated they enrolled in its MOOCs to experience the online learning, gain new knowledge, get a certificate, or improve their career (Group, 2013). Studies claimed that student curiosity is a popular reason reflecting a high enrollment percentage in MOOCs (Kay, Reimann, Diebold, & Kummerfeld, 2013; Seaton, Bergner, Chuang, Mitros, & Pritchard, 2014).

Some students may enroll in MOOCs since there are no prerequisites classes that they need to take prior enrollment (Vail, 2013). Although Vail is a university professor, he joined a MOOC to investigate the course from the student's perspective. Blake (2013) claimed that a benefit of MOOCs is getting college experience. Another reason to choose MOOCs is that MOOCs' classes, in most cases, have knowledgeable, well prepared, and organized instructors (B. Wilson et al., 2013). These characteristics are usually found in MOOC professors due to their expertise. Adamopoulos (2013) claimed that there are some students who choose a specific MOOC because it is offered by a prestigious, highly ranked university or a well-known professor. Wilson et al. (2013) stated that some students may seek advanced levels of classes in MOOCs because these classes are not offered at their colleges.

One MOOCs feature is these classes are open to access from everywhere. This feature helps students with physical disabilities attend courses and increase their knowledge without the need to travel (B. Wilson et al., 2013).

One obvious reason students are joining MOOC classes is because most classes are free or low cost (Chen, Barnett, & Stephens, 2013; B. Wilson et al., 2013). Because university courses are costly and have, in some cases, low quality content, students are attracted to enroll in MOOCs which, on the other hand, have high quality content with no or minimal cost (Chen et al., 2013).

Students in MOOC are free to take any course at any university, which helps them to broaden their knowledge and help them personalize their learning (Cooper & Sahami, 2013).

Reasons for taking MOOCs may vary according to the country where the learners are living. According to Christensen et al. (2013), “Students from the U.S. were less likely to enroll in courses to enhance their skills for a job or for a degree and more likely than students from BRIC and other developing countries to take courses for curiosity.”

### **What do Students Get From MOOCs?**

Champaign et al. (2014) conducted a study to explore the correlation between student skills and improvements in two MOOCs. They stated, “the wide distribution of demographics and initial skill in MOOCs challenges us to isolate the habits of learning and resource use that correlate with learning for different students.” However, Champaign et al. concluded their study by stating that:

The wide diversity of MOOCs can likely be turned to an advantage when controlled educational experiments are done. Under these circumstances it will be possible to compare the learning due to two different resources or pedagogical approaches across a wider spectrum (2014).

Students may use MOOCs as a supplemental method to improve their educational achievement. Fox (2013) reported that students at San Jose State University in California

achieved five points in their first exam and 10 points in the second after taking “Analog Circuits MOOC” along with their on-campus class. Fox claimed that by applying this method students saved more in-class time and invested it discussing the problems and solution during class.

One potential benefit of MOOCs is helping students enhance their writing ability by actively participating in discussion forums or any component that requires writing skill (Comer, n.d.). Comer, in his paper, suggested that because students deal with other opinions and arguments they better understand other people's opinions.

MOOCs have increased the selection of courses available online. This action increases the probability of preparing students before enrolling in college classes. Marshall (2013) studied the benefits of online courses in increasing student success in obtaining a computer science degree. Marshall suggested that taking online courses prior undergraduate studies helped students be successful in their undergraduate classes. He also stated that those students had a better learning experience than those who had not tried online courses before college enrollment.

### **Classifications of Students in MOOCs**

Students’ activities and behavior in MOOCs are reasons that determine whether students will continue participating or not. Understanding the students’ types help to recognize the reasons behind the enrollment, completion, and dropping out of MOOCs.

As student activity varies in MOOCs, Phil (2013) classified students in five categories based on their behavior during the course:

1. No-shows: Learners who register for the course but never show up while the course is still active.

2. Observers: Learners who do not take any form of assessment while they log in except in-video quizzes. They may read the content or browse discussion forums.
3. Drop-ins: Learners who participate in some of the activities for a selective topic inside the course. Learners in this category have no intention of completing the course. Some of them may enter the course to use some of the materials to fulfill their goals in other courses (such as college courses).
4. Passive Participants: Learners who take the course to increase their knowledge. They interact with MOOCs components except completing the assignments.
5. Active Participants: Learners who interact actively with all MOOCs components. They intend to participate in discussion forums. They also do the majority of assignments and all quizzes.

Wilkowski, Deutsch, and Russell (2014) classified students in four categories based on the student intentions to interact with the courses. The four categories are:

1. No-shows: Students who register for the course then never log in.
2. Observers: Students who register because they are curious about the online courses and want to see how they are taught.
3. Casual Learners: Students who enroll to learn several things either related to their college classes or out of curiosity.
4. Completers: Students who complete as many as necessary from the course materials to obtain a certificate of completion.

The previous categories provided a classification for students' activities based on their behavior while they were enrolling in MOOCs. The categories also classified students' intention

to interact with MOOCs. These categories help to have insight to the potential reasons for enrolling, completing, and dropping out of MOOCs by recognizing the class of the student. Moreover, these categories may help to interpret why students are interacting with specific components in MOOCs and ignore other.

### **Student Performance and Interaction With MOOCs**

Due to the high number of learners in MOOCs and the diversity in their regions and countries, researchers assumed that the navigation behavior for the MOOCs seeker should not be similar. Thus, Guo and Reinecke (2014) analyzed student activities in four of edX's MOOCs. They found that students who earn a certificate skipped over 22% of the course content. They also found that students employed non-linear navigation while enrolling in MOOCs. Guo and Reinecke reported that students from countries with lower student-teacher ratios and older students are more comprehensive and non-linear when they navigated in MOOCs. They found that older students cover more materials and repeated video lectures more than younger students. Moreover, students from countries with lower student-teacher ratios cover more content than those from countries that have higher students-teacher ratios. Students from higher student-teacher ratio countries not only cover less content but also behave more linearly while proceeding through the course materials. According to Guo and Reinecke (2014), the country of origin and age have significant effects on the amount of content that certificate earners covered when they enrolled in a MOOC.

Nesterko et al. (2014) studied ten different MOOCs that were offered on HarvardX and MITx. They found that student performance is better when MOOCs' graded components have a

restricted due date. Nesterko et al. also claimed that these courses have a higher percentage of certificate earners.

Completion rate of MOOCs is also limited. Kay, Reimann, Diebold, and Kummerfeld (2013) reported that student passing rate is usually 5-10%. MOOC@Edinburgh group (2013) reported that only 21% of active students had been awarded a statement of accomplishment from all six MOOCs that were offered by the University of Edinburgh.

Each student prefers to interact with particular components of MOOCs. Some students may prefer video lectures, other may prefer discussion forums. Vail (2013) stated that he was enjoying video lectures when he joined “An Introduction to Operations Management” MOOC. Although he taught this course for decades, he found that videos were informative and interesting. Vail stated that the immediate feedback that he was given was very helpful.

Students in a MOOC may not fully interact with all of the MOOC components. Grainger (2013) stated that 60-80% of active students primarily watched or downloaded lecture videos. Kim et al. (2014) claimed that students in MOOC were selectively choosing part of the videos to watch. Moreover, Seaton, Bergner, Chuang, Mitros, and Pritchard (2014) reported that most visited components in MOOCs were video lectures and homework assignments. For the discussion forums engagement, Grainger (2013) mentioned that about only 4% of active students were participating in discussion forums. MOOC@Edinburgh group (2013) reported that throughout all Universities of Edinburgh courses, only 15% of the total active students were participating in discussion forums.

Newman and Oh (2014) reported that most MOOC students already have a college degree. They explained that student engagement and the number of materials covered increased

according to the level of study. They stated that students who have PhD and master's degrees covered all the course content.

The overall student experience with MOOC reflects that students enjoy being part of MOOC even if they did not complete it. Grainger (2013) stated in his report that 66% of participants rated their experience as "Good", and 44% rated their experience as "Fair". The rating scale had the choices "Poor", "Fair", "Good", "Very good", or "Excellent".

MOOC@Edinburgh group (2013) reported that 98% of participants in the University of Edinburgh's MOOCs were satisfied and said that the courses met their expectations.

Although previous research pointed out that students are satisfied with MOOCs, they faced challenges and needed some skills while they were enrolled in MOOCs. Kay, Reimann, Diebold, and Kummerfeld (2013) indicated that students in MOOCs should be self-guided and self-regulated.

### **MOOCs Dropout Issues**

Although MOOCs are attractive to students, there are issues with their completion rate. Some questions were raised about student success while in most cases they were entering the course for curiosity or with the intention to quit.

Course engagement usually declined after the first one-to-two weeks (Perna et al., 2013). MOOCs workload, number of homework assignments, number of quizzes, and instructional approach are the reasons that determined whether the students will continue or not. These reasons play an important role in students' engagement (Grainger, 2013; Perna et al., 2013). Belanger and Thornton (2013) reported that patience, flexibility, and resilience on the part of the instructor are some of the reasons that make students successful and not drop out of MOOCs.

Belanger and Thornton also stated that time limits and lack of the essential course background are common reasons that students quit the course.

Levy (2007) stated in his study that student satisfaction with the e-learning course is a key factor that determines whether the student will continue in the course or will drop out.

Students who enroll in MOOCs have many reasons that lead them to drop out of a course.

Adamopoulos (2013) stated five of these reasons:

Decision of a student to drop a course is affected by the student course evaluation (e.g. evaluation of the professor from individual student), the course characteristics (e.g. difficulty, academic discipline), university characteristics (e.g. university ranking), platform characteristics (e.g. platform usability), and student characteristics (e.g. gender).

Adamopoulos, in his research, emphasized that MOOC professors have the most positive effect in contributing to predicting the probability of students' successful course completion.

Although most MOOCs have no more than a 13% completion rate (Jordan, n.d.), many researchers believe that is not a good reason to judge MOOCs. Kolowich (2014) indicated in his article that we cannot compare MOOCs' completion rates with traditional courses. According to his interview with Andrew Dean Ho, an associate professor at Harvard, some students in MOOCs have no intention to complete the course. In addition, some instructors do not emphasize completing them.

Kim et al. (2014) investigated in-video dropouts, and they found that the higher percentage of drop out is associated with longer videos, re-watching sessions, and tutorials. Kim et al. stated that student engagement declines significantly with longer videos. With re-watching sessions, students may have a specific need for information that needs to be re-watched, so the dropout rate is higher than the first time the video was watched. Also, when we compare lecture videos and tutorial videos, tutorial videos have a higher dropout percentage (Kim et al., 2014).



## **International Students and MOOCs**

International students represent a definite presence in MOOCs. MOOCs population usually have more than 50% of students are from outside of the US (Group, 2013; Nesterko et al., 2013). Although the majority of students are not American, Nesterko et al. stated that among the top six countries that have a large number of students, English speakers represent more than 50% of the population in all six countries. The other four countries have a significant number of English speakers. Nesterko et al. (2013) indicated that the international students earn certificates at a higher rate than US students. Moreover, international students, on average, are more serious in their studies than American students. Christensen et al. (2013) claimed that international students, especially from developing countries, are more interested in business and social science fields in MOOCs, which help them use the knowledge to support their current jobs.

Haynie (2013) reported five reasons that international students, who plan to come to the USA, should consider before enrolling in MOOCs. One of these reasons is that MOOCs help international students who want to study in the US assess their college readiness. Additionally, MOOCs reduce international students' expenses so they may spend their money on other learning resources.

## **Summary**

The review of the literature provides an overview of the studies that are related to this research scope. Starting by reviewing some studies that are related to the information seeking behavior, the researcher included this section to provide a brief information about why graduate students are seeking the resources of knowledge such as MOOCs from the perspective of

information seeking behavior. Moreover, the section provides some of the graduate students' characteristics when they seek online resources.

The second section of the review illustrates potential reasons that lead students to enroll in MOOCs. The researcher wanted to investigate whether graduate students have the same or different reasons for enrollment. For example, MOOC@Edinburgh group (2013) claimed that one of the reasons that attracted students to enroll in MOOCs is because students are curious about online learning. The researcher thinks that graduate students may have unique reasons to enroll in MOOCs but curiosity is not one of them. While previous studies provided several reasons for enrollment, none of them suggested that graduate students may have different reasons for enrollment.

Since students' achievements from MOOCs are also point of interest in this research, several studies were reviewed to have insight about what the expected achievement is. Using MOOCs as a supplemental tool for students' education is a key point about what students may get after enrolling in MOOCs. Although previous studies such as Fox (2013) and Marshall (2013) indicated that MOOCs help student to prepare themselves for college classes and supplement their learning, the researcher is wondering whether these benefits are applicable for graduate students or not, and whether the result will be different according to nationality of student or not. For example, the researcher believes that international graduate students who plan to study in the USA may have different achievements in MOOCs than US graduate students.

Students' classifications were also reviewed in the literature to provide insight about categories of students in MOOCs according to their activities when they intended to enroll and while they are enrolling. The research indicates these categories to find out whether international

graduate students and US graduate students have different activities and intentions when they enroll in MOOCs or not. Also examines whether international and US graduate students interact differently with MOOCs components.

The literature also reviews some studies that are related to students' performance and interaction with MOOCs. Guo and Reinecke (2014) claim that students who earn certificates skipped over 22% of the course content. The researcher wants to investigate whether international and US graduate students have the same phenomenon or not. Guo and Reinecke also reported that country of origin and age affects the amount of material covered in MOOCs. In this study, the researcher wants to investigate whether the country of origin for graduate students affects their performance or not. The literature reviews other aspects in students' performance and interaction such as the way of navigation, and interacting with MOOCs components.

One literature review section illustrates several studies about the drop out issue. Reasons such as course engagement, workload, number of homework assignments, number of quizzes, and instructional approach were claimed to be the potential reasons behind the decrease of course completion rate in MOOCs. In addition, Kolowich (2014) claimed that some students in MOOCs have no intention to complete the course. In this study, the researcher wants to explore whether international and US graduate students have the same reasons for dropping out MOOCs or not. Moreover, the study aims to investigate if there are different reasons to drop out between international and US graduate students. Furthermore, whether international and US graduate students have intentions to complete the course or not.

The last section of the literature review specifies some studies that are related to international students outside the USA, specifically those students who plan to come to USA for

educational purposes. Haynie (2013) claims that students who plan to come to the USA can assess their college readiness by enrolling in MOOCs. Moreover, MOOCs can help those students to save some money and spend it in other learning resources. The researcher in this study aims to investigate whether international graduate students have similar reasons to enroll in MOOCs or they have another perspective. Furthermore explore whether the international graduate students have unique reasons for enrollment in MOOCs.

All in all, although previous studies provides reasons for enrollment, dropping out, students' performance, and students' achievements, none of them investigated whether there are differences between international graduate students and US graduate students. The research aims to explore the differences between these groups and highlight the findings to make contributions to the body of MOOCs literature.

## **Methods**

The purpose of this chapter is to describe and discuss methods used in this study. This chapter has the following sections: introduction, research design, setting, participants, instrumentations, data collection procedure, and data analysis.

The researcher aimed to compare international and US graduate student experiences and attitudes using MOOCs. The researcher chose to compare US students with international students for several reasons; one of them is that international students come from different cultures with different languages, which might cause a different use for MOOCs.

Some international students are preparing themselves before coming to study in the US. One preparation method is looking through available resources on the Internet. MOOCs are considered a great opportunity that assists international students all around the world.

The research addressed the following questions:

1. What do international and US students expect to achieve from MOOCs?
2. Why do international and US students drop out of MOOCs?
3. How do international and US students behave within MOOCs?
4. What are international and US student attitudes toward MOOCs?

### **Research Design**

Since the study addresses the previous questions, the researcher decided to use mixed methods design to strengthen the study findings. The study started with a quantitative method—an online survey—followed by a qualitative method—semi-structured interviews. The research had two groups, international and US graduate students.

### **Setting**

The study took place at RIT. RIT is located in Rochester, NY. Participation in the study was open to all graduate students who were currently studying at RIT. For the quantitative part, students participated in the online survey via their mobile devices, after accepting the invitation to participate, which that was sent via Graduate Students Office. The interviews were took place in quiet study rooms at RIT library.

## Participants

The total number of participants was 89 graduate students. The study had 79 completed responses for the online survey and 10 participants in the interviews. The online survey had 43 international graduate students and 36 US graduate students. The interviews had 5 international graduate students and 5 US graduate students. Participants were from the following fields of graduate programs at RIT:

- Art, Crafts, Design, and Graphic Communications
- Business, Management, and Communication
- Computing and Information Sciences
- Engineering and Engineering Technology
- Health Sciences
- Multidisciplinary
- Science, Mathematics, and Imaging Science
- Social Sciences, Humanities, and Education
- Sustainability

Participants were graduate students at RIT who are studying either for their master's degree or PhD. The study had participants from both genders. All participants have experienced MOOCs at least one time.

## **Human Subject Clearance**

In accordance with RIT policies, permission to conduct the study was obtained from the Institutional Review Board (IRB) prior to collecting any research data. The permission was for both the qualitative and quantitative data.

## **Instrumentation**

The study used two different instruments, since the research had two different methods. The first instrument was the online survey, which was designed and delivered using a commercial online tool called Survey Gizmo. The survey consisted of 19 questions divided into 7 major parts. The first part (Q1-Q5) was to collect demographic data about participants. The second part (Q6-Q14) was designed to collect data about previous experiences of participants with MOOCs. The third part (Q15) was designed to collect data about students' achievements after taking MOOCs. The fourth part (Q16) was designed to collect data about the potential reasons that students dropped out of MOOCs. The fifth part (Q17) was designed to collect data about student behaviors when they took MOOCs. The sixth part (Q18) was designed to collect data about student attitudes toward MOOCs. The seventh and last part (Q19) was an open-ended question to give participants the opportunity to express their opinions about the study topic or ask questions. A copy of the survey questions is attached in the appendix.

In the qualitative method, the researcher used a semi-structured interview to collect the data from participants. The interview consisted of 16 questions used to guide the interview sessions. A copy of the interview questions is attached in the appendix.

## **Data Collection Procedures**

Since the study had a mixed-method design, the data collection procedure had two stages. The first was collecting quantitative data by the online survey. The second stage was collecting qualitative data, both of which were compiled after receiving IRB approval.

### **Collecting quantitative data.**

Participants in the online survey were recruited via email sent to all graduate students in RIT through the Office of Graduate Studies. Before starting the survey, participants were asked to provide their consent to be part of the study. Participants had the chance to enter a drawing to win one of four gift cards, each one with a value of \$50. The online survey opened on April 22, 2014, and closed on April 29, 2014. The drawing was on April 30, 2014, and the winners were contacted via email to send to them the gift cards.

### **Collecting qualitative data.**

Participants for the interviews were recruited through flyers that were distributed in all campus buildings. The interviews took place at the, RIT library between May 2, 2014 and May 12, 2014. All interviews were conducted in a quiet study room reserved through the library system to insure privacy and offer a good environment for the interviewee. In the beginning of each interview, a consent form was given to the participant to sign, giving permission to record the interview. The consent form informed participants about their rights and insured that their participation was voluntarily and confidential. The interview duration varied depending on the student experience with MOOCs. The average time for the interview was 30 minutes. At the end of each interview, participants were given a gift card of \$15 as compensation for their participation.



## **Data Analysis**

Since this study used mixed-methods data, quantitative and qualitative results were analyzed separately and then combined together in the results section.

### **Analysis of quantitative data.**

Data was collected in the online survey using an online tool called Survey Gizmo. When the online survey closed, data was exported into the Statistical Package for Social Sciences (SPSS), version 22. Data was analyzed according to the type of question in the survey. The results were described using both descriptive and inferential statistics. An independent sample *t*-test was conducted to compare the differences in means between the groups and identify whether there was a statistical significance between group results. In all tests for statistical significance, the level of significance was  $\alpha = 0.05$  and the confidence interval was set at 95%.

Since the study had multiple testing that refer to the potential of increase in type I error, the researcher decided to report effect size along with setting level of significance to  $\alpha = 0.05$ . The researcher thought this procedure helps to deal with the potential increase of type I error that may occur due to conducting many tests of significance.

Effect size, which Coe described as “a way of quantifying the size of the difference between two groups” (2002), also was reported in test significance using Cohen’s *d*.

### **Analysis of qualitative data.**

The collected data were transcribed and then divided into several themes that matched with the research purposes. To insure a limited number of themes, the data was coded in themes and issues that reflect the research questions. Some quotes were used in the results section where

appropriate. Data from the qualitative method were compared with data from quantitative method to determine if there is any corroboration.

## **Results**

This chapter illustrates the research findings in both the quantitative and qualitative data results. Findings are divided into two sections. The first section reflects the quantitative results, and the second section presents the qualitative results.

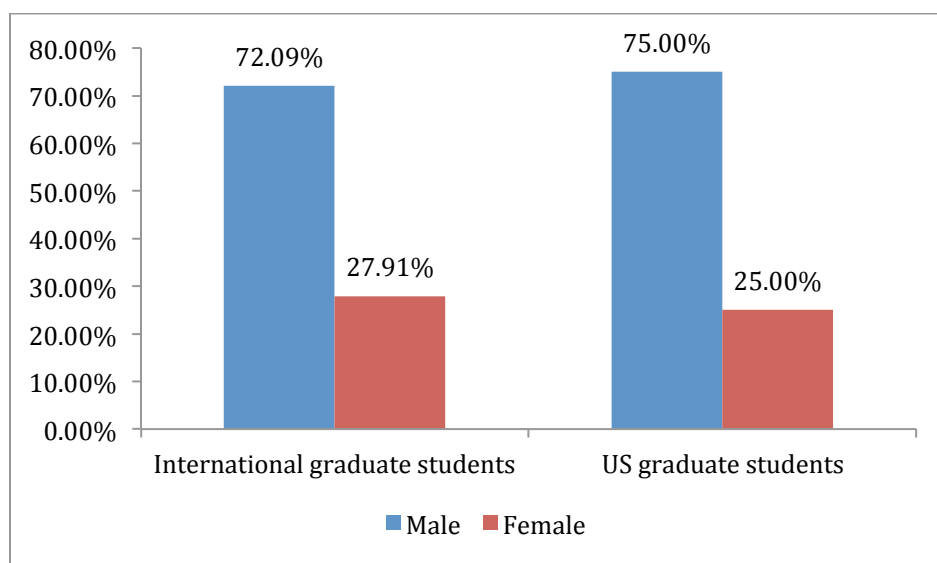
### **Quantitative Results**

#### **Demographics and background.**

The quantitative part of the study had 79 valid responses divided into two groups. An international graduate group had 43 (54.43%) students, and a US graduate group had 36 (45.57%) students.

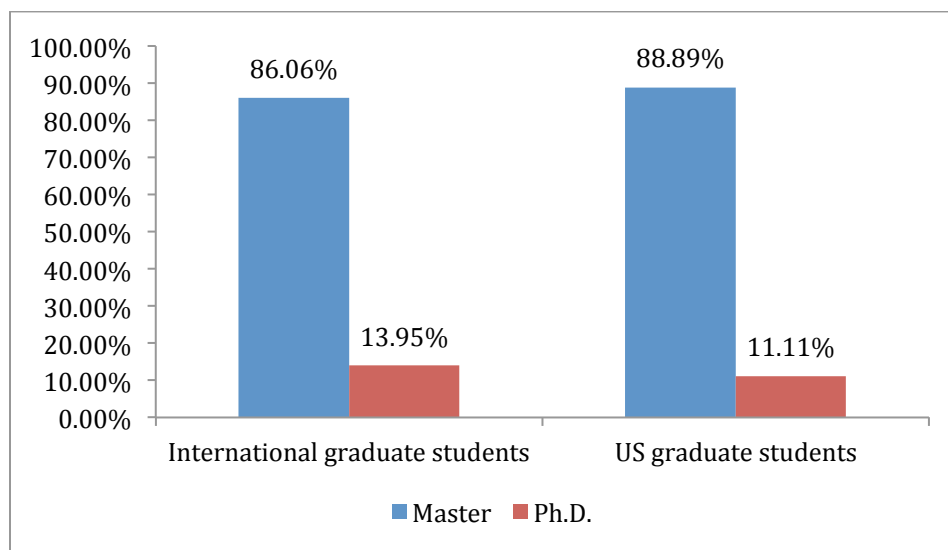
The study participant demographics included both males and females. The international graduate group had 31 (72.09%) male participants and 12 (27.91%) female participants. The US graduate group had 27 (75%) male participants and 9 (25%) female participants. Figure 1 shows gender distribution among the groups.

Figure 1. Gender Distribution Among Groups



Considering the level of academic study, the international graduate group had 37 (86.05%) master's students and 6 (13.95%) PhD students. The US graduate group had 32 (88.89%) master's students and 4 (11.11%) PhD students. Figure 2 illustrates the distribution of participants according to their levels of academic study.

Figure 2. Level of Academic Study Distribution Among the Groups



Participants in the study were from diverse backgrounds. The majority of participants in the international graduate group were from computing and engineering fields (46.51% and 27.91% respectively). In the US graduate group, the distribution of majors shows that the majority of students were from computing and engineering fields (30.56% and 27.78% respectively). Table 1 presents all categories of academic study in detail:

Table 1

## Field of Study Distribution for International and US Students

Which of the following best represents your primary field of education?	International students		US students	
	N (43)	%	N (36)	%
Art, Crafts, Design, and Graphic Communications	1	2.33%	1	2.78%
Business, Management, and Communication	1	2.33%	4	11.11%
Computing and Information Sciences	20	46.51%	11	30.56%
Engineering and Engineering Technology	12	27.91%	10	27.78%
Health Sciences	1	2.33%	0	0.00%
Multidisciplinary	0	0.00%	3	8.33%
Science, Mathematics, and Imaging Science	5	11.63%	4	11.11%
Social Sciences, Humanities, and Education	2	4.65%	3	8.33%
Sustainability	1	2.33%	0	0.00%

From the study questionnaire, participants were divided into four age categories. The first was (20-24); the second category was (25-29); the third was (30-34), and the fourth was (older than 35). Table 2 reflects participant age distribution among all categories. It can be clearly seen

that the majority of students, both international and US, are located in the (20-24) and (25-29) categories. Table 2 presents age distribution:

Table 2  
Age Distribution Among the Groups

How old are you?	International students		US students	
	N (43)	%	N (36)	%
20-24	17	39.53%	21	58.33%
25-29	17	39.53%	12	33.33%
30-34	6	13.95%	0	0.00%
older than 35	3	6.98%	3	8.33%

While the resources of obtaining the information are different, Table 3 illustrates in detail how international and US graduate students heard about MOOCs. Students were able to choose more than one answer in responding to this question.

Table 3  
How Participants Know About MOOCs

How did you hear about MOOCs?	International students		US students	
	N (43)	%	N (36)	%
Friends	25	58.14%	15	41.67%
Social networks	19	44.19%	11	30.56%
Blogs	9	20.93%	12	33.33%
News articles/press coverage	9	20.93%	12	33.33%
Search engines	15	34.88%	10	27.78%
Other	6	13.95%	12	33.33%

From the variety of MOOC providers, the research questionnaire focused on three popular providers— Coursera, EdX, and Udacity. With the possibility of students choosing more than one answer, the research results show that the majority of students experienced MOOCs through Coursera. The results illustrate that 86.05% of the international graduate students and 75% of the US students were experienced MOOCs with Coursera. In (other) choices students indicated other providers such as MIT Open Courseware, iTunes University, iversity, and NPTEL Academy. Table 4 summarizes participant experiences with MOOCs providers:

Table 4

Where did Participants Enroll?

I experienced MOOCs in	International students		US students	
	N (43)	%	N (36)	%
Coursera	37	86.05%	27	75.00%
EdX	11	25.58%	11	30.56%
Udacity	6	13.95%	12	33.33%
Other	7	16.28%	3	8.33%

Participants in the study were asked to indicate the number of MOOCs in which they have enrolled. The range of MOOCs that international graduate students had is 15 MOOCs ( $M = 3.12$ ,  $SD = 2.81$ ), while the range of US graduate students was 9 MOOCs ( $M = 2.92$ ,  $SD = 2.86$ ). Table 5 presents findings about the number of MOOCs in which students enrolled:

Table 5  
Number of MOOCs in Which Participants Have Enrolled

How many MOOCs have you enrolled in?	International students	US students
	N (43)	N (36)
Mean	3.12	2.92
Mode	2	1
Std. Deviation	2.81	2.86
Minimum	1	1
Maximum	16	10
Range	15	9

Participants in the study were asked to indicate the number of MOOCs in which they are currently enrolled. International graduate students have a range of 5 MOOCs ( $M = 1.21$ ,  $SD = 1.08$ ), while US students have a range of 3 MOOCs ( $M = .69$ ,  $SD = .98$ ). Table 6 presents the findings of this question:

Table 6  
Number of MOOCs in Which Participants are Currently Enrolled

How many MOOCs are you currently enrolled in?	International students	US students
	N (43)	N (36)
Mean	1.21	.69
Mode	1	0
Std. Deviation	1.08	.98
Minimum	0	0
Maximum	5	3
Range	5	3

One of the questions asked participants about the number of statements of course accomplishment or completion that they may have received. The results indicate that the majority of both international and US graduate students had not obtained any statement of accomplishment or certificate of completion (60.47% and 80.56% respectively). Table 7 summarizes student responses:

Table 7

## Number of Certificates that Participants Have

From MOOCs in which you have enrolled, how many certificates of accomplishment or signature track certificates do you have?	International students		US students	
	N (43)	%	N (36)	%
0	26	60.47%	29	80.56%
1	13	30.23%	4	11.11%
2	3	6.98%	0	0.00%
3	0	0.00%	0	0.00%
More than 3	1	2.33%	3	8.33%

Table 8 summarizes participants' answers about the number of times they have dropped out of MOOCs. As it illustrates in the table, more than 50% of students in both groups had not dropped out of MOOCs.



Table 8

## Number of Students Dropping Out of MOOCs

How many times you have dropped out of MOOCs?	International students		US students	
	N (43)	%	N (36)	%
Never	24	55.81%	19	52.78%
1	8	18.60%	4	11.11%
2	7	16.28%	7	19.44%
3	2	4.65%	3	8.33%
More than 3	2	4.65%	3	8.33%

In the relationship between numbers of certificates earned and times of experiencing drop out, international graduate students have a lower dropout ratio (26.87%) than US graduate students (37.14%). In addition, international graduate students have a higher ratio of certificate achievement (17.16%) than US graduate students (7.62%). Table 9 presents the percentages of the relationship between numbers of certificates earned and dropout.

Table 9

## Percentage of Certificates Earned and Dropout Numbers for Both Groups

	Number of MOOCs enrolled	Number of certificates earned		Number of dropouts	
		N	%	N	%
International students	134	23	17.16%	36	26.87%
US students	105	8	7.62%	39	37.14%

### **Importance of MOOC components.**

Participants were asked to rate the importance of six MOOC components. Each component was ranked 1-5, with 1 = “Unimportant”, 2 = “Of Little Importance”, 3 = “Moderately Important”, 4 = “Important”, and 5 = “Very Important”.

Results show that international graduate students rated video lectures, on average, as “very important” ( $M = 4.44$ ,  $SD = .83$ ), while the US graduate students rated the video lectures, on average, as “important” ( $M = 4$ ,  $SD = .86$ ). An independent-sample t- test shows that the difference between international graduate students and US graduate students is statistically significant,  $t(77) = 2.32$ ,  $p = .023$  and represents a medium-sized effect  $d = .52$ .

When students were asked to rate the importance of lecture slides, results shows that international graduate students rated lecture slides on average as “important” ( $M = 4.07$ ,  $SD = 1.01$ ), and the US graduate students also rated the lecture slides on average as “important” ( $M = 4$ ,  $SD = .96$ ). An independent-sample t- test shows that the difference between international graduate students and US graduate students is not statistically significant,  $t(77) = .31$ ,  $p = .755$ ,  $d = .07$ .

Regarding the importance of associated journal resources and articles, results show that international graduate students rated associated journal resources and article, on average, as “important” ( $M = 3.67$ ,  $SD = .94$ ), while US graduate students rated associated journal resources and articles, on average, as “of little importance” ( $M = 3$ ,  $SD = .63$ ). An independent-sample t- test shows that the difference between international graduate students and US graduate students is statistically significant,  $t(77) = 3.65$ ,  $p = .001$  and represents a large-sized effect  $d = .83$ .

To investigate the importance of discussion forums in MOOCs, students were asked to rate this component. Results show that international graduate students rated discussion forums, on average, as “moderately important” ( $M = 3.33$ ,  $SD = 1.11$ ), and US graduate students also rated discussion forums, on average, as “moderately important” ( $M = 3.08$ ,  $SD = 1.08$ ). An independent-sample t- test shows that the difference between international graduate students and US graduate students is not statistically significant,  $t(77) = .98$ ,  $p = .33$ ,  $d = .23$ .

For quiz importance, results showed that international graduate students rated quiz importance, on average, as “important” ( $M = 3.93$ ,  $SD = 1.06$ ); similarly, the US graduate students rated quiz importance, on average, as “important” ( $M = 3.44$ ,  $SD = .77$ ). However, an independent-sample t-test shows that there is a statistical difference between international graduate students and US graduate students,  $t(77) = 2.29$ ,  $p = .025$  and represents a medium-sized effect,  $d = .53$ .

When students were asked to rate the importance of peer assessment, results show that international graduate students rated peer assessment importance, on average, as “moderately important” ( $M = 3.35$ ,  $SD = 1.04$ ), while US graduate students rated peer assessment importance, on average, as “of little importance” ( $M = 2.33$ ,  $SD = .99$ ). An independent-sample t- test shows that the difference between international graduate students and US graduate students is statistically significant,  $t(77) = 4.42$ ,  $p = .001$  and represents a large-sized effect  $d = 1$ . Table 10 summarizes all findings regarding the importance of MOOC components.

Table 10

## Importance of MOOC Components

Importance MOOC components	International students			US students			t	df	Sig.	d
	N	M	SD	N	M	SD				
Video lectures	43	4.44	0.83	36	4.00	0.86	2.32	77	<b>0.023</b>	0.52
Lecture slides	43	4.07	1.01	36	4.00	0.96	0.31	77	0.755	0.07
Associated journal resources and articles	43	3.67	0.94	36	3.00	0.63	3.65	77	<b>0.001</b>	0.83
Discussion forums	43	3.33	1.11	36	3.08	1.08	0.98	77	0.33	0.23
Quizzes	43	3.93	1.06	36	3.44	0.77	2.29	77	<b>0.025</b>	0.53
Peer assessment	43	3.35	1.04	36	2.33	0.99	4.42	77	<b>0.001</b>	1.00

**Reasons for enrollment.**

The study questionnaire asked students about the reasons behind their enrollment in MOOCs. In the international graduate group, the most frequent answer was “subject area relevant to the academic study” (74.42%), followed by “personal growth” and “course offered by prestigious university” (53.49% and 41.86%, respectively). In the US graduate group, the most frequent answers were “personal growth” and “subject area relevant to the academic study” (86.11% and 63.89%, respectively). In both group results, there were a small percentage of participants who took MOOCs because of “the curiosity or without a particular educational rationale”. Table 11 summarizes these findings:

Table 11

## Reasons for Enrollment in MOOCs

Reasons for taking MOOCs	International students		US students	
	N (43)	%	N (36)	%
• Subject area relevant to my academic field of study.	32	74.42%	23	63.89%
• Obtain credentials to enhance my CV/resume.	16	37.21%	15	41.67%
• Personal growth and development.	23	53.49%	31	86.11%
• Course offered by a prestigious university.	18	41.86%	14	38.89%
• Course offered by a famous professor.	14	32.56%	12	33.33%
• Curiosity about the subject matter, without a particular educational rationale.	0	0.00%	2	5.56%
• It may help me get a job.	11	25.58%	5	13.89%
• It relates to my current responsibilities.	13	30.23%	15	41.67%

### MOOCs Disciplines and Student Academic Fields

To investigate which MOOC field of study attracted them, students were asked a question about the course(s) in which they enrolled. In the international graduate group, more than 50% of students enrolled in MOOCs in the information technology field. In the US graduate group, students indicated that most MOOCs were in information technology, mathematics, and engineering (41.67%, 38.89%, and 33.33%, respectively). Table 12 presents the findings of MOOCs' enrollment fields:

Table 12

## Student Distribution According to MOOC Offerings

What MOOC courses or field of study you have enrolled in:	International students		US students	
	N (43)	%	N (36)	%
Accounting/Finance	4	9.30%	0	0.00%
Business/Management	7	16.28%	4	11.11%
Engineering	12	27.91%	12	33.33%
Arts/Humanities	1	2.33%	0	0.00%
Environment/Sustainability	1	2.33%	0	0.00%
Information Technology/Systems	22	51.16%	15	41.67%
Language Learning	3	6.98%	0	0.00%
Legal/Law	0	0.00%	0	0.00%
Mathematics	3	6.98%	14	38.89%
Medicine/Healthcare	2	4.65%	3	8.33%
Physical Sciences	1	2.33%	6	16.67%
Social Sciences	3	6.98%	0	0.00%
Education	3	6.98%	0	0.00%
Other	4	9.30%	6	16.67%

Table 13 presents the number of MOOCs in each field that matched student majors in college. The data illustrates that most students are from computing and engineering fields. In addition, it reflects that the majority of students are taking MOOCs in engineering, information technology, and mathematics. Results indicate that students are mostly taking MOOCs related to their field of study.

Table 13

## Relationship Between Student Fields of Study and MOOC Areas

		Art, Crafts, Design, and Graphic Communications	Business, Management, and Communication	Computing and Information Sciences	Engineering and Engineering Technology	Health Sciences	Multidisciplinary	Science, Mathematics, and Imaging Science	Social Sciences, Humanities, and Education	Sustainability
Accounting/Finance	International	0	1	2	1	0	0	0	0	0
	US	0	0	0	0	0	0	0	0	0
Business/Management	International	0	1	3	2	0	0	1	0	0
	US	0	0	0	2	0	1	0	1	0
Engineering	International	0	0	2	9	0	0	1	0	0
	US	1	1	1	5	0	0	1	3	0
Arts/Humanities	International	0	0	1	0	0	0	0	0	0
	US	0	0	0	0	0	0	0	0	0
Environment/Sustainability	International	0	0	0	0	0	0	0	0	1
	US	0	0	0	0	0	0	0	0	0
Information Technology/Systems	International	1	0	18	3	0	0	0	0	0
	US	1	1	5	2	0	2	1	3	0
Language Learning	International	0	0	2	1	0	0	0	0	0

		Art, Crafts, Design, and Graphic Communications	Business, Management, and Communication	Computing and Information Sciences	Engineering and Engineering Technology	Health Sciences	Multidisciplinary	Science, Mathematics, and Imaging Science	Social Sciences, Humanities, and Education	Sustainability
	US	0	0	0	0	0	0	0	0	0
Legal/Law	International	0	0	0	0	0	0	0	0	0
	US	0	0	0	0	0	0	0	0	0
Mathematics	International	0	0	0	0	0	0	3	0	0
	US	1	1	4	2	0	0	4	2	0
Medicine/Healthcare	International	0	0	0	0	1	0	1	0	0
	US	0	0	0	2	0	1	0	0	0
Physical Sciences	International	0	0	0	0	0	0	1	0	0
	US	1	3	0	2	0	0	0	0	0
Social Sciences	International	0	1	1	0	0	0	0	1	0
	US	0	0	0	0	0	0	0	0	0
Education	International	0	0	2	0	0	0	0	1	0
	US	0	0	0	0	0	0	0	0	0
Other	International	1	0	1	0	0	0	2	0	0
	US	0	0	3	3	0	0	0	0	0



### **What did students achieve?**

To investigate achievements of students who took MOOCs, the question consisted of nine statements that asked students to provide degree of agreement about each statement. The statements were ranked 1-5, with 1 = “strongly disagree”, 2 = “disagree”, 3 = “neutral”, 4 = “agree”, and 5 = “strongly agree”.

When students were asked the statement, “I expect to perform better at my class work after taking a related MOOCs class”, results show that international graduate students tended to answer, on average, “agree” ( $M = 4.07, SD = .67$ ), and the US graduate students also tended to answer, on average, “agree” ( $M = 3.56, SD = .77$ ). However, an independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 3.56, p = .002$ , and represents a medium-sized effect  $d = .71$ .

When students were asked the statement, “Taking MOOCs have inspired me to pursue some topics further”, results show that international graduate students tended to answer, on average, “agree” ( $M = 4.19, SD = .76$ ). Likewise, the US graduate students tended to answer, on average, “agree” ( $M = 3.75, SD = .87$ ). However, an independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 2.37, p = .021$ , and represents a medium-sized effect  $d = .54$ .

When students were asked the statement, “Taking MOOCs made me feel more confident about learning new things”, results show that international graduate students tended to answer, on average, “agree” ( $M = 4.16, SD = .62$ ), and the US graduate students tended to answer, on average, “agree” ( $M = 3.50, SD = .91$ ). However, an independent-sample t- test shows that the

difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 3.84, p = .001$ , and represents a large-sized effect  $d = .85$ .

When students were asked the statement, “MOOCs can help me familiarize myself with US college classes”, results show that international graduate students tended to answer, on average, “agree” ( $M = 3.51, SD = 1.10$ ), and the US graduate students tended to answer, on average, “neutral” ( $M = 2.50, SD = 1$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 4.24, p = .001$ , and represents a large-sized effect  $d = .96$ .

When students were asked the statement, “Peer assessment in some MOOCs can help me to develop my evaluation skills”, results show that international graduate students tended to answer, on average, “agree” ( $M = 3.58, SD = .79$ ), while the US graduate students tended to answer, on average, “neutral” ( $M = 2.81, SD = 1.06$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 3.71, p = .001$ , and represents a large-sized effect  $d = .82$ .

Responses to the statement, “MOOCs give me an opportunity to discover areas which are not related to my academic study”, shows that the international graduate students tended to answer, on average, “agree” ( $M = 3.95, SD = .93$ ). Similarly, the US graduate students tended to answer, on average, “agree” ( $M = 4, SD = .63$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = -.26, p = .799, d = -.06$ .

Student responses to the statement, “Taking MOOCs have saved me money that I can use toward other learning resources”, shows that international graduate students tended to answer, on

average, “agree” ( $M = 4, SD = .85$ ), while the US graduate students tended to answer, on average, “agree” ( $M = 3.5, SD = 1.16$ ). Nonetheless, an independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 2.21, p = .03$ , and represents a medium-sized effect  $d = .5$ .

Responses to the statement, “I can enhance my second language proficiency by taking MOOCs in that language”, shows that the international graduate students tended to answer, on average, “agree” ( $M = 3.74, SD = 1.05$ ), while the US graduate students tended to answer, on average, “disagree” ( $M = 2.25, SD = 1.05$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 6.3, p = .001$ , and represents a large-sized effect  $d = 1.42$ .

The responses to the statement, “Taking MOOCs helped me to learn jargon from other fields” shows that the international graduate students tended to answer, on average, “agree” ( $M = 3.65, SD = 1.09$ ), while the US graduate students tended to answer, on average, “neutral” ( $M = 3.17, SD = 1.11$ ). An independent-sample t- test shows that the difference between international graduate students and US graduate students is not statistically significant,  $t(77) = 1.95, p = .05, d = .44$ . Table 14 summarizes all findings related to the statements statistics:

Table 14

## MOOCs and Student Achievements

To what extent do you agree or disagree with the following statements?	International graduate students			US graduate students			t	df	Sig.	d
	N	M	SD	N	M	SD				
A. I expect to perform better at my class work after taking a related MOOCs class.	43	4.07	0.67	36	3.56	0.77	3.17	77	<b>0.002</b>	0.71
B. Taking MOOCs have inspired me to pursue some topics further.	43	4.19	0.76	36	3.75	0.87	2.37	77	<b>0.021</b>	0.54
C. Taking MOOCs made me feel more confident about learning new things.	43	4.16	0.62	36	3.50	0.91	3.84	77	<b>0.001</b>	0.85
D. MOOCs can help me familiarize myself with US college classes.	43	3.51	1.10	36	2.50	1.00	4.24	77	<b>0.001</b>	0.96
E. Peer assessment in some MOOCs can help me to develop my evaluation skills.	43	3.58	0.79	36	2.81	1.06	3.71	77	<b>0.001</b>	0.82
F. MOOCs give me an opportunity to discover areas which are not related to my academic study.	43	3.95	0.93	36	4.00	0.63	-0.26	77	0.799	-0.06
G. Taking MOOCs have saved me money that I can use toward other learning resources.	43	4.00	0.85	36	3.50	1.16	2.21	77	<b>0.03</b>	0.50
H. I can enhance my second language proficiency by taking MOOCs in that language.	43	3.74	1.05	36	2.25	1.05	6.30	77	<b>0.001</b>	1.42
I. Taking MOOCs helped me to learn jargon from other fields.	43	3.65	1.09	36	3.17	1.11	1.95	77	0.054	0.44

### Why do Students Drop Out?

One of the study goals is to investigate the potential reasons that students drop MOOC courses. A question consisted of six statements asked students about their degree of agreement for each statement. Statements were ranked 1-5, with 1 = “strongly disagree”, 2 = “disagree”, 3 = “neutral”, 4 = “agree”, and 5 = “strongly agree”. Following are the findings of this question:

When students were asked the statement, “MOOCs' length plays a role in my decision about continuing the course”, results shows that international graduate students tended to answer, on average, “agree” ( $M = 3.49, SD = .91$ ). The US graduate students also tended to answer, on average, “agree” ( $M = 3.42, SD = 1$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = .33, p = .739, d = .07$ .

The response results to the statement, “MOOCs' workload plays a role in my decision about...” shows that international graduate students tended to answer, on average, “agree” ( $M = 3.77, SD = .95$ ). Likewise, the US graduate students tended to answer, on average, “agree” ( $M = 3.75, SD = 1.13$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = .08, p = .941, d = .02$ .

Student responses to the statement, “MOOCs' difficulty plays a role in my decision about continuing the course” shows that the international graduate students tended to answer , on average, “neutral” ( $M = 3.26, SD = 1.07$ ); similarly, the US graduate students tended to answer, on average, “neutral” ( $M = 3.33, SD = 1.29$ ). An independent-sample t- test shows that the

difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = -.29, p = .771, d = -.06$ .

Response results to the statement, “I tend to drop out of a course when I am not familiar with its jargon”, shows that the international graduate students tended to answer, on average, “neutral” ( $M = 2.88, SD = 1.12$ ), whereas the US graduate students tended to answer, on average, “disagree” ( $M = 2.58, SD = 1$ ). An independent-sample t- test indicates that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = 1.25, p = .215, d = .28$ .

Student responses to the statement, “I enroll in a MOOC for a specific information, and I drop out as soon as I get it”, shows that the international graduate students tended to answer, on average, “neutral” ( $M = 2.65, SD = 1.21$ ), while the US graduate students tended to answer, on average, “disagree” ( $M = 2.53, SD = 1.25$ ). An independent-sample t- test indicates that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = .44, p = .659, d = .10$ .

Responses to the statement, “When I lost interest, I dropped out MOOCs class”, shows that the international graduate students tended to answer, on average, “neutral” ( $M = 3.35, SD = 1.25$ ). Likewise, the US graduate students tended to answer, on average, “neutral” ( $M = 3.17, SD = 1.25$ ). An independent-sample t- test indicates that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = .64, p = .522, d = .14$ . Table 15 summarizes all findings related to the statements statistics:

Table 15

## Potential Reasons for Dropping a MOOC

To what extent do you agree or disagree with the following statements?	International graduate students			US graduate students			t	df	Sig.	d
	N	M	SD	N	M	SD				
A. MOOCs' length plays a role in my decision about continuing the course.	43	3.49	0.91	36	3.42	1.00	0.33	77	0.739	0.07
B. MOOCs' workload plays a role in my decision about continuing the course.	43	3.77	0.95	36	3.75	1.13	0.08	77	0.941	0.02
C. MOOCs' difficulty plays a role in my decision about continuing the course.	43	3.26	1.07	36	3.33	1.29	-0.29	77	0.771	0.06
D. I tend to drop out of a course when I am not familiar with its jargon.	43	2.88	1.12	36	2.58	1.00	1.25	77	0.215	0.28
E. I enroll in a MOOC for specific information, and I drop out as soon as I get it.	43	2.65	1.21	36	2.53	1.25	0.44	77	0.659	0.10
F. When I lose interest, I drop out MOOC class.	43	3.35	1.25	36	3.17	1.25	0.64	77	0.522	0.14

### Student Behaviors in MOOCs.

To investigate student behaviors in MOOCs, a question consisting of 11 statements was asked of students to provide their degree of agreement about each statement. The statements were ranked 1-5, with 1 = “strongly disagree”, 2 = “disagree”, 3 = “neutral”, 4 = “agree”, and 5 = “strongly agree”. Following are the findings of this question:

Responses to the statement, “I am taking MOOCs classes as seriously as my degree classes”, show that the international graduate students tended to answer, on average, “neutral” ( $M = 2.95, SD = 1$ ), while the US graduate students tended to answer, on average, “disagree” ( $M = 2.47, SD = 1.32$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = 1.84, p = .069, d = .41$ .

Student responses to the statement, “When I enroll in a MOOC, I intend to complete all components of the course”, show that international graduate students tended to answer, on average, “agree” ( $M = 3.53, SD = 1.05$ ), and the US graduate students tended to answer, on average, “agree” ( $M = 3.5, SD = .81$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = .16, p = .871, d = .3$ .

When students were asked the question, “While I was taking a MOOC class, I followed the sequence of the course materials one by one”, results show that international graduate students tended to answer, on average, “agree” ( $M = 3.81, SD = 1.03$ ), and the US graduate students tended to answer, on average, “agree” ( $M = 4, SD = .48$ ). An independent-sample t- test



shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = -1, p = .322, d = -.24$ .

Responses to the statement, “I intended to enrolled without participating in a MOOC class to have it in my history, so I can visit the course content at later time”, shows that international graduate students tended to answer, on average, “agree” ( $M = 3.74, SD = .90$ ), and the US graduate students tended to answer, on average, “agree” ( $M = 3.44, SD = 1.05$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = 1.36, p = .177, d = .31$ .

Student answers regarding the statement, “I spent some time reading discussion forums”, show that international graduate students tended to answer, on average, “neutral” ( $M = 3.26, SD = 1$ ). Likewise, the US graduate students tended to answer, on average, “neutral” ( $M = 3.33, SD = 1.07$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = -.33, p = .741, d = -.07$ .

Student responses to the statement, “Discussion forums in MOOCs help me to have my questions answered quickly”, show that the international graduate students tended to answer, on average, “neutral” ( $M = 3.4, SD = .88$ ), and the US graduate students also tended to answer, on average, “neutral” ( $M = 3.25, SD = .97$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = .70, p = .486, d = .16$ .

Student responses to the statement, “I enrolled in courses that I already mastered to have the Statement of Accomplishment (or Verified Certificate)”, shows that the international

graduate students tended to answer, on average, “disagree” ( $M = 2.49, SD = .99$ ); similarly, the US graduate students tended to answer, on average, “disagree” ( $M = 2.50, SD = 1.42$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = -.04, p = .966, d = -.01$ .

Response results to the statement, “I tend to re-watch some MOOC videos when there is an important information”, show that the international graduate students tended to answer, on average, “agree” ( $M = 4.16, SD = .90$ ); likewise, the US graduate students tended to answer, on average, “agree” ( $M = 3.50, SD = 1$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 3.10, p = .003$ , and represents a medium-sized effect  $d = .69$ .

When students were asked the statement, “I tend to re-watch MOOC videos when I did not understand their content”, results show that the international graduate students tended to answer, on average, “agree” ( $M = 4.19, SD = .88$ ). Similarly, the US graduate students tended to answer, on average, “agree” ( $M = 4, SD = .63$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = 1.06, p = .293, d = .25$ .

Student responses to the statement, “To pass a MOOC, there is no need to discover all course components (videos, readings, discussion forums, etc.)”, show that the international graduate students tended to answer, on average, “neutral” ( $M = 3.16, SD = 1$ ). Similarly, the US graduate students tended to answer, on average, “neutral” ( $M = 2.92, SD = 1.23$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = .98, p = .329, d = .21$ .

Student answers regarding the statement, “I enrolled in a MOOC to download materials for later use”, showed that international graduate students tended to answer, on average, “neutral” ( $M = 3.51, SD = 1.01$ ); likewise, the US graduate students tended to answer, on average, “neutral” ( $M = 3.58, SD = 1.23$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = -.28, p = .783, d = -.06$ . Table 16 summarizes all these findings:

Table 16

## Student Behavior While They are Taking MOOCs

To what extent do you agree or disagree with the following statements?	International graduate students			US graduate students			t	df	Sig.	d
	N	M	SD	N	M	SD				
A. I am taking MOOC classes as seriously as my degree classes.	43	2.95	1.00	36	2.47	1.32	1.84	77	0.069	0.41
B. When I enroll in a MOOC, I intend to complete all components of the course.	43	3.53	1.05	36	3.50	0.81	0.16	77	0.871	0.03
C. While I was taking a MOOC class, I followed the sequence of the course materials one by one.	43	3.81	1.03	36	4.00	0.48	-1.00	77	0.322	-0.24
D. I intended to enroll without participating in a MOOC class to have it in my history, so I can visit the course content at later time.	43	3.74	0.90	36	3.44	1.05	1.36	77	0.177	0.31
E. I spent some time reading discussion forums.	43	3.26	1.00	36	3.33	1.07	-0.33	77	0.741	-0.07
F. Discussion forums in MOOCs help me to have my questions answered quickly.	43	3.40	0.88	36	3.25	0.97	0.70	77	0.486	0.16

To what extent do you agree or disagree with the following statements?	International graduate students			US graduate students			t	df	Sig.	d
	N	M	SD	N	M	SD				
G. I enrolled in courses that I already mastered to have the Statement of Accomplishment (or Verified Certificate).	43	2.49	0.99	36	2.50	1.42	-0.04	77	0.966	-0.01
H. I tend to re-watch some MOOC videos when there is important information.	43	4.16	0.90	36	3.50	1.00	3.10	77	<b>0.003</b>	0.69
I. I tend to re-watch MOOC videos when I did not understand their content.	43	4.19	0.88	36	4.00	0.63	1.06	77	0.293	0.25
J. To pass a MOOC, there is no need to discover all course components (videos, readings, discussion forums, etc.).	43	3.16	1.00	36	2.92	1.23	0.98	77	0.329	0.21
K. I enrolled in a MOOC to download materials for later use.	43	3.51	1.01	36	3.58	1.23	-0.28	77	0.783	-0.06

### Student attitudes toward MOOCs.

To investigate student attitudes after taking MOOCs, a question consisted of four statements asking students to provide their degree of agreement about each statement. The statements were ranked 1-5, with 1 = “strongly disagree”, 2 = “disagree”, 3 = “neutral”, 4 = “agree”, and 5 = “strongly agree”. Following are the findings for this question:

When students were asked the statement, “I will mention MOOCs that I have taken to current or future educational institutions (e.g., when applying for college or advanced degree programs)”, results show that international graduate students tended to answer, on average,

“agree” ( $M = 3.77$ ,  $SD = .84$ ), while the US graduate students tended to answer, on average, “neutral” ( $M = 3.25$ ,  $SD = 1.05$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 2.43$ ,  $p = .017$ , and represents a medium-sized effect  $d = .55$ .

Student responses to the statement, “Because there is no financial risk by taking MOOCs, I enrolled in MOOCs as often as I can”, show that international graduate students tended to answer, on average, “agree” ( $M = 3.49$ ,  $SD = 1.18$ ). Similarly, the US graduate students tended to answer, on average, “agree” ( $M = 3.50$ ,  $SD = 1$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = -.05$ ,  $p = .963$ ,  $d = -.01$ .

Results of the statement, “MOOCs have helped me to be connected to people in my field”, show that international graduate students tended to answer, on average, “neutral” ( $M = 3.26$ ,  $SD = .90$ ), whereas the US graduate students tended to answer, on average, “disagree” ( $M = 2.39$ ,  $SD = 1.02$ ). An independent-sample t- test shows that the difference in means between international graduate students and US graduate students is statistically significant,  $t(77) = 4$ ,  $p = .001$ , and represents a large-sized effect  $d = .9$ .

Students responses to the statement, “I will recommend MOOCs to my friends and classmates”, showed that international graduate students tended to answer, on average, “strongly agree” ( $M = 4.28$ ,  $SD = .67$ ), while the US graduate students tended to answer, on average, “agree” ( $M = 3.97$ ,  $SD = .81$ ). However, an independent-sample t- test shows that the difference in means between international graduate students and US graduate students is not statistically significant,  $t(77) = 1.85$ ,  $p = .069$ ,  $d = .42$ . Table 17 summarizes the findings for this question.

Table 17

## Student Attitudes Toward MOOCs

To what extent do you agree or disagree with the following statements?	International graduate students			US graduate students			t	df	Sig.	d
	N	M	SD	N	M	SD				
A. I will mention MOOCs that I have taken to current or future educational institutions (e.g., when applying for college or advanced degree programs).	43	3.77	0.84	36	3.25	1.05	2.43	77	<b>0.017</b>	0.55
B. Because there is no financial risk by taking MOOCs, I enrolled in MOOCs as often as I can.	43	3.49	1.18	36	3.50	1.00	-0.05	77	0.963	-0.01
C. MOOCs have helped me to be connected to people in my field.	43	3.26	0.90	36	2.39	1.02	4.00	77	<b>0.001</b>	0.90
D. I will recommend MOOCs to my friends and classmates.	43	4.28	0.67	36	3.97	0.81	1.85	77	0.069	0.42

**Open-ended question.**

At the end of the survey, participants were asked the question, “Do you have any additional comments?” Participants were asked this question to give the chance to add any comments regarding the survey questions or the study in general. The total number of responses to this question was seven; six of them were from the international graduate group. Although answers to this question were limited, there were helpful comments from several participants.

Responses are coded and divided into several themes. Since the majority of responses reflected one group, data is analyzed in general themes instead of dividing it into two groups.

*Reasons for taking MOOCs.*

One of enrollment reasons in MOOCs is because MOOCs offered a great source for information. Students indicated that they enrolled in MOOCs to prepare themselves for future college classes. Other students used MOOCs as supplemental learning for their existing college classes.

I enrolled for a Stats class in Coursera so that I could be prepared for it when I took it up in school as it was one of my required courses in school. I found it extremely helpful and I recommended the same to a couple of friends too (international student).

One of the reasons for enrolling in MOOCs is the video lectures. One student stated that he enjoyed watching video rather than reading books, so he tries to search for MOOCs that meet his needs.

*Personal attitudes toward MOOCs.*

Students had diverse experiences when they took MOOCs. Some students were willing to take a MOOC that they already had taken just to be able to have a certificate. Regarding quality, some students compared MOOC courses with the existing college classes. One of the participants summarized his experience with MOOCs as:

MOOCs are good to quick learn, validate knowledge, try to pass some test without financial risk, enter new fields of learning or just to practice something (international student).

Some students liked the idea of being open to learn anything in MOOCs. They stated that MOOCs help them follow their interest in specific fields or research interests. In addition, they increased their confidence about knowledge they have for certain topics.

#### *Reasons for dropping MOOCs.*

Based on responses to the open-ended question, following is the summary of reasons that led students to drop out of MOOCs:

1. Lack of time flexibility prevented students from participating actively in MOOCs.
2. Some MOOCs had a heavy workload.
3. Weekly due dates for assignments and quizzes led students to drop out or ignore submitting the assignments.

My main reason for dropping the MOOCs that I took was the weekly due dates and having a different schedule at RIT than where the course was offered. If I would have had a more flexible time to complete the assignments, I would have stayed in the courses (international student).

### **Qualitative Results**

In the qualitative part of this study, the researcher used a semi-structured interview. The total number of participants was 10. Participant demographics represented the study population groups equally. Five international graduate students and five US graduate students were recruited for the interviews. Participants were from diverse fields of study at RIT such as engineering, information sciences, science, and art.

Findings from the interviews were divided into the four themes.



### **Reasons for taking MOOCs.**

During the interviews students focused on using MOOCs as a supplemental learning tool. Some students said they took MOOCs to have a better understanding of an existing college class. Both international and US students emphasized that MOOCs allowed them to sign up for some courses that were not offered in their colleges. One of the reasons that attracted international students to enroll in MOOCs more than US students was because MOOCs were mostly offered by highly ranked universities.

When I was in my country and before coming to RIT I dreamed to study in Harvard or MIT. With MOOCs my dream became real; also I had obtained a certificate from them due to my successful completion of their MOOCs” (international student).

Another reason students indicated was that MOOCs have high quality content and are taught by knowledgeable professors. A US graduate student stated, “When I enrolled in MOOCs, I noticed, and liked that the contents are professionally designed and delivered.” An international graduate student stated, “One of my reasons to enroll in many MOOCs was because they had a reliable source of information from trusted and well-known universities.”

Both international graduate and US graduate students indicated that MOOCs can be used as a preparation tool. For example, some international students stated that they used MOOCs to familiarize themselves with US classes before leaving their country. Other students stated that they used MOOCs to compensate for their lack of English proficiency.

Before coming to the USA, I was hesitating about my graduate study. I found that Coursera offered courses from different universities. I joined one of them, which was related to my field of study, and finished it successfully. Because of MOOCs I found myself able to study in US classes before coming to the USA (international student).

I enhanced my language proficiency, and jargon in my academic study by taking several MOOCs (international student).

Before coming to RIT to study my master's degree in HCI, I joined a HCI MOOC to familiarize myself with jargon and content in the field since my undergraduate was in a different field (US student).

In addition, students indicated that because there is no financial risk for joining MOOCs, they tended to participate in every MOOCs that they liked. Additionally, MOOCs helped students to develop their personal interests that are not related to their college majors.

I studied electrical engineering in college and I liked programming. While I was studying engineering in college, I have enrolled in several MOOCs which focused on computer programming. I think MOOCs offered me the opportunity to develop my interest in computer programming (US student).

### **Reasons for dropping MOOCs.**

One of the most prevalent issues in MOOCs is the high ratio of not completing the course. Students were asked if they had experienced dropping out of MOOCs and their reasons. The most common reason was time availability. Some students indicated that they dropped some MOOCs because there was not enough time to fulfill the MOOC requirements. A US student reported, "because college classes are usually heavy, there will be not enough time to take care of MOOCs. I usually spend summer time taking some MOOCs."

Some students indicated that they enrolled in some MOOCs because of curiosity. Then when they found that the course content did not match their expectations, or because they were not familiar with the course jargon, they did not continue in the MOOC or unenrolled from the course.

I was going through the MOOCs list in Coursera, and then picked some MOOCs that had an interesting title or topic. I enrolled then I took a look to the syllabus, as soon as I found myself not able to understand the content I unenroll the MOOC (International student).

I enrolled in some health MOOCs, but I un-enrolled since I was not able to understand all jargons in the course, I get bored and felt I need more time to understand the jargon first and then understand the lecture. I think curiosity was not a good reason to pick the course (US student).

The length, difficulty, and workload of MOOCs also are considerations that make students decide to drop out. When students face one of these issues, they usually drop out or become inactive.

I like MOOCs that are short and not difficult; I needed easy and interesting information rather than giving myself hard time thinking what I should do (US student).

### **Student experiences and attitudes.**

The interviews included some questions aimed at investigating the graduate students' experiences and attitudes. Students in general reported that MOOCs have helped them to try online education at no cost and no fear of failure. One positive comment about MOOCs was that MOOCs helped students to be more confident about learning new things.

I become more confident to learn anything, I joined many MOOCs in different fields and I found that I am able to learn anything even if I have no prior experience (US student).

In addition, MOOCs helped students explore and discover fields not related to their college majors. Some students may become expert in fields that are related to their academic fields. Other students may change their field of study after taking some MOOCs.

I pursued my master's degree in computer science while my bachelor degree was in electrical engineering after taking several MOOCs in computing I found myself more interested to do my master in computer science rather than engineering (international student).

MOOCs help me to increase my knowledge in my own business outside the school classes (US student).

One finding is that some students liked the idea of getting a certificate after finishing MOOC classes. However, the majority of students reported that they did not have any MOOC certificates. Results indicated too that students are more interested in learning the content without restrictions. They stated that to have the certificate, they needed to follow the course content and submit all quizzes on time. Some students reported that they visited the course content for months, while the course itself was designed to be finished in weeks.

One of MOOCs that I took was designed to be finished in 5 weeks; I spend three months to finish it. I did not care about the certificate; instead I was paying more attention to get the content in the right way and also because I did not have more time availability in my schedule. I liked when they left the course in my history so I can visit it any time I want (US student).

From the MOOCs' components, both international and US students reported that video lectures were the most important. Students also liked the lecture slides, because they can go through MOOCs contents quickly and then decide which video they should watch. Students reported that in-video quizzes were helpful. One of the participants stated that in-video quizzes helped him to be more focused while watching the lectures. He stated that this technique supported him in focusing more on the content, since he knew that he would be asked a question at any time during the video lecture.

Students were asked about the benefits of having discussion forums in MOOC platforms. Answers were varied and contained both positive and negative points. As positive points, students reported that discussion forums helped them see how other people's thought processes in solving problems. In addition, they were inspired by other people's thoughts. International students reported that they liked to spend time reading posts in discussion forums, because they want to enhance their English language proficiency in reading and writing.

I spent several hours reading posts and writing posts in the discussion forums. I liked when I have other people comments on my posts and also I am inspired by the posts that I read (international student).

Some students liked getting their questions answered within few hours. A US student said, “Answering my questions in discussion forums was amazing. In short time I received many great answers.”

As for the negative points about discussion forums, students reported that discussions sometimes tended to be about subjects not related to the MOOCs’ contents. Moreover, when the person posting is not proficient in English, reading his comments is hard and requires more time.

I liked to go through discussion forums to see some discussions; however, in many times I feel I should not have entered because I had difficult time to interpret and understand the comments, especially when they were written by someone who is not proficient in English. I knew they have good points but I struggle until I got the point (US student).

MOOCs quality is one reason that students continue learning in this type of environment. Both international and US graduate students reported that the knowledge and the technical quality are attractive in MOOCs.

I do not like random things, if I do I will google what I need. MOOCs, especially those in Coursera, offer very structure content and interesting way to deliver it (International student).

Regarding the question whether MOOC is more suitable for specific fields or not, students reported that they think there is a chance to contribute in all fields, even if it seems that the majority of MOOCs are in computing, engineering, and science. One student reported that he was enjoying participating in “Morality of Everyday Life”, a MOOC offered by Yale in Coursera. He said he was benefitting from this course and enjoying it as much as other technical MOOCs he had taken.

One common behavior seen among students in both groups was that most students were not considering dropping out the course if they did not participate. They said when they found an interesting MOOC, they registered for it, and then if they had time to participate they did or the course would remain in their accounts for a later visit.

### **Challenges for students using MOOCs.**

Results from the interviews indicated several challenges that both international and US graduate students faced. One of these challenges is that to be successful in MOOCs, you need to manage your time carefully. Students stated that although some MOOCs suggested a number of hours to complete their courses, they were not able to finish the requirements in the suggested time.

The most difficult part for me in MOOCs is how to manage my time. Because I am busy with my college classes during the week days, I always plan to go through MOOCs material during the weekends. However most of the times I was not able to finish what I was planning (US student).

Although I spend the suggested hours studying for MOOCs, I am not sure why I always need more hours to finish the requirement. I am not sure if that because I am not a native speaker or because MOOCs providers did not estimated the hours correctly to fit all categories of students (international student).

Motivation is important for each student who wants to try MOOCs. Since MOOCs have no restrictions, students reported that they had difficulty keeping themselves motivated. An international student commented, “The most challenging thing for me in MOOCs was how to keep myself motivated.”

## Discussion

### Why do Graduate Students Seek MOOCs?

Previous studies have discussed the potential enrollment reasons for all categories of learners in MOOCs without mentioning the level of study. However, this study investigates the possible reasons that lead graduate students to adapt MOOCs as a learning resource. Additionally, the study investigates the potential differences for reasons of enrollment between the international students and US students. While previous studies (Group, 2013; Kay et al., 2013; Seaton et al., 2014) indicated that many students enroll in MOOCs out of curiosity, our results illustrate that most graduate students enroll in MOOCs for defined reasons. Graduate students may have different reasons for taking MOOCs, which depend on many aspects; however, curiosity is a limited reason. The results agree with Fox (2013) and Marshall (2013) when they indicated that students use MOOCs as supplemental learning resources. Moreover, this study results indicate that graduate students trust the content of MOOCs, especially those offered by highly ranked universities. According to results analysis, the trust exists due to the well-known history of these universities in academic fields. Although international and US graduate students have similar reasons for taking MOOCs, the results indicate that international students use MOOCs more to increase their language proficiency and to familiarize themselves with US colleges. That may happen specifically when students are from a country that has a different culture from the US. Some US students may use MOOCs as a preparation method when they seek a different field of study. The reasons graduate students enroll in specific MOOCs due to need for specific interest or research correlated with the definition of information-seeking behavior. Graduate students, in general, recognize the gap and seek what they think will fill it.

### **Why do Graduate Students Drop Out of MOOCs?**

International and US graduate students do not significantly differ from each other when they were asked about potential reasons for dropping out. Similarly to the studies conducted by Grainger (2013) and Perna et al. (2013) graduate students considered that the length, workload, and difficulties of MOOCs are reasons to drop out. However, they prefer to stay enrolled in the course even if they did not fulfill the course requirements. Findings indicate that both international and US graduate students may enroll in the course without participating to keep it in their account for later use. Results indicated that graduate students might use or enter the MOOC content after the course finished. According to Phil (2013) classifications that classified students according to their activities, we can say that graduate students are probably “drop-ins” or “passive participants”. According to Wilkowski, Deutsch, and Russell (2014) classifications that classified students according to their intention, we can call the graduate students “casual learners.” The reason for this title is because graduate students, in some cases, may use MOOCs to find some information related to college courses or research interests without the intent to complete the course. Interestingly, results indicate that graduate students do not intend to drop out when they are unfamiliar with the course jargon, and they do not drop out after finding a piece of information that they want. We can interpret these behaviors as the graduate student, and other learners in general, are not aware of what dropout of MOOC means. This finding has not been discussed in previous studies.

### **Graduate Student Experiences and Attitudes**

Student experiences and attitudes are not always the same. The study finds some similarities and differences between international and US graduate student attitudes and



experiences with MOOCs. Following is a discussion about the research findings related to student experiences and attitudes:

**Similarities of experiences and attitudes.**

Similar to what Grainger (2013) and MOOC@Edinburgh group (2013) reported about students' satisfaction about their experiences with MOOCs, results show that graduate students generally have positive attitudes and experiences with MOOCs. International and US graduate students were similar in some of their responses but different in others. For similarities results indicate that Coursera is the most visited MOOC platform by both international and US graduate students. We think this is because Coursera has a higher number of MOOCs available to students. For interacting with MOOCs components, although there was a statistically significant difference between international and US students, they both agree on the importance of video lectures. They also agree on the importance of lecture slides.

Similarly to Grainger (2013) and MOOC@Edinburgh group (2013) research, results show that both groups consider discussion forums "of little importance" which may indicate that they do not care to participate in these forums. Although the findings show both international and US graduate students intend to complete all course requirements in MOOCs, results also show that they are not taking MOOCs courses as serious as their degree classes. The researcher believes this contradiction occurred because MOOCs are free, so students actually feel there is no risk not being serious.

Interestingly, while Guo and Reinecke (2014) reported that country of origin impacts the method of navigation in MOOCs, the findings of this study illustrate that there is no difference between international and US students when they navigate in MOOCs material. We can interpret this behavior when it is linked with the Newman and Oh (2014). They reported that the number

of materials covered is higher according to the learner's level of study. Hence the navigation behavior may differ by the learner's level of education as well. The researcher believes that one reason that makes no differences in student behavior is that students in this study have similar levels of academic study.

The relationship between the number of MOOCs graduate students enrolled in and the number of certificates obtained was an interesting finding. Although results indicate that there was a small percentage of dropping out in MOOCs, the percentage of certificates obtained did not reflecting student answers about dropping out. One interpretation for this behavior is that the participants in both groups are not aware of the meaning of "drop out." Students may think that, since the course is still in their accounts, they are still considered active users. Some students think that in order to drop a MOOC they need to click the "unenroll" button; otherwise they are still active users. We may say that student knew what drop out means, but they ignore participating.

International and US students face two major challenges in MOOCs. The first one is the difficulty of being proficient in time management because graduate students usually have a heavy course load in college that requires more effort. The second challenge is that students without good motivation will not succeed in MOOCs.

#### **Differences in experiences and attitudes.**

The study findings illustrate several differences between international and US graduate students. For student enrollment, results illustrate that both international and US students are willing to enroll in MOOCs as often as they could when they found time. However, results indicate that international students are likely enrolling in MOOCs more than US students. The researcher believes this occurred because international students are looking for materials that

help them to be more successful in their academic study. For interacting with MOOC components, findings illustrate that international students consider the importance of quizzes, peer assessments, and associated journal articles significantly different from US students. These findings may be linked with studies indicating that international students are more serious than US students. We can add that international students may find associated articles as a good opportunity to enhance their English proficiency skills, especially reading skills.

More than US students, international students consider MOOCs they have taken as evidence of gaining skills or valuable information that can be added to their resume. We may infer that international students admire the source of these MOOCs more than US student, especially when these MOOCs are taught by well-known professors or provided by highly ranked universities.

The study results find that, in general, both international and US graduate students feel that MOOCs enhance their educational achievements. Findings reveal that both international and US graduate students expect better performance in college classes after taking major-related MOOCs. Also, students responded that MOOCs have inspired them to peruse some topics further. However, the statistical tests indicate that there are significant differences between the results of both groups in the study.

Results show that MOOCs help international students feel more confident about learning new things. The researcher believes that occurred because MOOCs help them experience the US educational system, which is considered new to international students.

Findings also indicate that there was a significant difference between international and US graduate students when they were asked about peer assessment use. Again, this may refer to the fact that international students are more serious than US students, so they mostly participate

in all of MOOCs components. In addition, international students, especially those who are not proficient in English, may use peer assessment as an opportunity to support their writing skills. In fact, the study finds that international students use MOOCs as a supplemental learning tool to increase their English proficiency, while US students may not see that as an opportunity to enhance second language proficiency.

The researcher tries to find a relationship between graduate student academic fields of study and MOOC course offerings. Results indicated that most students are choosing MOOCs in engineering or information technology fields. However, we cannot generalize this finding, because a simple reason that is most students in the study were from engineering and information technology programs. Additionally, graduate programs at RIT do not represent all disciplines offered in MOOC's platforms. However, from the findings we can conclude that international students also are interested in business MOOCs, while US students prefer mathematic MOOCs.

### **Conclusion and Future Work**

This study aimed to compare and contrast international graduate student and US graduate student experiences and attitudes using massive open online courses known as MOOCs. The study investigated the overall experiences and attitudes of the graduate students, focusing on exploring similarities and differences between these two groups.

Both international and US graduate students have similar reasons that led them to enroll in MOOCs. They also have similar reasons for dropping out of MOOCs. However, the study found that international students have unique reasons to enroll in MOOCs. The two definite reasons that make international students enroll in MOOCs are to support English proficiency and

to prepare themselves for study in the US. They also prefer the idea of getting MOOCs from high ranking, well-known universities.

Study results indicate that graduate students in both groups enroll in MOOCs as a supplemental tool to increase their knowledge and support their performance in college classes. Additionally, MOOCs assist students to be more confident learning new things or testing their current knowledge.

One of major findings is that graduate students in both groups know what they want from MOOCs, hence they are not seeking MOOCs only to satisfy their curiosity. Findings also show that students are not aware of the reality of the expression “drop out.” They think that to drop out you need to click the “un-enroll” button. In fact, most graduate students prefer to keep the MOOCs in their account for later visits.

### **Limitations of this Study and Recommendations for Future Work**

As in all studies, this study has its own limitations. One is the demographic variable. For future studies, the researcher may consider adding undergraduate students to the research sample. In addition, it would be interesting to compare the experiences, attitudes, and behaviors of students with MOOCs according to their fields of the study. The researcher may consider partnering with one of the MOOCs providers to do more research with students’ activities in MOOCs.

As a recommendation for future works and implementation, the researcher suggests that MOOCs providers restrict students to taking no more than three MOOCs at one time. That will allow students to focus more on the course content and make their choices carefully. It also may limit the number of curious people or those who enroll but never show up.

Another way to organize the enrollment process is by MOOC providers allowing students to indicate their intent from the beginning of the course. For example, students may choose “I will be a drop-in student” or “I am an observer” to indicate that they are only curious about some of the course content, and they will not participate in the assignments and quizzes. This process will help MOOCs providers to estimate the number of active users from the beginning. Hence MOOCs providers can give those students permission to see only the videos and discussion forums. Through this process, MOOC providers will be able to estimate and assess how accurately MOOCs outputs are.

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## Appendices

### Appendix A: IRB Approval

	<b>Rochester Institute of Technology</b>  RIT Institutional Review Board for the Protection of Human Subjects in Research 141 Lomb Memorial Drive Rochester, New York 14623-5604 Phone: 585-475-7673 Fax: 585-475-7990 Email: hmfrs@rit.edu
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**Form C  
IRB Decision Form**

**TO:** Omar Asiri; Michael Yacci

**FROM:** RIT Institutional Review Board

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**DATE:** April 15, 2014

**RE:** Decision of the RIT Institutional Review Board

**Project Title:** A Comparisson Between International and US Graduate Students Attitudes and Experiences With Using Massive Open Online Courses (MOOCs): A Thesis Proposal

The Institutional Review Board (IRB) has taken the following action on your project named above.

Exempt 46.101 (b) (2)

Now that your project is approved, you may proceed as you described in the Form A.

You are required to submit to the IRB any:

- **Proposed** modifications and wait for approval before implementing them,
- Unanticipated risks, and
- Actual injury to human subjects.

\_\_\_\_\_  
 Heather Foti, MPH  
 Associate Director  
 Office of Human Subjects Research

Revised 10-18-06

## Appendix B: The Survey Form

### A Comparison Between International and US Graduate Students' Attitudes and Experiences Using Massive Open Online Courses MOOCs

Dear participant,

We would appreciate if you could complete this survey. The study aims to compare international and US graduate students' attitudes and experiences using Massive Open Online Courses (MOOCs). You can quit the survey any time, and you have the right to skip any question that you do not want to answer.

Your participation is voluntary, and your responses will remain anonymous and confidential. The results from this survey will only be presented in aggregate form. All survey responses will be sent in a final report or summary of survey responses. We greatly appreciate your willingness to share your time by participating; this survey is expected to only take approximately 10 -15 minutes to complete. Once you complete the survey, you will enter a drawing to win one of four \$50 gift cards. We expect the survey to be completed by 100 students, so the odds of being selected as the winner of the drawing are 1/25. The survey tool we use will keep your information for the drawing completely separate from the data collected for this research, so your responses will still remain anonymous.

Please complete the survey one time only. If you have additional thoughts or questions, you can email them separately to the researcher at OXA4385@RIT.EDU

You can contact Heather Foti, Associate Director of the HSRO, at (585) 475-7673 or hmfsrs@rit.edu if you have any questions or concerns about your rights as a research participant.

*Please indicate your consent to participate in the survey:\**

I consent.

I do not consent.

Please enter your email address if you wish to enter the drawing:

---

1) Which of the following descriptions best characterizes you:

International graduate student.

US graduate student.

2) What is your gender?

Male

Female

3) What is your current level of academic study?

Masters

Ph.D.

4) Which of the following best represents your primary field of education?

Art, Crafts, Design, and Graphic Communications

Business, Management, and Communication

Computing and Information Sciences

Engineering and Engineering Technology

Health Sciences

Multidisciplinary

Science, Mathematics, and Imaging Science

Social Sciences, Humanities, and Education

Sustainability

5) How old are you?

20-24

25-29

30-34

older than 35

6) How did you hear about MOOCs? (Check all that apply)

Friends

Social networks

Blogs

News articles/press coverage

Search engines

Other

7) I experienced MOOCs in:

(Check all that apply)

Coursera

EdX

Udacity

Other: \_\_\_\_\_

8) How many MOOCs have you enrolled in?

\_\_\_\_\_

9) How many MOOCs are you currently enrolled in?

\_\_\_\_\_

10) From MOOCs you have enrolled in, how many statements of accomplishment or signature track certificates do you have?

0       1       2       3       more than 3

11) How many times you have dropped out of MOOCs?

Never       1       2       3       more than 3

12) Please rate the importance of each of the following MOOC components:

	Unimportant	Of Little Importance	Moderately Important	Important	Very Important
Video lectures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lecture slides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Associated journal resources and articles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discussions forum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quizzes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peer assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13) Why did you enroll in MOOCs? (Check all that apply)

Subject area relevant to my academic field of study.

Obtain credentials to enhance my CV/resume.

Personal growth and development.

Course offered by a prestigious university.

Course offered by a famous professor.

Curiosity about the subject matter, without a particular educational rationale.

It may help me get a job.

It relates to my current responsibilities.

14) What MOOC courses or field of study you have enrolled in?

Accounting/Finance

Business/Management

Engineering

Arts/Humanities

Environment/Sustainability

Information Technology/Systems

Language Learning

Legal/Law

Mathematics

Medicine/Healthcare

Physical Sciences

Social Sciences

Education

Other: \_\_\_\_\_



## 15) MOOCs and student achievements:

To what extent do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I expect to perform better at my class work after taking a related MOOCs class.	( )	( )	( )	( )	( )
Taking MOOCs have inspired me to pursue some topics further.	( )	( )	( )	( )	( )
Taking MOOCs made me feel more confident about learning new things.	( )	( )	( )	( )	( )
MOOCs can help me familiarize myself with US college classes.	( )	( )	( )	( )	( )
Peer assessment in some MOOCs can help me to develop my evaluation skills.	( )	( )	( )	( )	( )
MOOCs give me an opportunity to discover areas which are not related to my academic study.	( )	( )	( )	( )	( )
Taking MOOCs have saved me money that I can use toward other learning resources.	( )	( )	( )	( )	( )
I can enhance my second language proficiency by taking	( )	( )	( )	( )	( )

MOOCs in that language.					
Taking MOOCs helped me to learn jargon from other fields.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16) *The potential reasons for dropping a MOOC class:*

*To what extent do you agree or disagree with the following statements?*

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
MOOCs' length plays a role in my decision about continuing the course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MOOCs' workload plays a role in my decision about continuing the course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MOOCs' difficulty plays a role in my decision about continuing the course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to drop out of a course when I am not familiar with its jargon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enroll in a MOOC for specific information, and I drop out as soon as I get it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I lose interest , I drop out of MOOCs class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17) Student behavior while taking MOOCs:

To what extent do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am taking MOOCs classes as seriously as my degree classes.	( )	( )	( )	( )	( )
When I enroll in a MOOC I intend to complete all components of the course.	( )	( )	( )	( )	( )
While I was taking a MOOC class, I followed the sequence of the course materials one by one.	( )	( )	( )	( )	( )
I intended to enroll without participating in a MOOC class to have it in my history, so I can visit the course content at later time.	( )	( )	( )	( )	( )
I spent some time reading discussion forums.	( )	( )	( )	( )	( )
Discussion forums in MOOCs help me to have my questions answered quickly.	( )	( )	( )	( )	( )
I enrolled in courses that I already mastered to have the Statement of Accomplishment (or verified Certificate).	( )	( )	( )	( )	( )

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I tend to re-watch some MOOC videos when there is important information.	( )	( )	( )	( )	( )
I tend to re-watch MOOC videos when I did not understand their content.	( )	( )	( )	( )	( )
To pass a MOOC, there is no need to discover all course components (videos, readings , discussion forums, etc. ).	( )	( )	( )	( )	( )
I enrolled in a MOOC to download materials for later use.	( )	( )	( )	( )	( )

18) Student attitudes after taking a MOOC class

To what extent do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I will mention MOOCs that I have taken to current or future educational institutions (e.g., when applying for college or advanced degree programs).	( )	( )	( )	( )	( )
Because there is no financial risk by taking MOOCs, I enrolled in MOOCs as often as I can.	( )	( )	( )	( )	( )
MOOCs have helped me to be connected to people in my field.	( )	( )	( )	( )	( )
I will recommend MOOCs to my friends and classmates.	( )	( )	( )	( )	( )

19) Do you have any additional comments?

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Thank You!

Thank you for taking this survey. Your response has been recorded.

## Appendix C: Email Sent to the List of Graduate Students at RIT

Dear Graduate Student,

If you have enrolled and experienced learning in one of the Massive Open Online Courses (MOOCs) such as Coursera and EdX, **YOUR HELP IS NEEDED**. We are conducting a research study to compare international and US graduate student attitudes and experiences with using MOOCs.

We invite you to participate in this study by taking an online survey found at <http://edu.surveygizmo.com/s3/1609385/28adf916f562> The survey will take approximately 10 - 15 minutes of your time.

**Once you complete the survey, you will enter a drawing to win one of four \$50 gift cards. We expect the survey to be completed by 100 students, so the odds of being selected as the winner of the drawing are 1/25. The survey will close on April 29, 2014, and the drawing will be conducted on April 30, 2014.**

**Your participation in this study is voluntary and optional. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. The results of the research study may be published, but no personal identifying information will be used. For this survey, descriptive statistics may be published. Your identifying information will not be used.**

The survey tool we use will keep your information for the drawing completely separate from the data collected for this research, so your responses will remain anonymous. The survey is implemented using Survey Gizmo, and you may wish to review their privacy policy (<http://www.surveygizmo.com/privacy/>) prior to completing the survey.

If you have any questions concerning the study, please feel free to contact the researcher. Thank you in advance for your participation!

Sincerely,  
Omar Asiri  
[OXA4385@RIT.EDU](mailto:OXA4385@RIT.EDU)

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact Heather Foti, RIT's Associate Director in the Human Research Subjects Office, at (585) 475-7673 or by e-mail at [hmfsrcs@rit.edu](mailto:hmfsrcs@rit.edu).

## Appendix D: The Interview Questions

1. Are you an international graduate student or a US graduate student?
2. What is your major?
3. How many MOOCs have you been taking? What are the reasons for taking MOOCs?
4. How many times do you usually spend on MOOCs?
5. Do you have a favorite school, subject, or professor with whom you like to have MOOC courses? Why?
6. How many MOOCs have you dropped out of? What are the reasons that make you decide to drop out?
7. In your opinion, what are the negatives of MOOCs?
8. In your opinion, what are the positives of MOOCs?
9. Do you think that students are dealing with MOOCs differently according to their language, culture, and wealth? How?
10. Can you describe how you navigate in a MOOC course? Why?
11. What are your favorite components of MOOCs? Why?
12. Do you think that success in MOOCs requires special skills? Why? Examples?
13. Do you think MOOCs can make students more connected with other people in their fields of study? How?
14. What are the areas of interest in which you mostly like to search for a MOOC course? Does it relate to your major?
15. Do you think that MOOC is more suitable for some discipline and not suitable for others? Why? Examples?
16. Do you have something about MOOCs that you would like to share?

## Appendix E: The Interview Consent Form

### Consent for Participation in Interview Research

I volunteer to participate in a research conducted by Mr. Omar Asiri from Rochester Institute of Technology. I understand that his research is designed to gather information to compare international and US graduate students' experiences and attitudes using MOOCs. I will be one of approximately 10 people being interviewed for this research.

1. My participation in this research is voluntary. I may withdraw and discontinue participation at any time without penalty. If I decline to participate or withdraw from the study, no one on my campus will be told.
2. I understand that most interviewees will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.
3. The interview will last approximately 25 minutes. Notes will be written during the interview. An audio recording for the interview and subsequent dialogue will be made.
4. I understand that the researcher will not identify me by name in any reports using information obtained from this interview and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of individuals and institutions.
5. Faculty and administrators from my campus will neither be present at the interview nor have access to raw notes or transcripts. This precaution will prevent my individual comments from having any negative repercussions.
6. I understand that this research study has been reviewed and approved by the Institutional Review Board (IRB) for Studies Involving Human Subjects: Behavioral Sciences Committee at Rochester Institute of Technology. For research problems or questions regarding subjects, the Institutional Review Board may be contacted through Heather Foti, Associate Director of the HSRO, at (585) 475-7673 or [hmfsrcs@rit.edu](mailto:hmfsrcs@rit.edu).
7. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
8. At the end of the interview, I will be given a \$15 gift card.
9. I have been given a copy of this consent form.



My Signature \_\_\_\_\_ Date \_\_\_\_\_

Signature of the Investigator \_\_\_\_\_

For more information, please contact:

Omar Asiri at (412) 209-5066 or email: [OXA4385@RIT.EDU](mailto:OXA4385@RIT.EDU)

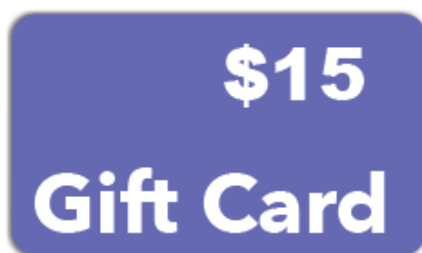
## Appendix F: The Interview Flyer

# PARTICIPANTS NEEDED

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**If you are a graduate student and have enrolled in any MOOCs environment, your participation is needed.**



- Participant will be interviewed for ~25 Minutes.
- Interview will take place on RIT campus.
- You will be asked about your experiences and attitudes when you used MOOCs as a learning resource.
- A \$15 gift card will be given in for each participant

**Are you interested?**

**email us at : [OXA4385@RIT.EDU](mailto:OXA4385@RIT.EDU)**

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**MOOC Interview**  
**OXA4385@RIT.EDU**

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