

**ASSESSING AN ONLINE ENTREPRENEURSHIP COURSE
AT MICHIGAN STATE UNIVERSITY**

By

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ABSTRACT

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The Entrepreneurial Network (msuENET) was established in 2010 to teach entrepreneurship education, to help entrepreneurs turn their ideas into successful enterprises, and to connect all individuals and groups that have an interest in entrepreneurship together to achieve the msuENET's central goal of creating an entrepreneurial society. As part of its programming, the msuENET created a certificate program in entrepreneurship (ANR491) to disseminate entrepreneurial education. This study provides an analysis of the impact of this certificate program on students' entrepreneurial knowledge, skills, and abilities, as well as evaluating the performance of msuENET up to this point of its limited life. The results were drawn from a survey of 25 students that enrolled in the entrepreneurship certificate program offered during the spring semester of 2012. Survey data was collected via a web questionnaire.

One of the significant conclusions of this study is that msuENET's performance was significant. The entrepreneurship program had a positive impact on students' knowledge, skills and abilities. The majority of the program's students reported that they would start new businesses within the next 5 years. Finally, students were generally satisfied with the course and the instructors' performance.

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TABLE OF CONTENTS

LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF ABBREVIATIONS.....	x
CHAPTER I	
Introduction.....	1
CHAPTER II	
Review of Related Literatures on Entrepreneurship Education & Students' Assessment...	4
A. Entrepreneurship Education Assessment.....	4
B. Course & Students Assessment.....	12
CHAPTER III	
Methodology.....	25
A. Analytical Framework.....	25
B. Research Objectives.....	25
C. Research Questions.....	26
D. Approaches and Methods.....	26
Entrepreneurship certificate program (ANR491) students' survey.....	26
E. Data Collected.....	27
Entrepreneurship certificate program students' survey.....	28
F. Data Analysis.....	28
Entrepreneurship certificate program students' survey.....	28
CHAPTER V	
Case of Study.....	29
A. msuENET.....	29
B. The msuENET Entrepreneurship Certificate Program (ANR491).....	32
CHAPTER VI	
Results/Findings.....	34
Students' Survey.....	34
A. Students' Backgrounds.....	34
B. Students' Assessment Prior to the ANR491 Program.....	39
C. Students' Abilities and their Entrepreneurial Capabilities During the ANR491 Program Courses.....	53
D. Students' Abilities and Capabilities Post-ANR491 Course.....	64

E. Students' Assessment of the Value of the Multicultural Component of the Courses.....	69
F. Students' Assessment of the Components of the Courses.....	75
G. Students' Assessment of the Instructors.....	84
CHAPTER VII	
KKU Students.....	92
A. Sample Description.....	92
B. Gender Differences.....	92
CHAPTER VIII	
Conclusion.....	95
A. Summary of the Research.....	95
B. Discussion Results.....	96
C. Limitations of the Research.....	97
1. Assessing the Performance of msuENET.....	97
2. Assessing the ANR491 Program.....	97
D. Recommendations for msuENET.....	98
1. msuENET Program Administration.....	98
2. ANR491 Certificate Courses.....	101
E. Future Research.....	102
F. Assessment Contribution to msuENET.....	103
APPENDICES	104
APPENDIX 1.....	105
APPENDIX 2.....	114
REFERENCES.....	127

LIST OF TABLES

Table 1: Assessment Benefits.....	16
Table 2: Students' Population, Home Countries, Gender, and Survey Participation, spring semester 2012.....	36
Table 3: Gender Difference T-Types.....	93
Table 4: Assessment Models & Definitions (According to OFAS).....	106
Table 5: Summative Types by Langan.....	108
Table 6: ANR491 Students' Primary Areas of Study, spring semester 2012.....	109
Table 7: Students' Preparedness Levels for ANR491 program, spring semester 2012.....	109
Table 8: Students' Level of Interaction with People from Different Cultures or Countries than Their Own, spring semester 2012.	110
Table 9: Students' Abilities to Discover New Business Opportunities, spring semester 2012.....	110
Table 10: How ANR491 Students Would Likely Respond to New Business Opportunities, spring semester 2012.....	111
Table 11: Students' Opinions about Their Abilities to Start New Businesses after Taking ANR491, spring semester 2012.....	111
Table 12: Students' Classmate Preferences, spring semester 2012.....	112
Table 13: ANR491 Students' Preferences for Future Classmates, spring semester 2012.....	112
Table 14: Students' Opinions about Recommending This Program to Other Students, spring semester 2012.....	113
Table 15: The Value of Instructors' Feedback, spring semester 2012.....	113

LIST OF FIGURES

Figure 1: Learning Process and Assessment Phase.....	14
Figure 2: Bloom’s Taxonomy of Learning Behaviors.....	19
Figure 3: Online Enrollment as a Percentage of Total Enrollment, fall 2002 through 2010 (Babson Survey Research Group and Quahog Research Group, LLC).....	23
Figure 4: Students’ Knowledge about Entrepreneurship Subjects Before Taking the ANR491 Program, spring semester 2012.....	40
Figure 5: Students’ Motivation to Take ANR491 Program, spring semester 2012.....	42
Figure 6: Participants’ Business Experience Length Before Attending ANR491, spring semester 2012.....	47
Figure 7: The Influence of the Knowledge Gained in ANR491 on Students’ Decisions to Start New Businesses in the Next 5 Years, spring semester.....	66
Figure 8: Students’ Overall Satisfaction, spring semester 2012.....	83
Figure 9: Students’ Opinions about Taking Another Course with the Same Instructors, spring semester 2012.....	91
Figure 10: Students’ Preparation for ANR491 Courses, spring semester 2012.....	115
Figure 11: Types of Businesses ANR491 Students Worked In, spring semester 2012...	115
Figure 12: Students’ Role in the Business They Worked In, spring semester 2012.....	116
Figure 13: Students’ Opinions About the Effectiveness of an Online Multicultural Course on Their Skills & Abilities, spring semester 2012.....	116
Figure 14: Students’ Abilities to Create New Business Ideas, spring semester 2012.....	117
Figure 15: Students’ Abilities to Persuade People to Follow Their Ideas, spring semester 2012.....	117
Figure 16: Levels of Interest in New Business Opportunities, spring semester 2012.....	118
Figure 17: Possible Funding Sources, spring semester 2012.....	118
Figure 18: Factors That Might Influence Students’ Judgment About Innovation, spring semester 2012.....	119

Figure 19: Students' Riskiness Levels, spring semester 2012.....	119
Figure 20: Students' Opinions About the Knowledge Gained from ANR4891, spring semester 2012.....	120
Figure 21: Students' Confidence About Improving Their Abilities to Discover New Business Ideas after ANR4891, spring semester 2012.....	120
Figure 22: Students' Studying Preferences, spring semester 2012.....	121
Figure 23: Students' Opinions About the Value of Multicultural Courses, spring semester 2012.....	121
Figure 24: Students' Opinions About Courses' Pace, spring semester 2012.....	122
Figure 25: Courses' Difficulty According to ANR491 Students, spring semester 2012.....	122
Figure 26: Course Requirements' Difficulty, spring semester 2012.....	123
Figure 27: The Effectiveness of Course Implements, spring semester 2012.....	123
Figure 28: The Effectiveness of ANR491 Instructors, spring semester 2012.....	124
Figure 29: The Effectiveness of ANR491 Instructors' Assistants, spring semester 2012.....	124
Figure 30: Instructors' Engagement Levels with the Course, spring semester 2012.....	125
Figure 31: Instructors' Responding in a Timely Manner, spring semester 2012.....	125
Figure 32: Instructors' Abilities to Communicate New Ideas, spring semester 2012.....	126

LIST OF ABBREVIATIONS

msuENET	Entrepreneurship Network
ANR491	Entrepreneurship certificate program
MSU	Michigan State University
OECD	The Organization for Economic Co-operation and Development
SBA	Small Business Administration
USDA	U.S. Department of Agriculture
FFA	Future Farmers of America
OAPA	Office of Academic Planning & Assessment, University of Massachusetts
RPI	Rensselaer Polytechnic Institute
OFAS	Office OF Assessment Service, University of Northern Illinois
UOTA	University of Texas at Arlington
UOC	University of Cincinnati
West Ed	West Ed is a nonprofit research, development, and service Agency
KKU	King Khalid University
K.S.A	Kingdom of Saudi Arabia

CHAPTER I

Introduction

Entrepreneurship is one of the fastest-growing subjects at American colleges and universities. Entrepreneurship courses, programs, and activities are emerging not only in schools of business, but throughout the curriculum (Klein & Bullock, 2006). Entrepreneurial education is the process of providing individuals with the ability to recognize commercial opportunities and the insight, self-esteem, knowledge, and skills to act on them (Jones & English, 2004). There are three main sources of demand for entrepreneurship education: governments, students and the business-world (Alberti, Sciascia & Poli, 2004).

There was ongoing debate about if entrepreneurship was teachable or not. Many researchers believed that entrepreneurship is born with people and it is not something that can be taught (Solomon, 1997); whereas, other researchers were certain that entrepreneurship is teachable (Anselm). However, even if an individual is born with entrepreneurship capabilities, they will be more effective if they increase their knowledge about entrepreneurship education.

Teaching entrepreneurship education required more than regular teaching techniques such as lectures and exams. Contemporary teaching techniques such as interviewing of entrepreneurs, working with a start-up entrepreneur by a class, and case studies started to replace traditional teaching technique (Henry, Hill & Leitch, 2005). ‘Which teaching techniques are more accurate?’ was the arguing question for many years. Finding only one accurate teaching technique is not simple; a combination between

traditional and modern teaching techniques is the most accurate and effective teaching technique for entrepreneurship education.

Many researches have been done studying the effectiveness of entrepreneurship education for instance (Graevenitz, Harhoff & Weber, 2010). Researchers had a wide debate about the effectiveness of entrepreneurship education. The Organization for Economic Co-operation and Development (OECD, 2009) found that the entrepreneurship education had a negative impact on students' intention to become entrepreneurs. On the other hand, several studies—such as a study conducted in 2010 in Denmark—showed that entrepreneurship education and training has a positive impact on motivation for and inclination for starting a business (Vestergaard, 2010).

Furthermore, there are many techniques that have been employed to determining the effectiveness of entrepreneurship education. However, there is no agreement about which technique is the most effective. Henry, Hill and Leitch found that cost-benefit analysis could be used to determine effectiveness of entrepreneurship education through comparing the cost of risk to the benefit of opportunity. According to McMullan, Chrisman and Vesper, surveys, envelopment analysis, action research, content analysis and regression analysis could also be used to determine effectiveness of entrepreneurship education. Although there is no agreement on one specific technique that could be considered the most effective technique to determine the effectiveness of entrepreneurship education, surveys have been widely used in terms of deciding the effectiveness of entrepreneurship programs (Solomon, 1997).

There are many types of assessments: for instance, the program assessment, individuals' assessment, and performance assessment. Assessments have several methods

to evaluate the results, such as value added, qualitative, and portfolio methods. Assessment provides sufficient information that could be used to obtain adequate results for the future. Furthermore, although there are several common features most assessments might contain, there is no agreement on a precise assessment form or specific types of questions the assessment should contain. Because assessment designers design assessments according to their needs, that might not fit other people's needs or plans.

Entrepreneurial education and the performance of such programs have been of significant interest to educators, policy makers, and other stakeholder for several years. There are wide ranges of programs using different pedagogies and applied in diverse contexts that exist in the marketplace. This study will assess the performance of the msuENET program at Michigan State University. Moreover, this study will examine the effectiveness of the ANR491 courses on students' knowledge, skills, and abilities.

Chapter II reviews related literature on entrepreneurship education assessment and students' and course assessment. Chapter III defines the methodology that has been used to examine the impact of entrepreneurship certificate program on students' knowledge, skills, and abilities. Chapter IV presents the research objectives and questions. Chapter V illustrates research cases of study. Chapter VI presents an assessment of the entrepreneurship certificate program. Chapter VII will discuss the King Khalid University (KKU) sample. Finally, Chapter VIII, the conclusion, will present research key findings and recommendations.

CHAPTER II

Review of Related Literatures on Entrepreneurship Education & Students’

Assessment

A. Entrepreneurship Education Assessment

Entrepreneurship has had an important role in the industrial revolution and the related socio-economic and political transformation of many nations (Matlay, 2005). According to Marius Pretorius (2008), entrepreneurship is the engine that drives the economy of most nations; it is “America’s secret weapon” and the main contributor that enhances the United States to achieve a superior position as part of the global economy. Timmons and Spinelli found entrepreneurship to be the fundamental differentiating factor in the United States culture, where 37% of the population is somehow involved in their own ventures apart from their regular jobs. Nearly 70% of U.S. economic growth has come from entrepreneurial activity (Lovgren, 2012). Entrepreneurial growth has become a critical part of the nation's economy. According to the U.S. Small Business Administration (SBA), of the 25.5 million businesses in the U.S. today, approximately 25.1 million, or 98.5%, can be characterized as small businesses.

Entrepreneurship has received a significant share of research attention (Birley, 1985); however, studies and literatures failed to show a universal definition for entrepreneurship (Matlay, 2006). Some researchers express entrepreneurship as a couple of processes, like “The process by which individuals either on their own or inside an organization pursue opportunities without regard to the resources they currently control”

(Dubini & Aldrich, 1991). Entrepreneurship is the attempt to create value through the recognition of business opportunities, the management of risk-taking appropriate to the opportunity, and through the communicative and management skills to mobilize human, financial, and material resources necessary to bring a project to fruition (Satria, 2009). The term “entrepreneur” was first utilized in sixteenth century France to describe captains of fortune who hired out mercenary soldiers to serve princes and towns (Kaufmann & Dant, 1998). The term’s usage in business contexts commenced in the eighteenth century to refer to economic actors that undertook contracts for public works, introduced innovative agricultural techniques, or risked personal capital in industry (Kaufmann & Dant, 1998). Since that era, the entrepreneurship idea kept developing and the area of entrepreneurship has received a significant share of research attention (Birley, 1985); but on the other hand, researchers have not consistently defined and operationalized what they mean by “entrepreneurs” (Collins, Hanges & Locke, 2004). The difference between entrepreneur identification methods that had been used by researchers is one of the essential reasons that explain why we do not have one major definition for entrepreneur. Some researchers (Brockhaus, 1980) define an entrepreneur as "A major owner and manager of the business venture not employed elsewhere." Gartner (1988) defined entrepreneurship as:

“...the act of founding a new company where none existed before. Entrepreneur is the person and entrepreneurs are the small group of persons who are new company founders. The term is also used to indicate that the founders have some significant ownership stake in the business (they are not only employees) and that their intention is for business to grow and prosper beyond the self-employment stage."

The past 20 years have witnessed an enormous growth in the number of small business management and entrepreneurship courses at different educational institutions. A great number of programs broadly termed as enterprise or entrepreneurship education have been carried out in schools and higher educational institutions throughout the world (Alberti, Sciascia & Poli, 2004). According to Sexton, Upton, Wacholtz and Mcdougall, the first entrepreneurship courses were taught in U.S. universities in the 1970's, and the first undergraduate entrepreneurship majors were offered by the 1980's at Babson College, Baylor University, and University of Southern California. In 1999, there were 170 American universities offering courses in entrepreneurship, and about less than 85 of them had existed for no longer than three years (Jones & English, 2004). Moreover, in 2003, U.S. colleges and universities offered over 2,200 entrepreneurship courses at over 1,600 schools, supported by 277 endowed faculty positions, several dozen refereed academic journals, and more than 100 funded centers (Klein & Bullock, 2006).

That increase in entrepreneurship programs at colleges and universities is not limited merely to the U.S. For instance, a growing number of Australian universities are offering entrepreneurship programs in response to developments in overseas universities, and they are accelerated by the Australian Federal Government's innovations statement (Jones & English, 2004). The growth in the number of entrepreneurial education programs in colleges and universities was in response to high demand that been created by the government, students, and the business world (Alberti, Sciascia & Poli, 2004). The government's goal at developing and supporting an entrepreneurial education is to increase people's abilities to create jobs (Moylan, McGreevy & Heageny). According to Peña, Transue, Riggieri, Shipp and Van Atta, the U.S. SBA, the Minority Business

Development Agency (within the Department of Commerce), and the U.S. Department of Agriculture (USDA) are examples of government programs that had been created to develop entrepreneurship (Jones & English, 2004).

The rise of these entrepreneurial education programs had also been fueled by unprecedented student demand, as students look for a style of business education that will provide them with the transferable skills needed to succeed in an increasingly divergent business environment. The business world itself, both large and small, needs managers who are oriented to the development of new business initiatives to ensure a continuous renewal (Alberti, Sciascia & Poli, 2004). Moreover, many agriculture colleges, agricultural economics, and agribusiness programs are showing developing interest in entrepreneurship education. For instance, Texas A&M, Purdue, Vermont, and Cornell offer entrepreneurship majors, minors, or concentrations, and many more departments offer individual courses in entrepreneurship (Klein & Bullock, 2006). In addition, Klein and Bullock (2006) found that since 1998, the national Future Farmers of America (FFA) has offered a program in Agri-Entrepreneurship.

Many bouts of research and studies have been conducted about the possibility of teaching entrepreneurship; the debate between researchers about whether entrepreneurship can be taught or if entrepreneurs are born that way is still ongoing. Some researchers believe that either people are born entrepreneurs or they are not; professor of Psychology Alan Jacobowitz, after conducting interviews of more than 500 entrepreneurs in a period of 3 years, concludes that entrepreneurs are born and not made (Satria, 2009). Solomon (1997) found that entrepreneurs cannot be manufactured, only recognized. Some people are born entrepreneurs and will succeed with or without

education, while no amount of education can provide business success for those who lack the “entrepreneurial spirit” (Jones and English, 2004). Cone (2012) stated that entrepreneurs have long been seen as self-taught, self-made individualists; this perception dates from the days of men like Carnegie, Edison, and others, who had little formal schooling.

On the other hand, many researchers of entrepreneurship education believed that entrepreneurs are made and not born. According to Solomon (1997) and Gorman et al. (1997), there is support that entrepreneurship can be taught, or at least encouraged, by entrepreneurship education. Anselm assumed that entrepreneurship could be learned. In addition, Anselm assumed that individuals may be born with different “tendencies” to successfully operate as entrepreneurs; however, the level of entrepreneurial activity will be higher if entry-level skills training includes entrepreneurial skills. A new study from Babson College finds the evidence is “overwhelming” that if business students take at least two core entrepreneurship classes, that can “positively influence” them to go on to start up a business (Rubin, 2011). Another study conducted by Harvard Business School showed that it is possible to teach entrepreneurship (HBS, 2002). Experience overseas demonstrates that people are entering business schools to learn about entrepreneurship, and there is a growing acceptance that elements of entrepreneurship can be taught and learned (Jones and English, 2004).

Can entrepreneurship be taught? The answer is yes, and no. Depending on research and studies, there is not one answer for that question. Research findings vary according to the approaches they have been using and what aspect of entrepreneurship education they are trying to determine is teachable or not.

Entrepreneurship teaching techniques vary, and some of them are designed to reach specific goals such as improve students' knowledge, skills, or behavior. Several traditional educational methods had been used by the "old school" toward entrepreneurship education, such as action-oriented approach, literature reviews, and exams (Winslow, Solomon, & Tarabishy, 1997). The traditional methods of teaching entrepreneurship are beginning to give way to new methods that come out of an increased understanding of entrepreneurship (Alberti, Sciacia & Poli, 2004). The interviewing of entrepreneurs, working with a start-up entrepreneur by a class, and case studies all provide models for students seeing entrepreneurship as a career path (Henry, Hill & Leitch, 2005). Live interaction with entrepreneurs is an important part of creating entrepreneurial drive: if students see that people "like themselves" were successfully able to create companies, it helps to demystify the process and make that option more feasible (Wilson, 2008). A survey conducted by Ahiaarah revealed that the most used pedagogical tool for teaching entrepreneurship was a combination of lectures and cases. The second most used tool was special projects, which include live cases or case formulations; other assignments included oral and written presentations, guest lectures, business plan preparations, and the use of films and videos (Wilson, 2008).

Researchers were not able to indicate a specific adequate teaching technique that could be used alone to teach entrepreneurship. The majority of research suggested that the most successful method to teach entrepreneurship is neither traditional methods nor contemporary methods; yet the most successful teaching methods are a combination of these two methods. In that case, we will ensure that students will be able to increase their

knowledge from literatures, exams, and projects, and from visually interacting with entrepreneurs.

Determining the effectiveness of entrepreneurship education programs is not that simple, and it is majorly dependent on the programs' outcomes and how much students will obtain benefits from these programs: will it improve students' knowledge, skills, and critical thinking? Will it assist them to start new businesses or improve existing ones?

A recent study conducted in the Netherlands sought to identify the impact of a mini-company program, whose participants were vocational college students. On the entrepreneurial skills and competences of those students, the authors concluded that the overall effect of the program on entrepreneurial skills was insignificant. Moreover, the impact on the students' intentions to become an entrepreneur was "significantly negative" (OECD, 2009).

On the other hand, a number of studies have shown that entrepreneurship education programs have a significant positive impact on various proxies for entrepreneurship, including entrepreneurial intentions, the desirability and feasibility of entrepreneurial ventures, and various competencies that are associated with entrepreneurship (Lepoutre, Van Den Berghe, Tilleuil & Crijns, 2010). Researchers used different techniques to determine the effectiveness of entrepreneurship education programs like The Berger Entrepreneurship Program, which had been running at the University of Arizona since 1983. The evaluation compared graduates of the program between 1985 and 1998 with a matched sample of non-entrepreneurship business graduates from the same university. The findings suggested that participation in the program had a positive impact (OECD, 2009).

Researchers used different techniques to illustrate the effectiveness of entrepreneurship education. Henry, Hill and Leitch suggested assessing the effectiveness of entrepreneurship courses on a number of grounds. First, there is an expectation that the net benefits of entrepreneurship programs should outweigh their costs and risks. Second, training programs and courses can be expensive in terms of money for sponsors and in time for participants. Third, in addition to the more obvious costs highlighted by the authors, there are hidden costs which should also be taken into consideration when assessing a program's effectiveness. McMullan, Chrisman and Vesper found that the evaluations of entrepreneurial assistance programs have primarily relied upon surveys of clients. However, there are a number of other methods by which economic development programs can be evaluated. For example, evaluations have been conducted using data envelopment analysis, action research, content analysis, verification of activity reports, and annual reports of economic development agencies. According to McMullan, Chrisman and Vesper and Grant, Wallace and Pitniey (1995), subjecting secondary data to a variety of statistical procedures such as confirmatory factor analysis techniques could be used to assess entrepreneurship education, whereas Hanson (1993) found that time-series regression analysis also had been used.

There is no specific technique considered to be the most effective technique used by researchers to assess the effectiveness of entrepreneurship education. On the other hand, surveys are widely used by researchers to capture the effects of entrepreneurship. For instance, researchers at The George Washington University developed a mail survey to examine the current state of entrepreneurial education in the United States and

internationally, and to evaluate the extent and breadth of entrepreneurial education methods and course offerings during the 2004-2005 academic year (Solomon, 1997).

B. Course & Students Assessment

Through studying, students attempt to gain knowledge and skills that will increase their chance to obtain better lives and higher paying jobs. For each course, they spent a lot of their time, money, and health to reach their goals. On the other hand, knowing how much students learned from the material that has been taught in any course is the major concern of the instructors and course designers. Measuring the academic performance of students is challenging, since student performance is a product of socio-economic, psychological, and environmental factors (Hijazi & Naqvi, 2006).

A number of researchers are attempting to answer some questions that represent key issues in learning and education systems, such as: ‘How do we know how much students have learned?’ ‘How do we know if the instructors were able to deliver course material to the students?’ and, ‘How do we ensure the knowledge and skills that the students gained in this course will help them to improve their performance in the future?’

The word “assessment” has taken on a variety of meanings within higher education. The term can refer to the process faculties use to grade students’ course assignments, to standardized testing imposed on institutions as part of increased pressure for external accountability, or to any activity designed to collect information on the success of a program, course, or university curriculum (OAPA meaning).

Some research defines assessment as an ongoing process whose goals are to understand and improve students’ learning, meet learning needs, and establish a positive learning environment (Ceut & Gett, 2000-2001). According to Buzzetto-More & Alade

(2006), assessment is an ongoing process that involves planning, discussion, consensus building, reflection, measuring, analyzing, and improving, based on the data and artifacts gathered about a learning objective.

The goal of assessment is to determine if learning objectives have been accomplished (Hazari & Sunil, 2004). Gaulden found that assessment is an approach designed to help teachers find out what students are learning in the classroom and how well they are learning it. Assessment can also be defined as a series of techniques and choices from simple to complex strategies to motivate and engage students while collecting feedback on their learning (Mihram, 2001).

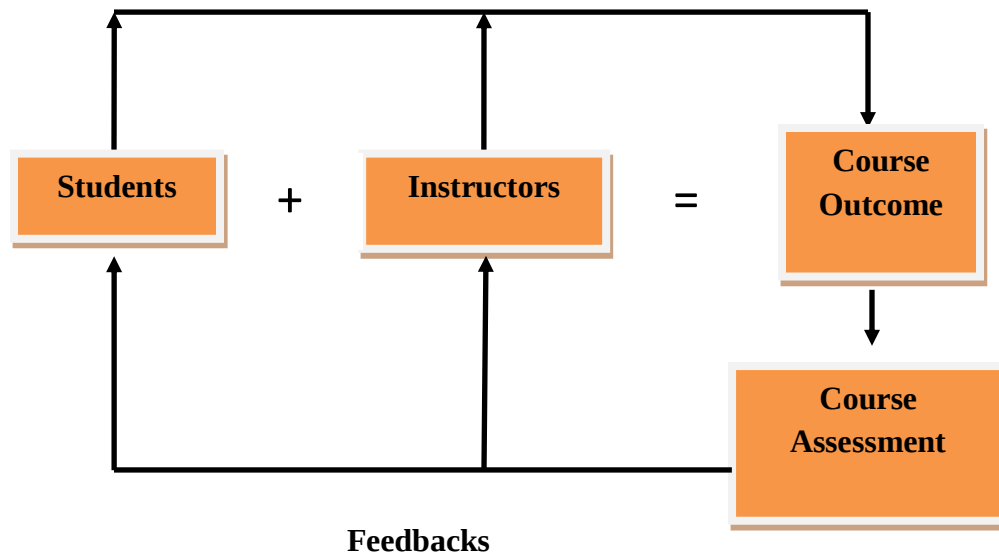
Many universities and higher education institutions in the U.S. and around the world are attempting to determine the success of their higher education courses and programs. Because of this, implementing a cyclic assessment will help course designers to obtain an idea about the learning process during the course and students' and instructors' performance, and show the level of knowledge that students have received. Assessment measures Learning Outcomes. Assessment ensures that knowledge and skills that students acquire in the course match the Learning Outcomes declared in the syllabus (RPI, 2009).

Assessment represents one essential basis in the learning process: it provides students and the instructors with a crucial feedback, helping them to improve their performance and giving an idea about learning path in that course. See Figure 1: Learning Process and Assessment Phase.

Figure 1: Learning Process and Assessment Phase

Improvements

*For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this thesis.



Although there are a large number of instructors who have a high degree in teaching with advanced delivering information techniques and strategies, it is not adequate to guarantee that students have learned the course objectives. The accurate assumption is that students' understanding and learning pace vary from student to student, even if the knowledge each student has learned is still vague.

Assessment will reduce the delivering knowledge gap between the instructor and the student by giving the instructor a better understanding of each student's level, and the opportunity to provide helpful feedback to the students. On the other hand, assessment will provide the instructors enough information about their own performance. In addition,

assessment could be considered as a documentation or kind of archive of what the students, instructors, and course accomplish.

Assessment provides significant information that could help improve the learning system, but there are three major parts (as shown in Table 1) that received the highest benefit for the assessment.

1. Students' benefits.
2. Instructors' benefits.
3. Course designers' benefits.

Table 1: Assessment Benefits

Students Benefits	Instructors Benefits	Department Benefits
1. Beginning of the Course		
It will help students to know their knowledge and skill level before entering the course.	It will help the instructors to have a better understanding about students' knowledge and skill levels so they can find the accurate plan to improve their level by the end of the course.	There are no department benefits yet.
2. Through the Course		
Receiving frequent feedback on their assignments, quizzes, and exams will provide students with sufficient information about their current knowledge and skill levels so they can determine where the strengths and the weaknesses in their performance are and plan how to improve them.	- Knowing current students' learning levels will help instructors to determine what aspects of her/his teaching plan need to be improved. - Because the students' learning is varied, assessment data will help instructors to identify which students need more help so they can decide how to help them to improve their performance.	It will provide course designers with enough information about how is whole learning and teaching process.

Table 1 cont'd.

3. End of the Course		
• Assessment will show students how much they improved their knowledge and skill levels compared to their knowledge and skill levels at the beginning of the course. • It will determine if they reach their goal or not. • It will illustrate if the plan they implemented during the course to improve their performance succeeded or failed.	• It shows the instructors the positives and the negatives of their teaching techniques and strategies. • It will help them to create a better teaching plan. • It will reveal the students' satisfaction with the course and the instructors' performance so they can work to improve it. • It will present the instructors' achievements & accomplishments.	• Assessment will show if the instructors succeeded in delivering course material to the students. • It will show if the students were able to accomplish the course goal and objectives. • It will help them to decide how to improve teaching methods and course curricula in future.

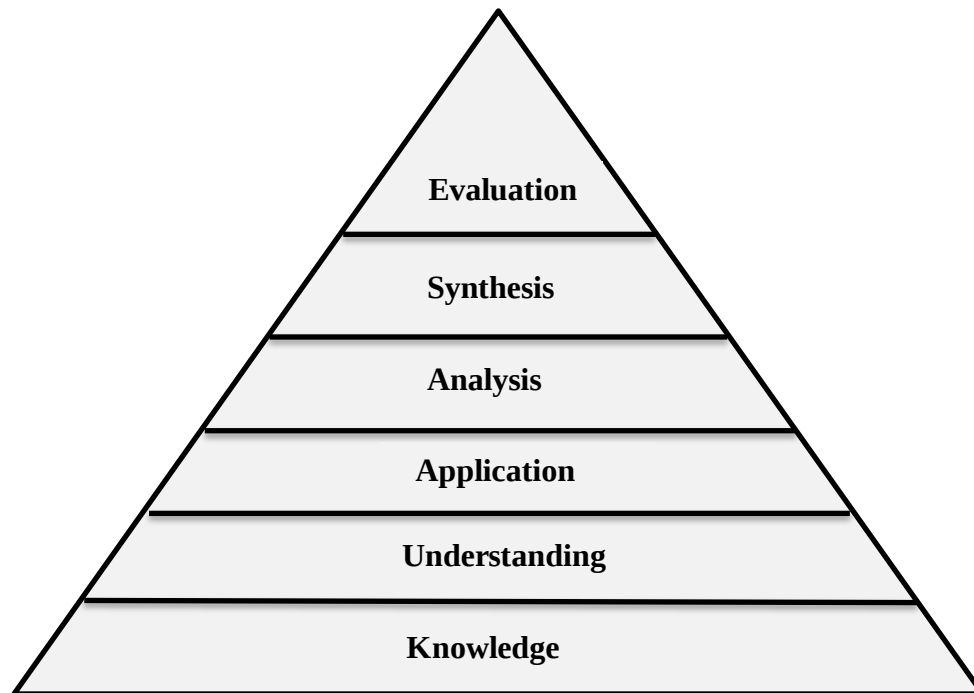
Humanity has known assessment for a long time, such as around 800 B.C. in Sparta, when boys were rigorously training for military service and were periodically assessed by state officials to determine their “physical capacity and citizenship.” The recorded assessment tools had not exceeded the 17th century. The purpose behind this was that the documented assessment tools did not appear to exist as a recorded documentation until around the 17th century (Burton & Miller, 1998).

For academia, assessment is not new, with the roots of the current movement dating back to the beginning of the 20th century; the oldest recognized undergraduate assessment program in the U.S. can be found at the University of Wisconsin, which has reported some form of student outcomes assessments continuously since 1900 (More & Alade, 2006). However, since the oldest assessment occurs until now, there are several questions that have been raised, such as, “What is the accurate instrument to assess students’ knowledge and skill improvement? What do we actually assess? And what kind of assessments do we need to use?”

The office of assessment service at University of Northern Illinois found that there are several kinds of assessments that can change regarding to the goal of the assessment, such as assessment for accountability, assessment for improvement, assessment of individuals, assessment of institutions, assessment of programs, assessment plan, performance assessment, and standard-based assessment. For more details about the assessment models, see Table 4: Appendix 1.

There are several forms of assessment that can be used to assess accountability, improvement, individuals, institutions, programs, plans, performance and standard-based. The *Taxonomy of Learning Behaviors* by Benjamin Bloom (1956) is one of the most famous theories that has been used to assess students’ learning steps. Bloom tried to identify the goal of the learning process (Knowledge, Skills, and Attitude) or KSA (Clark, 1999). As shown in Figure 2, Bloom’s Taxonomy of Learning Behaviors contains six levels of hierarchical learning behaviors (Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation).

Figure 2: Bloom's Taxonomy of Learning Behaviors



Value-added assessment is also one of the most common approaches that has been used to estimate schools' and teachers' effects through a variety of statistical models (Rubin, Stuart & Zanutto, 2004). Moreover, it could be used to indicate the knowledge that has been gained by students at the end of the semester. According to Buzzetto-More & Alade (2006), in order to obtain an effective For Value-added assessment that illustrates how much knowledge students gained, we need to know students' knowledge and skills before and after taking the class. In other words, Value-added assessment will collect information about students' level of knowledge before the class starts and will redo the same process at the end of the class, and by comparing the results between before and after taking the class, it will show what students gained during the class.

Improving students' learning depending on class activities such as quizzes, problem sets, concepts quizzes, and so forth involves a certain type of assessment; this is

known as “*Formative assessment*” (Ceut & Gett, 2000-2001). Formative assessment is focused on students’ performance during the class, using their grades to determine the improvement (More & Alade, 2006). Formative assessment provides data that can be used immediately to determine whether students have learned what the instructor intended (UOTA).

On the other hand, *Summative assessment* is comprised of cumulative evaluations used to measure student growth after instruction, and are generally given at the end of a course in order to determine whether long term learning goals have been met (Coffey, 2012). Swearingen (2002) found that summative assessment is a test, usually given at the end of a term, chapter, semester, year, or the like, the purpose of which is evaluative; in addition, high-stakes tests such as the ACT, GRE, SAT, and WASL are also examples of summative assessments. There is not only one specific type of summative assessment, but there are several different types, as Langan (2007) addressed. See Table 5: Appendix 1.

Summative and formative methods are likely used in classroom assessment when instructors are willing to track their students’ performance during the semester or their overall performance at the end of the semester.

Using external methods to assess students’ performance is called *course embedded or rubric method*. Usually done by an expert in the field from outside the program, likely from a similar program at another institution, assessment of students is conducted, evaluated, or supplemented. Information can be obtained from external evaluators using many methods, including surveys, interviews, etc. (OFAS). Course rubric is one authentic assessment tool, which is designed to simulate real life activity where students are engaged in solving real-life problems (Andrade, 2001). Andrade &

Ying (2005) found that a “rubric” is a document that articulates the expectations of an assignment by listing the criteria, or what counts, and describing levels of quality from excellent to poor.

Portfolio assessment is also one of the assessment methods. Yasemin and Hasan Tinmaz found the reason behind using portfolio assessment is that:

“The traditional assessment strategies will not be appropriate for evaluating the goals of a project-based learning course. As an alternative assessment type, the portfolio method is widely used for project-based learning because its components are the reflections of students for different periods, improvement in their progress, and prospective goals.”

Cerbin (1994) defines portfolio assessment as a personalized document that represents the specific aims and work of its author and is structured to explain what, how, and why students learn or do not learn in a class.

According to Skidmore College, *indirect assessment* is often designed for individual faculty who wish to improve their teaching of a specific course. Data collected can be analyzed to assess student-learning outcomes for a program. Data can take many forms, such as grades, course evaluation data, supplemental course evaluation data, and informal and formal conversations with students enrolled in the course (UOC). However, according to the Assessment Handbook at Missouri State University, *direct assessment* involves looking at student performance by examining samples of students’ work. This assessment may examine student outcomes from a given course, from a degree program, or from the overall university (as in achieving University General Education Goals). Examples of the work to be assessed are: targeted objectives exhibited

on final exams questions; student papers or presentations assessed for achievement of course or program goals; student portfolios assessed for achievement of course, program, or University goals; or licensure exams for professional programs.

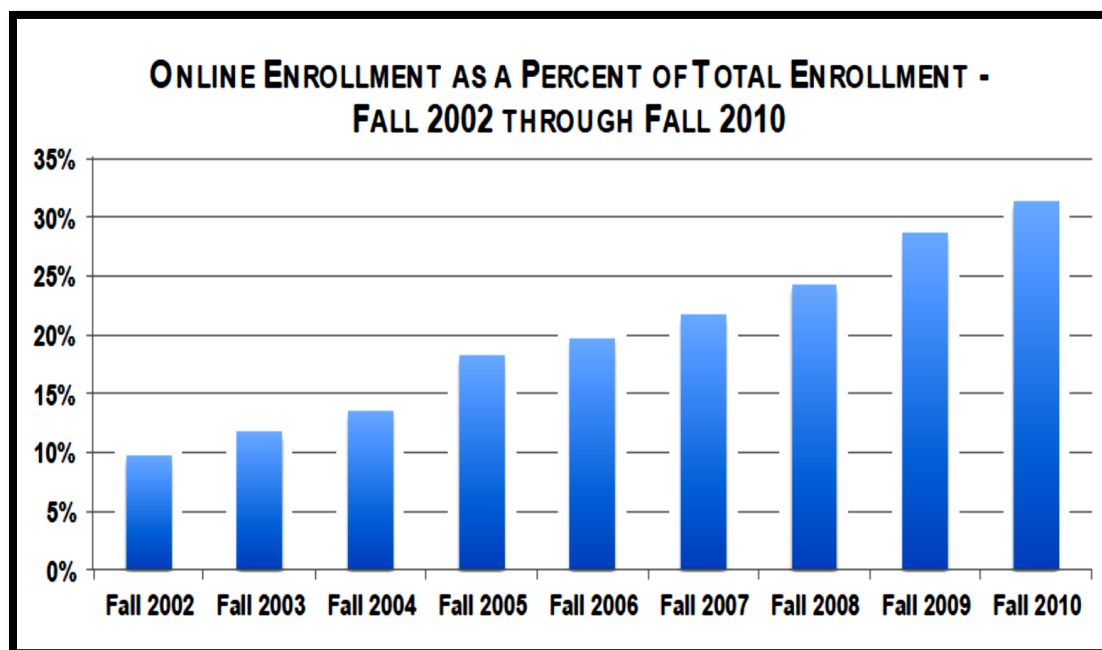
West (2001) found that *Local assessment* is a local program containing a set of selected formal assessment approaches by school districts or, in some cases, individual schools to meet their own needs. In many states the law requires schools to do local assessments, such as Maine law, which requires that every school board adopt and fully implement by the end of the 2003-2004 school year a local assessment system as the measure of student progress toward achievement of the content standards of the system of learning results.

Authentic assessment is a form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills (Mueller, 2005). Prendeville & Wellman (2011) found that authentic assessment is a process of gathering information through which the skills and needs of students are identified with respect to the language and curricular demands they will encounter. However, *authentic performance assessment* indicates an evaluation of a student's ability to perform a complex task that is common in the classroom (OFAS).

The final methods of assessing are *Qualitative and Quantitative* methods. Qualitative methods are ways of gathering information that yield results that cannot easily be measured by or translated into numbers. They are often used when researchers need the subtleties behind the numbers (Rabinowitz, 2012). A quantitative method is depending on numerical scores or ratings, such as, surveys, inventories, institutional/departmental data, and departmental/course-level exams (OFAS).

Online education has captured the interest of educators at all levels; teachers are being asked to adopt their courses for internet delivery, while students are being promised more flexible learning formats (Chralambos & McIssac, 2001). Business schools have been under constant pressure to provide students the skills and experience needed to be effectively using emerging technologies that are being used by businesses to gain a competitive advantage (Hazari, 2004). According to Babson Survey Research Group and Quahog Research Group, the number of students who are taking online courses in the U.S. has been increasing since the last decade; see Figure 3 below.

Figure 3: Online Enrollment as a Percentage of Total Enrollment, fall 2002 through 2010 (Babson Survey Research Group and Quahog Research Group, LLC)



For previous reasons, assessing online courses is quite essential, and it is at the same level of importance as the classroom course's assessment. Hence, there is a need to identify effective assessment methods appropriate to online learning and understand how online learning changes the selection, monitoring, and managing of assessment activities (Vonderwell & Alderman, 2007). Mason, Pegler and Weller (2004) found that the e-portfolio is the most precise method to assess online courses due to the significant advantage of electronic portfolios, such as providing many opportunities to integrate all of the student's work in the course and to connect new ideas with the students' existing knowledge and context. Self-assessment should be a major component of online courses since students will be able to determine if they are meeting the required learning objectives, and if they are not, they may repeat the coursework for their own benefit (Robles & Braathen, 2002). Assessing online courses using the survey option will provide beneficial information about the course, instructors, and the students. The assessment methods used in the survey option differed due to the object of the assessment, such as formal assessment to assess students' critical thinking, or informal assessment to indicate students' overall understanding (McGee, 2010).

CHAPTER III

Methodology

A. Analytical Framework

Evaluating the performance of the current msuENET certificate program (ANR491) is crucial for the program's future development. The improvements in students' knowledge, skills, abilities, confidence to start new businesses, and satisfaction about their experiences with msuENET will be the major scales to determine the success of the entrepreneurship certificate program. To assess the effectiveness of msuENET entrepreneurship certificate program on students' knowledge, abilities, and skills, this research will use assessment of improvement model.

Assessment of improvement model is defined as an assessment that feeds directly, and often immediately, back into revising the course, program, or institution to improve student-learning results (OFAS). The improvement model has been widely used to assess the performance of programs and entrepreneurial courses. For instance, George Washington University developed a survey to examine the current state of entrepreneurship education in the U.S. (Winslow, Solomon & Tarabishy, 1997). On the other hand, according to Hijazi & Naqvi (2006), many private colleges in Pakistan used assessment of improvement to assess the improvement of students' knowledge after taking specific courses.

B. Research Objectives

Indicate students' knowledge, skills, and experience levels prior to taking the entrepreneurship certificate program and compare it with students' knowledge, skills, and experience levels after taking the entrepreneurship certificate program to determine the students' improvement and the effectiveness of the entrepreneurship certificate program.

C. Research Questions

Does the entrepreneurship certificate program improve students' knowledge, skills, and abilities? Did the entrepreneurship certificate program enhance their chances to compete in the business market? Moreover, what were students' evaluations for their overall experience with msuENET?

D. Approaches and Methods

The assessment was conducted during the spring 2012 semester at Michigan State University to assess the impact of an online entrepreneurship program offered by msuENET. The value-added method was chosen to evaluate students' improvement.

Value-added was selected to evaluate students' improvement because of results this method focuses on, enabling the researcher to compare what participants gained before and after a particular program or course that needs to be assessed (More & Alade, 2006).

Data was collected from the entrepreneurship certificate program students by survey.

Entrepreneurship certificate program students' survey

The survey's targeted population was the students of the entrepreneurship certificate program during the spring semester of 2012 at Michigan State University. The

entrepreneurship certificate program contained two sections: section 730, a three-credit course about “entrepreneurial mindset” and section 740, a three-credit course about “new venture.” The entrepreneurship certificate program students’ contact information, such as names and email addresses, were obtained from courses’ instructors. Participation invitations that included the survey link were sent to all entrepreneurship certificate program students by emails. In addition, the survey was posted on the entrepreneurship certificate program courses’ announcements board on ANGEL¹. Furthermore, the participation invitation and survey link were also posted on the entrepreneurship certificate program’s page on Facebook.

The web questionnaire was designed and implemented using Survey Monkey®. This survey platform was appropriate given the wide geographic dispersal of the survey population. Forty-nine students were in the program; this number includes all students who applied for the entrepreneurship certificate program courses in spring semester 2012 before dropping or withdrawing from the course. Twenty-five students agreed to participate in this study. All responses were conducted electronically. The survey was approved by IRB² and pre-tested by msuENET leadership members, course instructors, and previous entrepreneurship certificate program students.

E. Data Collected

The data gathered for this study was from the entrepreneurship certificate program students’ surveys.

¹ Michigan State University website for courses online materials.

² Department of human resources.

Entrepreneurship certificate program students' survey

The total ANR491 courses' student population was forty-nine, and twenty-five participants (N=25) responded to the survey. All the participation was through the internet. The total participation was 51%. Females were the majority of the entrepreneurship certificate program, with 14 participants, which is 56% of the sample, while males were the minority, with 11 participants, or 44% of the sample. The highest population in the entrepreneurship certificate program was from K.S.A.: 19 students, which is 76% of the total sample, followed by 5 MSU students, which is 20% of the total sample; whereas, the lowest population in the entrepreneurship certificate program was from Togo students, with just 1 student, which made up 4% of the total sample.

F. Data Analysis

Entrepreneurship certificate program students' survey

This study employed different analysis methods to analyze students' survey data; for instance, descriptive analysis and graphical analysis. Descriptive analysis has been widely used to summarize the quality of collected data, looking for overall trends and results (Ryan). The survey sample was less than sixty, and that prevented this study from using any regression model to analyze the data. The study depended on descriptive analysis and analyzing the graphs to evaluate the data that been gathered from the survey.

CHAPTER V

Case of Study

A. msuENET

The Entrepreneurship Network at Michigan State University, better known as the msuENET, connects potential and existing venture and social entrepreneurs with education. Joining entrepreneurs together with the possible knowledge, mentors, advocates, and funding resources is the major goal for msuENET. In addition, msuENET is helping entrepreneurs to build and explore business ideas. The program was officially founded in fall 2010; however, the initial idea about this entrepreneurship program came from more than seven months of informal meetings before the formal start. It was started by a small group of Michigan State University scholars with a mutual interest in entrepreneurship. These individuals held regular meetings during lunch and started out with a simple question: “How does one create an entrepreneurial society and what does it take?”

This small entrepreneurial group started to get bigger when several members from MSU’s faculty, such as the MSU Global Center, and from outside MSU, such as several individuals with an interest in entrepreneurship, joined the group. The meeting became wider when the entrepreneurial group started to meet with groups and individuals with a similar interest in entrepreneurship subjects from outside the university, like State group and Hatch.³ After those meetings between entrepreneurial groups themselves and with entrepreneurs from inside and outside of the university, the entrepreneurial group created

³ State group is group of individuals interested in entrepreneurship at East Lansing area whereas Hatch is a student business incubator, provided by Michigan State University

a list of objectives that might help them to accomplish their goal. First, establishing an entrepreneurship network, which could serve at least Mid-Michigan, aims to connect entrepreneurs and people curious about entrepreneurship together to exchange ideas and get benefits from each other's experiences. Second, they decided to create new entrepreneurs by founding entrepreneurship courses that offer entrepreneurial ideas for everyone who is interested in entrepreneurship subjects and willing start a business or improve their business. Third, they would provide guidance for those entrepreneurs or people with an interest in entrepreneurship (individuals or groups) through linking them with the Michigan State University education, knowledge, researches, experiences, and educated entrepreneurial experts.

The first step toward accomplishing the entrepreneurial group's goals was launching an entrepreneurship network (msuENET) in 2010. Although initiating an entrepreneurship network was a significant first step, it was not easy. The entrepreneurship group spent a lot of effort and time to establish this program, since the group had not designed an entrepreneurship network before and there were no official resources or funds to support building the network. The reason behind the scarcity of resources was that although the entrepreneurship network was a part of Michigan State University, they did not receive any funding from the university until spring 2011, when the entrepreneurship network got MSU approval.

The second move the entrepreneurial group made after starting the entrepreneurship network in 2010 was instituting the Entrepreneurial Mindset (ANR 491) course. In the spring of 2011, the msuENET program offered their first entrepreneurship course through Michigan State University, which is the entrepreneurship certificate

program. At that time, the entrepreneurship certificate program contained only one section (the Entrepreneurial Mindset). In addition, fall 2011 was the first semester the entrepreneurship certificate program started to have students from King Khalid University in the Kingdom of Saudi Arabia (KKU) and Togo. Students' admissions of the entrepreneurship certificate program were arranged in advance through several exchange visits between msuENET and the students' sponsors. Having students from KKU and Togo was a huge transformation in msuENET's development path; it provided msuENET with a funding source that helped them to maintain progress, advertise the program, and obtain more recognition. Students' satisfaction about the knowledge, course materials, and quality of instruction during the initial course offering enabled the msuENET to obtain financial support from MSU. In addition, the initial offering helped the msuENET gain recognition in the community, and as such, it was offered an opportunity to join the Hatch, the City of East Lansing, and LEAP⁴, which provided further access to resources (i.e. facilities and personnel) for the msuENET.

Educating the community about entrepreneurship ideas and the role entrepreneurship played in developing the economy was not quite easy and required a lot of work and efforts from all colleges, universities, organizations, and individuals on the local community levels. Despite this challenge, msuENET accomplished two goals from the three major goals they planned to achieve. Reaching msuENET's third goal is doable,

⁴ The Lansing Economic Area Partnership (LEAP) is a coalition of area leaders committed to building a prosperous and vibrant region where businesses can thrive. To do this, they help entrepreneurs start new businesses, help existing businesses grow, and attract new businesses to the region. http://www.purelansing.com/mission_vision.php

but it might take much more time than planned to transform the society to be a society of entrepreneurs.

B. The msuENET Entrepreneurship Certificate Program (ANR491)

This research case study is particularly interested in assessing the performance of the MSU Entrepreneurship Certificate Program. This program is a unique online program that is taught by MSU faculty to students from MSU, KKU and Togo. The initial start of the certificate program was in the spring of 2011. The program's objective is to provide students with knowledge and experience that could help them to improve their cognition, skills, and performance to establish or develop businesses; by educating students with entrepreneurship ideas, the course aims to create an entrepreneurial society. The certificate program currently contains two courses: 1) the Entrepreneurial Mindset (EM) section 730 (three credits), and 2) the New Venture (NV) section 740 (three credits). A third course is currently also being developed to complete the certificate program. This course will be based on a student practicum experience. For administrative purposes, the certificate program is given an MSU course label (ANR491) and uses different section numbers to represent the specific three course requirements of the certificate. Furthermore, the certificate program is an independent university program in that it is not a part of any other college or departmental program. The course had been offered in both spring and fall semesters since 2011.

At the end of each semester's ANR491 program, students who pass individual sections of this program (or both) receive a graduation certificate for that component of the program. Professional MSU instructors with expertise in the area of entrepreneurship teach both classes. All sections of the ANR491 program are offered online so that

instructors and students from various locations can contact each other through the internet. The ANR491 program uses contemporary instruments such as Adobe Connect, Facebook, and Skype to facilitate communication with students. On the other hand, ANR491 program students can also use a course management tool known as Angel that is available for MSU students to submit their homework or contact their instructors.

After two years from the initial start of the entrepreneurship certificate, this research study will be the first assessment for the course from outside of the msuENET. In addition, depending on students' feedbacks, this research tried to discover the strengths and the weakness of the entrepreneurship certificate and provide msuENET and courses' instructors with beneficial information about the courses, students, and instructors, which may be extremely helpful to improve the entrepreneurship certificate program in the future.

CHAPTER VI
Results/Findings
Students' Survey

This section will debate the findings and the results of the ANR491 students' survey.

A. Students' Backgrounds

The following section will assess students' backgrounds regarding their population, home countries, gender, and primary areas of study.

The ANR491 program had students from several different countries, such as the Kingdom of Saudi Arabia, the U.S., Togo, and China. 51 students made up the total population in the ANR491 certificate program; 33 was the total number of students who had been able to pass ANR491 courses, whereas 25 students participated in the survey. K.S.A. had the highest population in the ANR491 certificate program, with 38 students (75%) of the total population; the highest ANR491 courses' passed population (70%), with 23 students; and the highest participation rate in the survey (76%), with 19 students. Togo had the lowest population in the ANR491 certificate program (10%), with 5 students; shared with MSU the lowest ANR491 courses' passed population (15%), with 5 students; and the lowest participation rate in the survey (4%), with merely 1 student. MSU⁵ students made up 16% of the ANR491's total population with 8 students; 15% of

⁵ Students from countries outside of K.S.A. and Togo are categorized under MSU students.

the ANR491 courses' population, with 5 students; and 20% of the participation rate in the survey, with 5 students.

Discovering that the highest number of students who participated in the survey were from K.S.A. was not surprising, due to the number of K.S.A. students who were admitted to the ANR491 certificate program in the spring semester of 2012. On the other hand, finding that Togo students participated the least in the survey was not surprising, due to the low number of Togo students who were admitted to the ANR491 certificate program courses. Moreover, Togo students faced several technical and connectivity difficulties during the semester, and that issue appeared to be continuous; thus, the technical and connectivity difficulties also affected Togo students' participation in the survey, and their participation was too low, with only 1 student. Table 2 illustrates the ANR491 total population, students' participation in the survey, and total population of students that passed.

**Table 2: Students' Population, Home Countries, Gender, and Survey Participation,
spring semester 2012**

Countries	ANR491 total Population	%	Passed Students population	%	Survey Participants'	% of Sample
K.S.A	38	75%	23	70%	19	76%
MSU	8	16%	5	15%	5	20%
Togo	5	10%	5	15%	1	4%
Gender						
Female	24	47%	19	58%	14	56%
Male	27	53%	14	42%	11	44%
Total	51	100%	33	100%	25	100%
Survey Participation Rate						49%

More than half of the participants in the survey were females (56%), with 14 females; and 11 participants were males, comprising the other 44%. Furthermore, 19 females comprise the majority (58%) of the ANR491 courses' passed population, while the males came to 42% with 14 students. However, males were the majority (53%) with 27 students from the ANR491 total population, and females were the minority (47%) with 24 females. See Table 2

These changes in ANR491 courses' population volume and gender density, such as the decrease in the males' population from the majority to the minority and the increase in the females' volume vice versa, are due to the students' withdrawal from the courses or to failure of the courses, especially the males. For instance, the number 51

represents the total number of male (27) and female (24) students who registered for the ANR491 courses. On the other hand, merely 33 students were able to continue the program and pass the courses, whereas 18 students were not able to continue the program and pass the courses because they either withdrew from the program or failed the program. At the end of the semester, the male population decreased from 53%, which is 27 students, to 42%, which is fourteen students. The female population increased from 47%, or 24 students, to 58%⁶, or 19 students. Although the female population decreased from 24 students to 19 students, the female population turned from a minority to a majority due to the decrease in the male population, which was greater than the decrease in the female population, from 27 to 14 students.

In addition, although female participation in the survey was greater than that of the males' with respect to the participants' numbers (14 females to 11 males), male participation in the survey was greater than females' regarding the total number of students who passed the program by gender⁷.

Participants were asked to indicate their primary area of study. This question is attempted to illustrate students' area of study. The total number of students who answered this question was 22 students' (N=22). Computer science was the highest choice, with 6 students (27%), whereas physical science was the lowest choice, with 1 student (5%).

⁶ 58% comes from the total number of students who finished the course, which is 33 students.

⁷ 78% comes from 11 males from the total number of males who passed the program (14); 73% comes from 14 females from the total number of females who passed the program (19).

The rest of the students' primary areas of study are distributed as shown in Table 6. However, none of the participants indicated his/her study area as social science.

Computer science and engineering were the major primary academic areas for 10 K.S.A. students (59%)⁸, while business was the minor primary academic area, with 1 student (5%)⁹. Business was the primary area of study for 50% of MSU students, with only 2 students; however, computer science and physical science were the minor areas of study for 25% of students (1 student each). Togo students' primary academic area was business by 100%.

Computer science was the primary study area for 45% of females (5 students), while engineering, business, and art were the primary study areas for 54%¹⁰ of females. Medicine was the primary study area for 36% of males (4 students), and 27% of the males (3 students) had an engineering background; 2 students (18%) had business backgrounds, while another 18%¹¹ had either computer science or physical academic backgrounds.

Finding merely four students that had a business background illustrates that an entrepreneur could have a different academic background, and yet still be interested in business activities and make a successful business entrepreneur. On the other hand, having a business background is not a guarantee to be a successful businessman/woman. In addition, the finding that 100% of Togo students had a business background is not

⁸ Computer science (29%), Engineering (29%).

⁹ Numbers associated with each country are based on total student number in each field over the total number of each country's students.

¹⁰ 2 engineering students, 2 business students, and 2 art students.

¹¹ 9% each.

necessarily true, due to the low number of participants in the survey (only 1 student)—other Togo students might have had different primary academic backgrounds, but the survey could not record it. Furthermore, most K.S.A. students had computer and engineering academic backgrounds, while most MSU and Togo students had a business background, and this could explain why there are a noticeable number of K.S.A. students that had dropped out of the ANR491 program courses after couple of weeks or failed at the end of the semester. Females and males had the same percentage for students with business backgrounds (18%), which is low compared to 45% computer science (females) and 36% medicine (males). Students had different motivations to take the ANR491 program courses that were not related directly to their primary areas of study, such as self-interest in entrepreneurship topics or self-improvement.

B. Students' Assessment Prior to the ANR491 Program

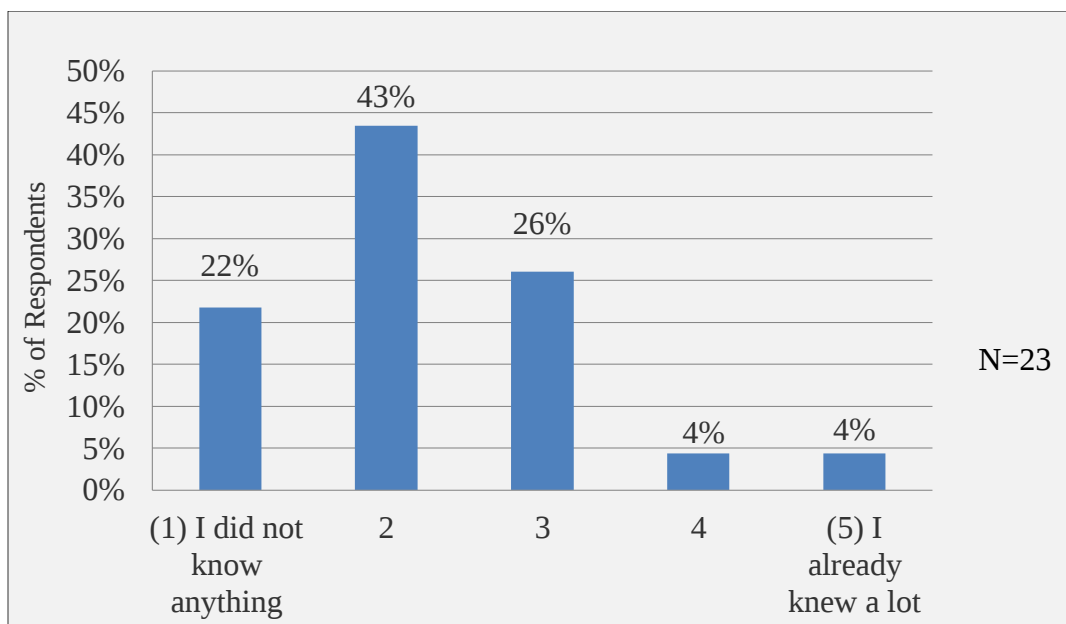
This section looks into students' knowledge about entrepreneurship, students' motivation to take this course, how they were preparing to take this course, their rating for that preparation, their business experience, their interaction with students from different cultures/countries, and the value of interaction prior to taking the ANR491 courses.

The questionnaire asked ANR491 students the following question on a scale from 1-5: "How much did you know about entrepreneurship subject before attending this course?"¹² 23 out of 25 students responded to this question. 22% of students reported that they did not know anything about entrepreneurship until they took this course; 43% of

¹² The question scale is from 1-5, (1) I did not know anything, (2) Below average, (3) Average, (4) Above average and (5) I already knew a lot.

students chose number 2 (below average), which was the highest choice; and 26% of students chose number 3 (average). 4% of the students indicated that number 4 (above average) was the best description for their prior knowledge about entrepreneurship subjects, and another 4% of students reported that they already knew a lot about entrepreneurship. See Figure 4 below.

Figure 4: Students' Knowledge about Entrepreneurship Subjects Before Taking the ANR491 Program, spring semester 2012



Most K.S.A students stated that their prior information about entrepreneurship topics was “average” or “below average” (88%), while the rest of the K.S.A students (12%) reported their knowledge as “above average” or already knowing a lot about entrepreneurship subjects. 60% of MSU students assessed their knowledge as “average,” while 40% were “below average.” 100% of Togo students described their knowledge as “below average.”

8% of females selected “I already knew a lot about entrepreneurship,” and 17% chose “average” to represent their knowledge about entrepreneurship prior taking ANR491 courses. Five females, or 41% of the total females, reported that their knowledge of entrepreneurship prior to attending the ANR491 program was below average, and 33% of females said, “I did not know anything about entrepreneurship subjects.” On the other hand, 9% of males (1 student) chose “above average” to represent their knowledge about entrepreneurship, while 36% of males chose “average” to symbolize their knowledge. 45% of males, or 5 students, selected below average; 9% of males chose option one, “I did not know anything about entrepreneurship subjects.”

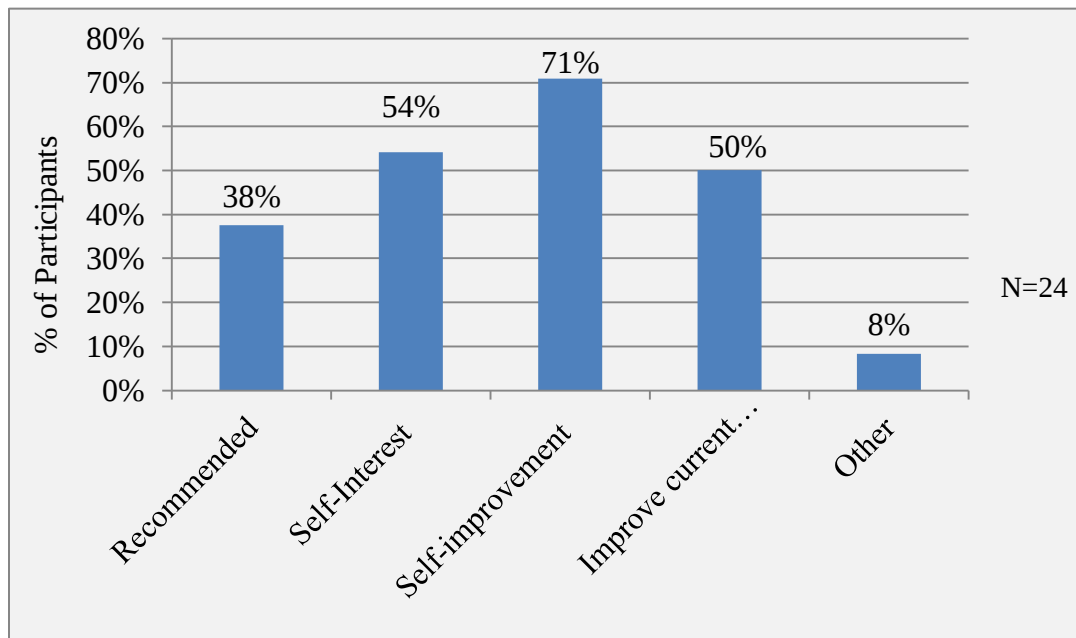
The discovery that more than half of the ANR491 students (65%) did not know anything about entrepreneurship or had very little information about entrepreneurship subjects prior attending this program was not surprising, due to several reasons. For instance, most ANR491 students (82%) had different knowledge backgrounds or interests prior to attending the ANR491 program, and these interests were not involved with any business studies or activities¹³. In addition, for MSU students, ANR491 entrepreneurship courses are elective courses; this means that they are not a part of any degree or program at MSU, and students are not obligated to take these courses.

Participants have been asked to choose from multiple motivational options: “Which option(s) motivated you to take this program? Apply all options that fit.” Responses brought the following results. The total participants consisted of 24 people

¹³ For more details about students’ knowledge backgrounds, see “Students’ Knowledge about Entrepreneurship” section.

(N=24); self-improvement was the highest option that been selected by participants—about 71%¹⁴ of participants selected it as their first motivator to take ANR491 courses. “Other” was the lowest option that had been selected by participants: 4% of participants selected it as their last motivator to take this course. See Figure 5 below.

Figure 5: Students’ Motivation to Take ANR491 Program, spring semester 2012



Self-improvement was the first option for K.S.A. participants, and “recommended” was the last option; self-interest was the first option for MSU participants, whereas “recommended” was the last option. Moreover, “self-improvement” was the first option for Togo participants, while “improve current business” was the last

¹⁴ The total percentage for this question will exceed 100% due to the fact that participants had the choice to select more than one option; for instance, if a participant can select all options that have motivated him/her to take this program, this will result in the total number of responses exceeding 100% responses as the total.

option. “Self-improvement” was the first option for females, and “other”¹⁵ was the last option; “self-improvement” was the first choice for males, and “recommended” was the last choice.

Comparing the results that we obtained from the participants regarding their countries shows that K.S.A. and Togo students had similar motivations to join this program: They both chose “self-improvement” to be their first motivator, whereas “self-interest in entrepreneurship topics” was the first motivator for MSU students, and “self-improvement” was one of the latter options. Furthermore, most females and males also had a similar motivation to join this program, which was “self-improvement”; yet they had different opinions about their last choice, because females chose “other” the least and males chose “recommended” the least.

Finding that the majority of the participants selected the ANR491 program to improve themselves was expected because of multiple reasons. First, self-improvement is the major goal behind the education process for most students. Second, ANR491 is a multicultural course offering great an opportunity for the students to improve themselves by interacting with students from different cultures and countries and gain adequate entrepreneurship knowledge that shapes their skills and abilities. “Self-interest in entrepreneurship topics” was the highest choice after the self-improvement option; more than half of the participants chose “self-interest” as the second best reason that motivated them to take this course. Although about 81% of participants came from study areas that are not related to business, entrepreneurship topics have been obtaining a lot of their interest and prompting them to study this topic. Discovering that 57% of the

¹⁵ One student wants an online course.

participants' interest in entrepreneurship topics was amazing, regarding the students' study area and their previous knowledge about entrepreneurship topics. This questionnaire¹⁶ indicated that about half of the participants have a job or have worked in business. Having a job or working in business was the motivator for more than half of the participants; by attending this program, participants planned to gain valuable knowledge that would help them to improve their current job or business. 42% of the participants were recommended to take this course by instructors, parents, or friends, and only one student (4%) reported that she wanted an online course.

Moreover, the participants were asked to indicate how they were preparing themselves to attend this program. The total number of participants that answered this question was 24 (N=24). Most participants were preparing for this program by reading courses' syllabi, while the least of the participants were preparing for course by taking other online courses. See Figure 10: Appendix 2 for more details.

Furthermore, reading the course syllabus was what most K.S.A. participants did, while taking online course was the preparation that K.S.A. did least. For MSU participants, reading the course syllabus was the most common act, while taking an English course was the least. Togo participants chose reading the course syllabus to be their first action, while taking an English course and reading books about entrepreneurship were the least chosen actions.

Reading the syllabus was the most popular act for females, and taking online courses was the least. For males, reading the course syllabus was the first action, while

¹⁶ See business experience section.

taking online courses was the last action. The females' and males' choices for this question were the same: They both chose reading the course syllabus to be their first act and taking online courses to be their last act. The questionnaire results do not bring any different outcomes by gender.

The obtained results about how each country's participants prepared demonstrate that all participants from K.S.A., MSU, and Togo shared the same highest preparing act (reading the course syllabus). On the other hand, the results showed that the number of MSU participants who chose the option of taking an English course was low. The fact that taking an English course was the least chosen action by MSU participants is due to English being the official language at MSU, so all MSU students must know how to speak, write, and read in English before joining in any program, and more international students would be willing to take an English course. For Togo participants, preparations were evenly divided between three main actions. Furthermore, K.S.A. participants chose taking online courses to prepare for this program more than the other students (60%)¹⁷. Merely nonnative English speakers either from MSU, Togo, or K.S.A. reported that they took an English course in process of preparing themselves for the ANR491 program and that it is understandable for participants that English is not their first language.

After indicating how the participants were preparing themselves for the ANR491 program in section 1, the questionnaire then asked participants to rate their preparing for

¹⁷ 60% of the total number of participants indicated that they took at least one online course preparing themselves for this program.

this program on a scale of 1-5¹⁸. 23 students responded to this question. The highest number of participants (9), which is 39% of the total participants, selected option 3; while the lowest number of participants (2), which is 9% of the total participants, selected options 1 and 4¹⁹. 5 participants (22%) rated their preparing for this program as 2 or 5²⁰. See Table 7: Appendix 1.

“Average” and “below average” were the highest options that had been selected by K.S.A. participants, while the “above average” option was the lowest that been selected. “Average” was the highest option that been selected by MSU participants, whereas “above average” and “very prepared” were the least chosen options. Moreover, the “below average” option was the highest choice for females, and the “very prepared” option was the lowest choice, while the “average” option was the highest choice for males, and “above average” was the lowest choice.

Overall, the large number of participants rated their quality of preparation as “average,” and the rest of the participants were either “below-” or “above average.” The large number of participants who chose “very prepared” were from K.S.A.; at the same time, the few participants who chose “very unprepared” were from K.S.A. as well, and this can be explained due to each participants’ preparing actions, interests and background. On the other hand, regarding the total number of participants by each country, Togo participants were the most prepared students, followed by MSU and then

¹⁸ (1) Very unprepared, (2) Below average, (3) Average, (4) Above Average, (5) Very prepared.

¹⁹ Two students each.

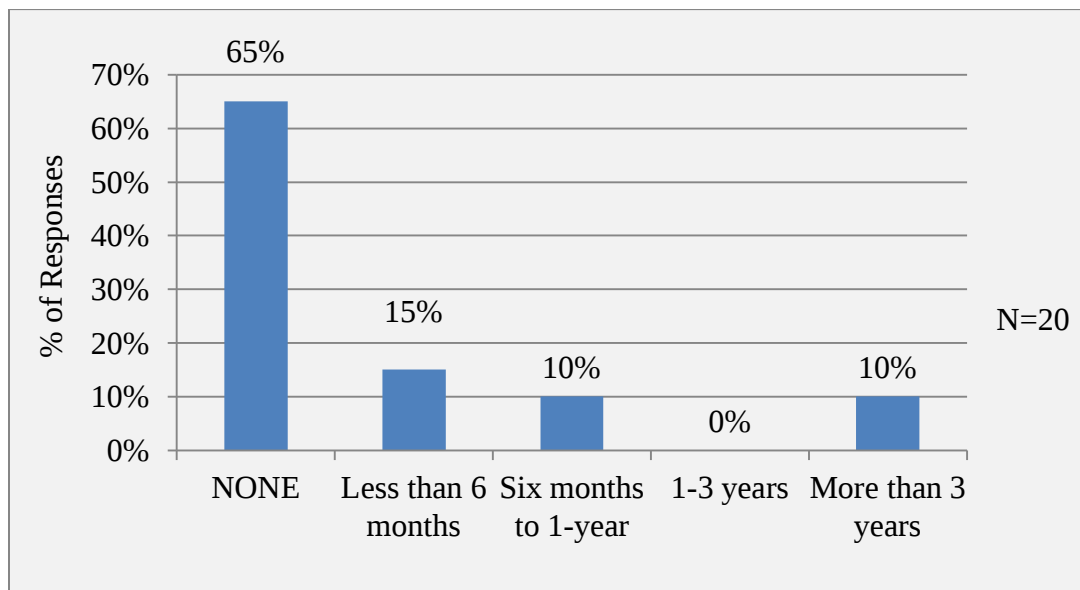
²⁰ Five students each.

K.S.A students. These differences between participants' preparation are due to experiences with online programs, language, and other courses' schedules.

This following section will reveal participants' business experience, their role in that business, and the type of business they have been working on.

Participants were asked to rank their level of business experience before attending this program; 20 participants participated in this question. The majority of the participants (65%) did not work in any business. 15% of participants had business experience lasting less than 6 months, while 10% of participants had work experience between 6 months and 1 year. 10% of participants had more than 3 years of experience. See Figure 6.

Figure 6: Participants' Business Experience Length Before Attending ANR491 Program, spring semester 2012



Most K.S.A. participants did not have any business experience, while only two students had business experience for less than six months. On the other hand, all MSU participants had business experience; their experience was distributed between either less than 6 months or more than 3 years. The survey could not record any business experience for Togo participants because no Togo students participated in this question.

“None” was the most chosen option for females, while “more than 3 years” was the least-chosen option. Moreover, “none” also was the most chosen option that had been selected by males, whereas 6-1 years was the least chosen option.

Finding that the majority of the ANR491 program participants did not have any business experiences was surprising; however, it could be explained from a cultural perspective. For instance, all of the participants who reported that they did not have any business experience were from K.S.A., and regarding most Arab Gulf countries’ culture, students who study at colleges and universities do not work until they graduate because they have been supported by their families. Furthermore, education at K.S.A. universities is free, so students would not need to work to cover their education tuitions.

Participants were asked to describe the type business they had been working on. The total number of participants was 7 (N=7). The majority of the participants (57%) had worked at corporate companies, while a mere 14% worked in government sectors. In addition, 43% of participants worked in family businesses, whereas 29% of the

participants worked on their own business. 29%²¹ of participants worked with nonprofit organizations. See Figure 11: Appendix 2.

K.S.A. participants had worked in different business types, such as their own business, family businesses, and corporate and nonprofit organizations. On the other hand, MSU participants worked at either corporate businesses or their own businesses. There was not any business type for Togo participants.

All females who participated in the survey were from MSU. Females had worked at family businesses, corporate businesses, and nonprofit organizations, while males worked at their own businesses, corporate businesses, and government sectors.

Discovering that all females who participated in this question were only from MSU was not surprising because, as mentioned earlier, all females from K.S.A. are undergraduates and most students in Arab gulf countries do not work during college. None of the Togo students participated in this question.

The questionnaire asked participants to indicate their role in the business they had been working in. The number of participants was seven (N=7). 71% of participants worked as employees, 43% worked as managers or supervisors, 14% worked with partners, and 14%²² were owners. See Figure 12: Appendix 2.

“Manager” or “supervisor” was the best description for the K.S.A. participants’ role in business, while “employee” was the best description for MSU participants.

²¹ Most participants’ who had business experience had worked on more than one type of business and that is the reason beyond the sum of participants’ work types exceed 100%.

²² Most participants who worked at businesses had more than one role, and that is the reason why the sum of the participants’ work roles exceeds 100%.

There was no business role recorded for Togo participants because no Togo students answered this question.

“Employee” was the highest choice that represented the business role for most females (67%), while “manager” or “supervisor” was the lowest chose. On the other hand, “employee” was the business role for 43%²³ of males, while 29%²⁴ were supervisors or managers, whereas “partner” and “owner” were the business roles for 14% of males. Females and males both chose “employee” the most as the role that represents the role in business they had before attending the ANR491 course, which matched the real life for many undergraduate students.

Finding that 71% of the participants worked as employees and 43% worked as a managers or supervisors is normal, because enormous numbers of students are working as employees or supervisors while studying at a university to pay their tuition and living expenses. Prior facts will be stronger if we recall that all ANR491 students are undergraduate students with full time or part time schedules.

This section will disclose participants’ level of interaction with people from cultures or countries different from their own, and students’ opinions about taking an online course with people from different cultures or countries.

The questionnaires asked the participants’ to rank their level of interaction with people from cultures or countries different from their own. The total number of

²³ Number of males who chose “employee” as a business role to total the number of males who answered this question.

²⁴ While 25% of females worked as a supervisor or manager.

participants was 24 (N=24). 33% of the participants were interacting on average²⁵, 29% were below the average, 13% had never interacted with people from different cultures or countries and this was their first time, and 26% of participants were above average or frequently interacting with people from different cultures or countries (13% each). See Table 8: Appendix 1.

Below average was the top choice for K.S.A. participants, while frequently was the bottom choice. Average was the highest choice for MSU participants, whereas frequently was the lowest choice. Togo participants chose average to represent their level of interaction.

Average was the most selected option by females, whereas never was the least selected option. However, above average and below average were the most selected options by males, while frequently was the lowest option selected by males.

Finding that the level of interaction for 42% of the participants is below average or nonexistent with people from different cultures or countries than their own was noteworthy; there are several reasons that led to these results, such as culture, language barriers, and technology.

The majority of K.S.A. students were females, so interaction with other cultures or countries is very restricted. On the other hand, language is one of the most effective barriers that reduce peoples' abilities to interact. Technology restriction such as connecting to the internet is a major issue for Togo students, and that problem was clear

²⁵ Question scale is from 1-5, (1) I Never, this is the first time, (2) Below average, (3) Average, (4) Above average and (5) Frequently.

during the spring semester of 2012, when Togo students struggled with interacting or sending their homework several times due to internet connection issues.

The questionnaire asked the students from 1-5 scale how they would rate the effectiveness of taking an online course with students from different cultures or countries on their abilities to learn new knowledge about entrepreneurship and develop new entrepreneurial skills. 22 was the total number of students who participated in this question (N=22). The highest number of participants (45%)²⁶ reported that it would significantly improve their abilities to learn, while the lowest number of the participants (5%) reported that it would reduce their ability to learn. See Figure 13: Appendix 2.

Most K.S.A. students were sure that having a multicultural program would significantly improve their abilities to learn. Furthermore, the same results were found for MSU participants, and all Togo participants were positive about effectiveness of having a program with students from different countries and cultures on their abilities and skills as well.

“Significantly improve their abilities to learn” was the most selected option by females. Moreover, “significantly improve their abilities to learn” was also the highest selected option by males. On the other hand, all students that were unsure about the effectiveness multicultural courses were females, and these results are understandable, because this question had been asked during the semester and it is normal for some

²⁶ Question scale is from 1-5, (1) It will significantly reduce my ability to learn, (2) Below average, (3) Average, (4) Above average, (5) Significantly improve my ability to learn, and I don't know.

students not to be sure about the results of this course on their abilities at the end of the course.

Overall, most students agreed that having online courses with multicultural students would help them to improve their abilities to learn, while few students disagreed and thought those courses would reduce their abilities to learn or were not sure about that.

C. Students' Abilities and their Entrepreneurial Capabilities During the ANR491 Program Courses

This section will assess students' abilities to create new business ideas, persuade people to follow their new ideas, and discover new opportunities, as well as their responding to new business opportunities, levels of interest in new opportunities, and funding sources.

Asking participants to rate their abilities to create new business ideas brought the following results. The total number of participants was 23 (N=23). 35%²⁷ of the participants believed that they were always able to create new business ideas, so they chose option 5; whereas none of the students rated his/her ability as a 1, or "never able to create new business ideas." See Figure 14: Appendix 2.

The majority of MSU participants (60%) reported that they are always able to create new business ideas; 29% of K.S.A. participants chose option 5, or always able to create new business ideas to represent their abilities; Togo participants were the few

²⁷ Question scale is from 1-5, (1) Never able to create new business ideas, (2) Below average, (3) Average, (4) Above average, (5) Always create new business ideas.

students below average, and they chose option 2 to represent their abilities to create new ideas.

Half of the females believed that they are always able to create new business ideas, while only 11% of males were sure of this.

Finding that most MSU participants were always able to create new business ideas could be due to their business backgrounds and/or business experience, which is higher than that of K.S.A. or Togo students. For more details, see Table 9: Appendix 1 and Figure 5: Appendix 2.

The discovery that merely 35% of ANR491 participants had rated their abilities as always being able to create new business ideas was not surprising due to several reasons. First, it is not logical to assume that all students will choose option 5 (always able to create new business ideas) because the major purpose of taking this course for most students was to improve their abilities and skills. Second, the survey was conducted during the semester, so many students were not certain about their level of abilities at that time.

Finding that females are more able to create new business ideas than males was an interesting result. However, merely two female participants had worked in business before, and finding that females were more confident as new businesses creators than males may be due to females' having abilities to create new businesses, but then being unable to imply their ideas or having unavailable resources, or perhaps other hidden reasons the survey could not record.

Trying to indicate ANR491 students' persuasion abilities drives one to ask the next question: "On a scale from 1-5, please rank your ability to persuade other people to follow new ideas." 22 students answered this question. The highest number of participants (9), which is (41%), believed that their abilities to persuade other people to follow their ideas were average. The lowest number of participants (2), which is 9%, believed that their abilities were below average. The questionnaire did not record any responses for option 1 (never able to persuade other people), due to the fact that none of the students chose this option. See Figure 15: Appendix 2.

Average was the most chosen option by K.S.A. participants. Average was also the most chosen option by MSU participants. Togo participants had chosen below average to represent their abilities.

An average ability to persuade other people to follow their new ideas was the most selected by females, while average and above average were the most selected by males.

According to earlier results, most K.S.A. & MSU participants on average were able persuade other people to follow their ideas, while Togo participants had less abilities to persuade other people to follow their ideas. Persuasive abilities are different from one person to another, and it depends on people's experiences, education, and abilities.

Only 18% of ANR491 participants had rated their abilities to persuade others as always being able to persuade other people to follow their ideas; this was not surprising for multiple reasons. First, trying to persuade others with contemporary ideas is not quite

easy. Second, the survey was conducted during the semester, so most students were not sure about their abilities at that moment.

The participants had been asked to rate their abilities to discover new business opportunities. 23 participated in answering this question. The highest number of participants, 39% (9 students), anticipated that their abilities are best described by option 5²⁸ (always able to discover new business opportunities). The lowest number of participants, 4% (1 student), were not sure about their abilities and chose the “I do not know” option. See Table 9: Appendix 1.

“Always able to discover new business opportunities” was the highest option that had been selected by K.S.A. participants. “Always” and “average” were the most frequent options that been selected by MSU participants.

The majority of the participating 19 students (83%) had sufficient abilities to discover new business opportunities, whereas merely 4 students (17%) did not have sufficient abilities to discover new business opportunities or were not confident about their abilities.

K.S.A. participants were the most confident students about their abilities to discover new business opportunities, followed by MSU participants, and then Togo participants.

Finding that K.S.A. participants were the most confident ANR491 program students about their abilities to discover new business opportunities was surprising,

²⁸ Question scale is from 1-5, (1) Never able to discover new business opportunities, (2) Below average, (3) Average, (4) Above average, (5) Always able to discover new business opportunities, and I don’t know.

because most K.S.A. students did not have any business experiences prior to attending this program. Their confidence about their abilities to discover new business ideas might be due to the knowledge they obtained while they were in the program.

The questionnaire asked participants to illustrate if they were to find a new business opportunity, how they would likely respond. The total number of participants was 23 (N=23). “Start your own” was the highest option; 48% of the participants chose this option to represent their first response toward new opportunities that might occur in the market. 9 participants (39%) chose “collaborate with others” to fulfill new business opportunities, making it the second most frequent option. “Do nothing” and “tell others about the opportunity and nothing more” were shared as the least chosen options by participants, with 4% each. Furthermore, one participant chose “other” to represent her response to new business opportunities; however, she did not illustrate what kind of response she would make. See Table 10: Appendix 1.

“Start your own business” was the highest choice for K.S.A students (59%)²⁹ while “Tell others about the opportunity and nothing more” was the lowest choice (5%). “Collaborate with others to fulfill customer and/or business need” was MSU participants’ most chosen option, at 40%, whereas, “do noting” and “other” were the least chosen options, with 20% each. 100% of Togo participants chose “collaborate with others to fulfill customer and/or business need” to represent their response to new business opportunities in the market. K.S.A. students were the most risk bearers: 91% of K.S.A. students were eager to start their own new business as a response to new business opportunities in the market. On the other hand, merely one MSU student (9%) chose the

²⁹ Source: Students survey

“start your own new business” option, and none of the Togo students chose this option. MSU and Togo students were less risky, so they chose to avoid the consequences of uncertainty by collaborating with others. Therefore, “collaborating with others to fulfill customer and/or business need” was the particular option that represented most of MSU and all Togo students’ responses.

“Collaborate with others to fulfill customer and/or business need” was the highest option that been chosen by females, while “do nothing” and “other” were the lowest. “Start your own business” was the most frequent option that been chosen by males, while “Collaborate with others to fulfill customer and/or business need” was the lowest choice. Finding that males were more risky than females was obvious regarding earlier results, and that is understandable due to nature of males, which is more risky than females (Harris & Jenkins, 2006).

Finding that most participants (87%) would make quick decisions about new opportunities in the market despite the fact these new opportunities could be uncertain may be explained as a normal response due to the behavior of most entrepreneurs (risk bearers).

The participants had been questioned to rank their interest in a new opportunity that is not related to their current business or knowledge field. 21 total responses were counted (N=21). The highest choices were option 5 (very interested) with 33% of participants, while options 3³⁰ (average) and 4 (above average) were the lowest, with

³⁰ Question scale is from 1-5, (1) No interest, (2) Below average, (3) Average, (4) Above average, (5) Very interested.

19% participants each. On the other hand, none of the participants chose option 1 (not interested). See Figure 16: Appendix 2.

7 participants from K.S.A. had shown high interest in new opportunities that are not related to their current businesses or knowledge fields, with 100%³¹, which is the total number of participants who chose option 5 (very interested). MSU participants interested in new opportunities that were not related to their current businesses or knowledge fields were mainly above average, and the rest were average. Togo students showed a low level of interest in new opportunities that were not related to their current businesses or knowledge fields (below average).

Furthermore, “very interested” was the most frequent option that been chosen by females, while “no interest” was the least. On the other hand, “above average” was the most frequent option that been selected by males, while “average” was the least.

According to the results that were obtained from the survey, students’ interest in a new opportunity that is not related to their current business or knowledge field is varied due to the uncertain results the new opportunities would contain or due to unrecognized participants’ reasons.

K.S.A. students were in first place, followed by MSU students and Togo in the last place, regarding their interest in new opportunities that are not related to their current businesses or knowledge fields.

Overall, males were stronger than females in their interest in new business opportunities that are not related to their current businesses or knowledge fields.

³¹ Source: Students survey

However, finding that the majority of participants who chose “very interested” were females was surprising. Females who have a high level of risky are a low in number compared to the total females’ numbers.

Asking participants to rank funding resources they might use to start their new businesses from the first option to the last option brought the following results. 23 students participated in this question (N=23). “Self-saving” was the most chosen option to fund new business for 48% of the participant’s. “Family” was the second option 35%, “Banks” was the third option (30%), non-profit organizations was the fourth option (22%), and college loans (entrepreneurial centers) was the fifth option (17%) that might have been chosen to fund any new businesses. “Government loans” was the last option participants would consider as a possible fund resource to fund their new businesses, at 26%. On the other hand, 4% of the participants had chosen different funding resources to start with from what was listed earlier as possible funding sources, such as crowd funding. See Figure 17: Appendix 2.

“Self-saving” was the first choice for the majority of K.S.A. participants³²; “government loans” was the first choice for half of MSU students, while “self-saving” was the first choice for Togo students. Both K.S.A. and Togo students chose self-saving to fund their new businesses, and that could be due to sufficient saving for participants (who chose self-saving) to fund their new businesses.

“Self-saving” was the first choice for females and males. This result matches earlier participant choices’ results about the possible funding resources for new business.

³² Source: Students survey

Finding that 48% of the participants had chosen self-saving as their number one funding source was surprising, because the majority of investors or people who want to start new businesses would search for external funding resources to fund their new businesses. The fact that the highest number of ANR491 students depend on their internal funding resources might be due to participants' willingness to start small business that fit their budget rather than starting with large a business.

Participants had been asked to rank the influence of selected factors on their judgment about the value of innovation³³. 23 students participated in this question (N=23). According to 43%³⁴ of the participants, customers' demands was the first factor that would influence their judgment about innovation. Cost of innovation was the second highest factor of influence (39%), riskiness of innovation came in third place with 30%, and 35% of the participants chose cultural restrictions as the lowest factor that might affect their judgment about innovations. However, 13% of the participants reported that there are others factors that influence their judgment, but they did not reveal what kind of factors. See Figure 18: Appendix 2.

Customers' demand was the highest choice for K.S.A. participants, while the cost of innovation was the highest choice for MSU and Togo participants.

³³ The scale is from 1-5, please rank (1=highest, 5=lowest).

³⁴ This question is a multi-answer question, so participants can choose more than one option, as long as the results of the responses are arranged regarding which factor got the higher responses and so on.

Cost of innovation was the highest factor that would influence females' judgment about innovation³⁵, while males had multiple factors that shared the same level of influence, which were customers' demands, riskiness, and cultural restrictions.

Finding that customers' demands was the most chosen factor in affecting ANR491 courses' participants' judgments is not surprising, because part of innovating is responding to customers' needs to make their lives easier and better.

It is noticeable that among all of the factors that might influence students' judgment about innovations, K.S.A. participants paid more attention to customers' demands rather than others, and that could be due to various reasons. For instance, there is a promising market in K.S.A., so many customers are looking for luxuries, goods, and services, and the opportunities to fulfill customers' needs are abundant because customers are willing to pay to get those goods. Furthermore, the cost of innovations (labor, capital, etc.) is cheaper in developing countries, such as K.S.A., compared to more developed countries like the U.S. where the costs of labor, capital, technology, etc. are higher. On the other hand, MSU participants paid more attention to the cost of the innovation. For Togo participants, cost of innovations is also the main concern, due to the customers' constrained budgets.

The difference in females' and males' responses could be due to different privileges each gender has, which may have influenced the judgment from females' and males' perspectives.

³⁵ Source: Students Survey.

The questionnaire asked participants to consider the following scenario. “You are a successful businessperson and you identify a new business opportunity that could lead to even greater success in the future, but the outcome is very uncertain. How much time would you devote to this new business opportunity?” The major purpose beyond this question was to indicate participants’ riskiness level. 22 students responded to this question (N=22). 27% of the participants selected 41-60% of their time, making this the most frequent option chosen, while only 5% of the participants selected 1-20% of their time, making it the least frequently chosen option. The rest of the participants’ choices were as follows: 18% of participants selected 21-40%, 18% of participants selected 61-80%, 9% of participants selected 80-99%, 14% of participants selected “I would quit my current job/business to devote all time to the new venture,” and 9% reported that they do not know what they would do. Furthermore, the survey did not count any responses of “0%—I would not risk my current success.” See Figure 19: Appendix 2.

All of the risk bearers’ participants were from K.S.A., and 61-80% (risk seekers) was the highest option that been chosen by K.S.A. students. Risk neutral (41-60%) was the first choice for half of MSU students and all Togo students. The survey found that K.S.A. students are more risky than MSU and Togo students are.

Risk neutral (41-60%) was the highest option³⁶ that been selected by females, while risk bearers (I would quit my current job/business to devote all time to the new venture) was the highest selected option by males. These results were not surprising due to the fact that in real life, males are more risky than females, and the survey results expose that fact.

³⁶ Sources: Students Survey

The earlier results illustrated that students have different levels riskiness. Half of the participants (50%) were either risk neutral (27%) or risk averse (23%)³⁷. Alternately, 41% of participants were either risk seekers (27%)³⁸ or risk bearers (14%). 9% of the participants were not sure about staying with their current business or quitting and devoting all of their time for new venture. Moreover, although the question scenario explained that their current business is successful, none of the students decided to maintain that success and not change it to avoid riskiness.

D. Students' Abilities and Capabilities Post-ANR491 Course

This section will discuss the student's knowledge and influence to start new businesses in the next 5 years, and their abilities to create or discover new business ideas after taking ANR491 courses.

The questionnaire asked participants the following question: "Do you think this program increased your knowledge about entrepreneurship?" 20 students participated in this question (N=20). Most ANR491 students were positive about the knowledge they gained: 18 students (90%) of participants answered "yes" (this program did increase their knowledge of entrepreneurship). 10% of the participants were not quite sure if this course increased their knowledge of entrepreneurship or not, while none of the participants answered "no" (this program did not increase their knowledge of entrepreneurship). See Figure 20: Appendix 2.

³⁷ 5%+18%=23%

³⁸ 18%+9%=27%

87%³⁹ of K.S.A. participants were certain that the ANR491 program did increase their knowledge levels pertaining to entrepreneurship, whereas 13% of K.S.A. participants' were uncertain about if the ANR491 program increased their knowledge levels about entrepreneurship or not. 100% of MSU and Togo participants were sure that the ANR491 course did increase their knowledge levels about entrepreneurship.

82% of females answered yes, this course did increase their knowledge levels about entrepreneurship, while the other 18% were not certain about the knowledge they obtained. On the other hand, all males (100%) answered yes, this course did increase their knowledge levels about entrepreneurship.

The observation that 90% of ANR491 students believed that this course increased their knowledge about entrepreneurship was significant, compared to students' knowledge levels about entrepreneurship subjects prior to taking this course. See Figures 4 and 17: Appendix 2.

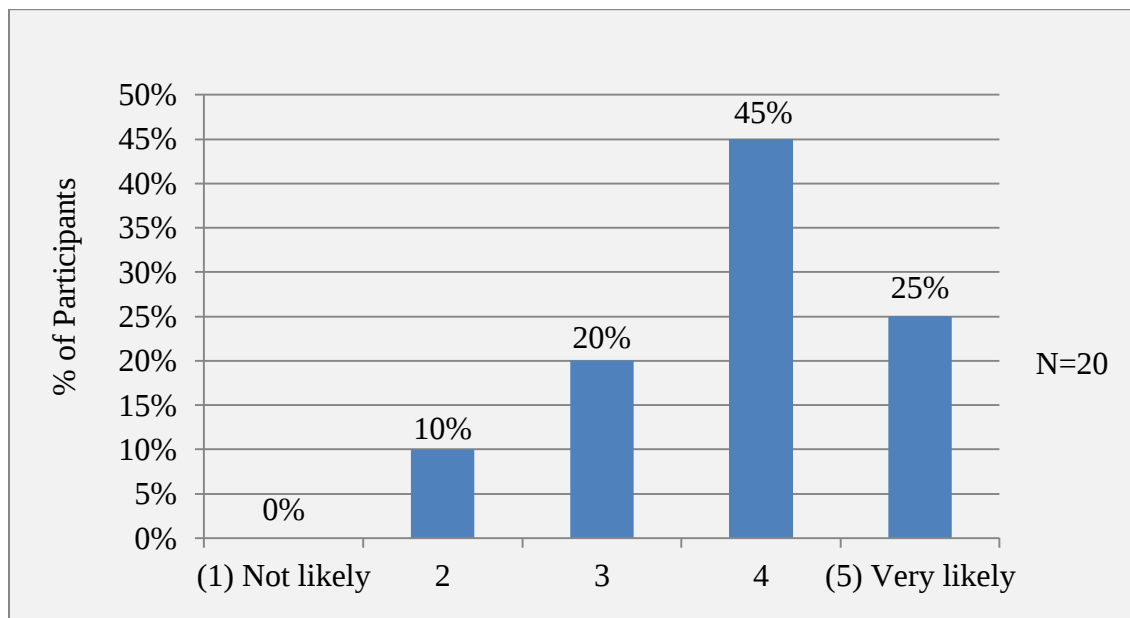
The questionnaire asked participants to illustrate how much the knowledge that they gained in this program will influence their decision to start a new business in the next 5 years. 20 participants responded to this question (N=20). Option 4 (above average) was the highest option that been selected by participants, with 45%⁴⁰, while option 2 (below average) was the lowest option that been selected by participants, with 10%. Finally, none of the participants reported that this program would not have any influence on their decision to start a new business in the next five years. See Figure 7 below.

³⁹ Source: Students Survey

⁴⁰ The question scale is from 1-5, (1) Not likely, (2) Below the average, (3) Average, (4) Above average and (5) Very likely.

Figure 7: The Influence of the Knowledge Gained in ANR491 on Students'

Decisions to Start New Businesses in the Next 5 Years, spring semester 2012



“Very likely” and “above average” were the most frequent options that been selected by K.S.A. students. “Above average” was the highest option that been selected by MSU students and by Togo students.

“Above average” was the number one option for females to represent the influence of the ANR491 courses’ knowledge on their decision to start a new business in the next five years, and this option was the number one option that been selected by males as well.

It is recognizable to note that although the course knowledge had different levels of influence on students’ decisions to start new businesses in the next five years, this course will have an effect on participants’ decisions to start new business in the next five years no matter the level of influence.

“Do you think this program did increase your ability to discover or create new business ideas?” was the question the participants had been asked to answer. 20 participants responded to this question (N=20). Most ANR491 students believed that this program did increase their ability to discover or create new businesses: 17 (85%) of the participants selected “yes.” 2 (10%) of the participants believed that this program did not increase their ability to discover or create new businesses, and they selected “no.” Furthermore, merely 1 student (5%) was not quite sure if this program did increase their ability to discover or create new businesses. See Figure 21: Appendix 2.

80%⁴¹ of K.S.A. participants were positive that ANR491 courses did increase their abilities to discover or create new business ideas, whereas 13% of K.S.A. participants were negative about the ANR491 program’s ability to increase their abilities to discover or create new business ideas. Merely 1 student (7%) was not certain if this program did increase their ability to discover or create new business ideas or not. On the other hand, all MSU and Togo participants (100%) were certain that the ANR491 program did increase their abilities to discover or create new business ideas.

“Yes” was the highest option that been chosen by females; 7 female participants (82% of females)⁴² believed that this program did increase their abilities to discover or create new business ideas. 18% of females were certain that the ANR491 program did not increase their abilities to discover or create new business ideas, and selected “no,” making it the least frequent option that been chosen by females. On the other hand, 89% of males were sure that this program did increase their knowledge levels about

⁴¹ Source: Students Survey

⁴² Source: Students Survey

entrepreneurship, and they answered “yes,” whereas merely one male student (11% of males) was not sure if this program increased his ability to discover or create new business ideas or not.

Linking these results to students’ abilities to discover or create new businesses during this program (see graphs 13 & 14) illustrate that overall, the ANR491 program did increase students’ abilities to discover or create new businesses for the most of the ANR491 programs’ students.

Participants had been asked to indicate if this this program did increase their abilities to start a new business. 20 students participated in this question (N=20). Most ANR491 students were satisfied with their developed abilities at the end of the semester: 18 students (90% of the participants) answered yes, this program did increase their abilities to start a new business. 10% of the participants were not sure if this program increased their abilities to start a new business or not, while none of the participants answered no, this program did not increase their abilities to start a new business. See Table 11: Appendix 1.

87%⁴³ of K.S.A. participants were certain that the ANR491 program did increase their abilities to start new businesses, whereas the other 13% of K.S.A. participants were uncertain if ANR491 courses increased their abilities to start new businesses or not. MSU and Togo participants were confident that the ANR491 courses did increase their abilities to start new businesses.

⁴³ Source: Students Survey

82% of females answered yes, this program did increase their abilities to start new businesses, while the remaining 18% were not certain if this program increased their abilities to start new businesses. On the other hand, males were more certain about their abilities: 100%⁴⁴ of males answered yes, this program did increase their abilities to start new businesses.

In general, most ANR491 students believed that the knowledge and the information they obtained in this program would help them to start new business or advance a current one.

E. Students' Assessment of the Value of the Multicultural Component of the Courses

This section will debate students' studying preferences and students' classmate preferences. Participants had been asked the following question: "When you were studying for this class, did you study alone or with other classmates?" 20 participants responded to this question (N=20). The highest option that been chosen by participants was option 3 (average) with 30%, and option 2 (below average) also with 30%. The lowest option that had been chosen was option 4 (above average) with 5%. 20% of participants never studied with any classmates, so they chose option 1 (never, I always studied alone). Alternately, 15% of the participants were always studying with other classmates, so they chose option 5 (always). See Figure 22: Appendix 2.

"Below average" was the most frequent option that had been selected by K.S.A. participants; "average" was the most frequent option that had been selected by MSU

⁴⁴ Source: Students Survey

participants; “always” was the most frequent option that been selected by Togo participants. Most females chose “below average” to represent their studying preferences, while “average” was highest choice for males.

Noting that the number of students who always studied with other classmate is quite low is not surprising for several reasons. First, in most online courses, there is a shortage of interaction between classmates due to the lack of face-to-face interaction (Matthew, Callaway, Matthew & Matthew). Second, the ANR491 students were from three different continents (North America, Africa, and Asia) with three different time zones, so most students would have difficulty find a time that worked for multiple people; length of study time would be another problem. Third, the quality of internet connection⁴⁵ also reduced students’ abilities to study together.

Togo students came in first place regarding their studying with other classmates, followed by MSU students, while K.S.A. students were in last place. Sharing information and doing the homework in groups follow students’ preferences and cultures.

It is interesting that males were more able to study with other classmates as opposed to females; this could be due to the lack of interaction, studying preferences (like finding it more comfortable to study alone), or other reasons the research could not capture.

The questionnaire asked participants to demonstrate if the classmates they had been studying with were from their own country, from a different country, or both. 16 students participated in this question (N=16). The majority of the students (56%) reported

⁴⁵ Source: Student observation

that they studied with classmates from their own country, while merely 13% of the participants had studied with classmates from different countries. Moreover, 31% of the participants studied with classmates both from their own country and from other countries. See Table 12: Appendix 1.

Most K.S.A. participants studied during the semester with classmates from their same country, while MSU and Togo participants studied with classmates from their same country and from other countries.

70%⁴⁶ of females were studying with classmates from their own country, while merely 10% were studying with classmates both from their own countries and from different countries. 50% of males studied with classmates from same country that they were from, whereas the other 50% of the males studied with classmates from both their own countries and different countries.

Finding that most participants studied with classmates from their own country is not surprising because of several reasons. The first of these is language: communication with classmates from same country who speak the same language is much easier than communication with classmates from different countries who speak foreign languages. The second factor is long distances: arranging a meeting with classmates to study together is easier if those classmates are from the same country due to the long distances between them. For instance, ANR491 students are located on three different continents, which makes arranging meetings with classmates to study together rather difficult.

⁴⁶ Source: Students survey

According to previous results, K.S.A. students were studying closely with classmates from their own country, whereas MSU and Togo students were studying with students from both their country and other countries. One of the major reasons that caused K.S.A. students to study with classmates from the same country is because this course was the first multicultural and online course for most K.S.A. students, and they either did not have previous experiences to study with classmates from a different country, or had scarce interactions of this sort.

Males were studying more with classmates from different countries than females, and this is because this course was the first multicultural and online course for most females students, and they did not have previous experiences to study with classmates from different countries, or had insufficient interactions with people from different countries.

Asking participants to reveal their preferences about future classmates that they would like to study with brought the following results. 19 students responded to this question (N=19). 16 students, or 84% of the total number of participants, reported that they would like to have classmates from their own countries and cultures as well as from different countries and cultures. 5% of the participants preferred their classmates to be from their own countries and cultures, while 5% of the participants wished to have classmates from countries and cultures different from their own. Furthermore, 5% of the participants still chose to study alone. See Table 13: Appendix 1.

Desiring classmates from their own countries and cultures and from different countries and cultures was the most frequent option that been selected by K.S.A.

participants, with 93%. Half of MSU participants and all Togo participants had most frequently selected the same option as K.S.A. participants.

Most females selected “classmates from their own countries and cultures and from different countries and cultures” for their future classmate preferences. Moreover, males also selected “classmates from their own countries and cultures and from different countries and cultures” for their future classmate preferences.

The results illustrate that there is a huge shift in students’ classmate preferences between their preference during the course and their future preferences. For instance, the percentage of students who liked to study with classmates from same country and culture as them declines from 56% to a mere 5% for future preferences. Furthermore, the 84% of ANR491 students that now prefer to study with classmates from their own countries and cultures as well as from different countries and cultures in the future compares to the 31% that preferred classmates from both to study with during the course.

Overall, most ANR491 participants liked the idea of studying with students from different countries and cultures, and now they prefer studying with classmates from different countries or cultures in future.

The questionnaire asked participants to rank how valuable it was to them to be in a class with students/instructors/entrepreneurs from other cultures/countries than their own. 20 participants responded to this question (N=20). 30% of the participants believed that having a multicultural course was very valuable, while 5% of the participants believed that having a multicultural course was not valuable. 10% of the participants

assumed that the value of a diverse course was above average (option 4)⁴⁷. 30% of the participants reported that the value of a multinational course was average (option 3). 25% of participants stated that the value of a multicultural course was below average for them. See Figure 23: Appendix 2.

Despite the fact all students who selected the value of multicultural course as “below average” or “no value” were from K.S.A., option 5 (very valuable) was the highest choice for K.S.A. students. Average (option 3) was the most frequent option that had been selected by MSU students. Very valuable (option 5) was the highest choice for Togo students.

“Very valuable” was the highest selected option for female students, whereas “average” was the highest selected option for male students. Females gave a multicultural course a higher ranking than males, and this might be because they liked this experience more.

In general, the number of students who believed that “on average” a multicultural course was valuable was high (70%)⁴⁸, and is greater than the number of students who believed that a diverse course had “below average” or no value (30%).

It is obvious that only K.S.A. students had ranked a multicultural course as “below average” or lower, and this might be because this program is the first multicultural course for most K.S.A. students, and the value of this program was not enough to convince some of them.

⁴⁷ Question scale is from 1-5, (1) Not valuable, (2) Below average, (3) Average, (4) Above average and (5) Very valuable.

⁴⁸ $30+10+30=70\%$

F. Students' Assessment of the Components of the Courses

This section will discuss ANR491 components, such as the pace (speed) of this course, the difficulty of this course, the difficulty of course requirements, and the effectiveness of course assistance tools. This section will also reveal students' opinions about their overall experience with msuENET and if they would recommend this course to others.

Participants had been asked to rate the pace of the courses. 20 students answered this question (N=20). The majority of participants (55%) believed that the courses' pace was average⁴⁹ (option 3). According to 25% of the participants, the courses' pace was fast (option 4), while 20% of the participants were convinced that courses' pace was very fast (option 5). Furthermore, none of the participants believed the courses' pace was slow or very slow. See Figure 24: Appendix 2.

"Average" was the most frequent option that been selected by K.S.A. participants, and the same option had been selected by half of MSU's participants, while "fast" was the most frequently chosen option for Togo participants.

"Average" was the most frequently selected option by females to rate the courses' pace. It was also the most frequent option that had been selected by most males.

Although the majority of ANR491 students are satisfied with the courses' pace, about 45% of students believed that it was fast or very fast. This could be because of multiple reasons. First, the semester started late due to administration issues. Second,

⁴⁹ Question scale is from 1-5, (1) Very slow, (2) Slow, (3) Average pace, (4) Fast, and (5) Very fast.

there was a delay in receiving course materials; ANR491 program students (as mentioned before) come from different continents, and it took time to deliver the courses' materials to them. Third, even when the semester started, students were still joining the course. Therefore, students were already trying to catch up with the course. On the other hand, instructors were trying to manage that, and to cover as much as they can from the course materials according to possible time.

The questionnaire asked the participants to rate the difficulty of these courses. 20 participants responded in this question (N=20). The majority of participants (55%) believed that the course difficulty was average (3)⁵⁰, while the minority of the participants (20%) believed that the course difficulty was easy (2). Moreover, (25%) of the participants reported that this course was difficult. See Figure 25: Appendix 2.

Option 3 (average) was the most frequent option that been chosen by K.S.A. participants, whereas option 2 was the lowest. On the other hand, “average” was the only option have been chosen by MSU students' and Togo students'. Option 3 (average) was the highest option that had been selected by females and males.

Discovering that the majority of ANR491 students consider the courses' difficulty “average” was remarkable. Courses difficulty levels were varying from one student to the next, and this judgment relies on students' skills and abilities.

Finding that the K.S.A. participants were the only students who rated this program “easy” was interesting. Understandable materials, clear chores, and instructors'

⁵⁰ Question scale is from 1-5, (1) Very easy, (2) Easy, (3) Average, (4) Difficult, and (5) Very difficult.

abilities to deliver courses knowledge all helped students to feel positive about the courses' difficulties.

The ANR491 program was easier for females than males, and that is matching our previous finding about the females' passing rate being higher than the males': females' passing rate was 37%, compared to a 27%⁵¹ passing rate for males.

Attempting to indicate the difficulty of the courses' requirements, the questionnaire asked participants to rank the courses' requirements' difficulty from the easiest to the most difficult. 20 students contributed to this question (N=20). More than half of participants (53%) reported that language requirements were the easiest course requirement, while 44% believed that the project pitch was the most difficult requirement. The rest of course requirements are as following: 37% of participants believed that although class activities were not that difficult, they were less easy than the language requirements, and according to them, that was fair enough to place them just after language requirements (easy) as the second easiest course requirements. 35% of participants showed that class quizzes' difficulty was average⁵² regarding the other requirements. Moreover, online or Facebook discussions were difficult for 33% of the participants. See Figure 26: Appendix 1.

Language requirements was the most frequent option selected by K.S.A. students as their easiest requirement, while the project pitch was the most frequent option selected to be their most difficult requirement. Moreover, language requirements were the highest

⁵¹ Source: msuENET

⁵² Question scale is from 1-5, (1) Most easy, (2) Easy, (3) Average, (4) Difficult and (5) Most difficult.

option selected by MSU students as their easiest requirement, while course activities were the highest option selected as their most difficult requirement. Class quizzes were the most frequent option selected by Togo students as their easiest requirement, while the project pitch was the most frequent option selected as their most difficult requirement.

Language requirements were the highest option selected by females as their easiest requirement, whereas the project pitch was the highest option selected as their most difficult requirement. On the other hand, language requirements were the most frequent option selected by males as their easiest requirement, while class activities were the highest option selected as their most difficult requirement.

Both females and males agreed that language requirements were their easiest requirement, and they disagreed about which one was the most difficult requirement for them.

The fact that language requirements were the easiest requirement for 53% of the students was noteworthy. It shows that, although most ANR491 course students are international students, the language requirements were not an obstacle to them. On the other hand, online or Facebook discussion being a difficult requirement for 33% of the students was due to topic of discussion difficulties, students' abilities to reveal their ideas in a specific time, and troubleshooting internet connections.

Knowing the effectiveness of the courses' assistance tools would help program administration to improve the courses' assistance implements. The questionnaire asked participants to rank the effectiveness of the courses' assistance tools from the least effective to the most effective tool. 20 students participated in this question (N=20). 8

participants (42%) reported that books were not an effective implement in the program, while 37% believed that books were the most effective implement in the program. 32% of participants reported that live chats such as Skype had a low effectiveness. Adobe connect came in average effectiveness, according to 37% of participants. Moreover, Angel and Facebook shared rank 4 (above average) in effectiveness, according to 50% of participants who chose ANGEL and 37% of participants who chose Facebook. See Figure 27: Appendix 2.

Books were the highest option selected by K.S.A. students as their least effective course tool, while Facebook was the highest option selected as their most effective course tool. Books were the highest option selected by MSU students as their least effective course tool, while ANGEL was the highest option selected as their most effective course tool. Furthermore, Adobe connect was the highest option selected by Togo students as their least effective course implement, while books were the highest option selected as their most effective course implement.

Live chat was the most frequent option selected by females their least effective course tool, whereas books were the highest option selected as their most effective course tool. On the other hand, books were the highest option selected by males as their least effective course tool, while ANGEL was the most frequent option selected as their most effective course tool.

Finding that books were the most effective and simultaneously the least effective tool was surprising. This result could be explained due to the following. ANR491 has two courses: the Entrepreneurial Mindset and the New Venture course. ANR491 students

during the semester found that NV course books were easier to understand than EM course books, so EM students were depending more on ANGEL and Facebook to understand the course materials while NV students were depending more on course books. Therefore, when it comes to the survey, several students reported that books were the least effective tools, whereas the other students found books to be the most effective tools. In addition, ANGEL and Facebook sharing a rank of four (above average) was notable. ANGEL and Facebook were very helpful for ANR491 students, because aside from grades, instructors post many of the course materials such as lectures notes, modules, and projects on ANGEL, providing students with everything they need in one place. Facebook was like a discussion board that students exchanged their ideas on and used to communicate with each other. However, neither of these reached a level to make students depend on them completely and replace books.

Finding that Facebook was the most effective tool for K.S.A. participants and that books were the least effective tools indicates that K.S.A. students prefer a non-regular studying style, and this tendency toward unconventional teaching methods is increasing. For MSU students, using online course materials such as ANGEL was more effective than books; having most material online would help students to focus instead of searching for information between several books. Furthermore, the notion that Togo students prefer books as the most effective tools could be explained by the students' studying style—many students preferred to study with books rather than using electronic sources, or they found that the books' information is clearer than the online material.

Discovering that live chat was the most ineffective tool for females was expected, due to the majority of ANR491 programs' females being from K.S.A., and all of them

being too shy to discuss their ideas through live chat. However, books were their most effective tool due to the absence of interaction with others. On the other hand, most males did not like studying with books, and they preferred online materials and found them more effective than regular books.

Participants have been asked if they would recommend this program to other students. 20 students answered this question (N=20). Most participants (90%) said yes, they will recommend this program to other students. 10% of participants were not sure if they would recommend this program or not, and none of the students said that they would not recommend this program. See Table 14: Appendix 1.

93% of K.S.A. students were confident that they would recommend this program to other students, whereas 7% (1 student) were not sure if they would recommend this program or not. 75% of MSU students were positive about recommending this program to other students, while 25% were not sure if they would recommend this program or not. Moreover, all of Togo students were certain that they would recommend this program to other students. Overall, the students stated that they would recommend this program to other students.

“Yes” was the most frequent option chosen by females (73%)⁵³, while 27% were not sure about their recommendations. On the other hand, all males (100%) were assured they would recommend this program to other students. Females were overall less sure about recommending this program to other students, and that might be due to unseen reasons or to students’ own perspectives.

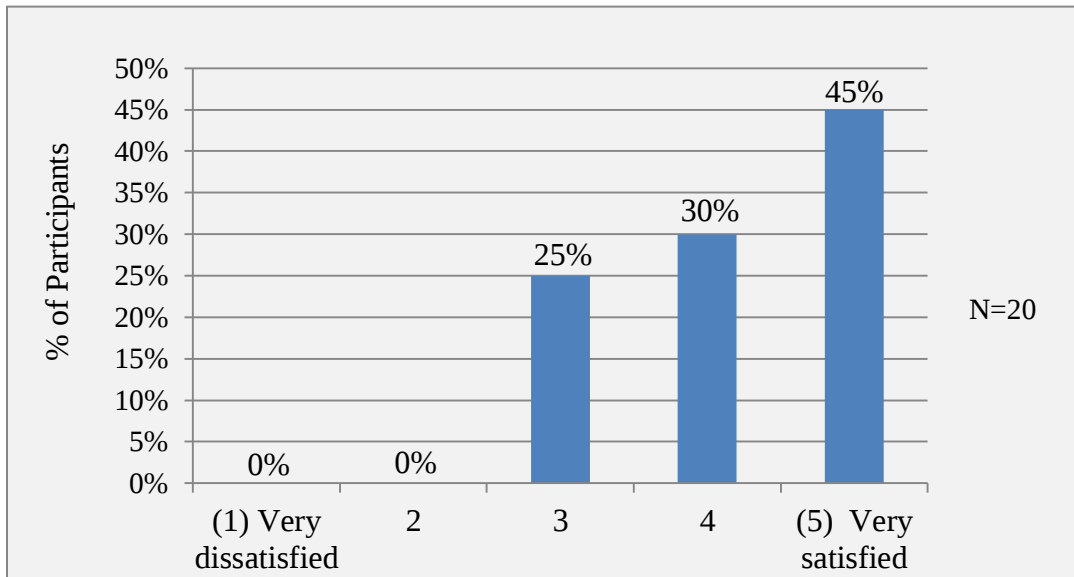
⁵³ Source: Students’ survey

In general, most ANR491 students were positive about recommending this program to other students. The major reasons that led to their decisions were the knowledge that been gained in this program, the interaction and value of multicultural courses, and the instructors' capabilities and personalities.

The questionnaire had asked the participants to rank their overall satisfaction about their experience with msuENET. 20 students contributed in this question (N=20). 9 students, or 45% of the participants, were very satisfied with their experience with msuENET, while none of the participants were very dissatisfied. 30% of the participants were satisfied⁵⁴ and 25% of the participants said that their satisfaction was on average. See Figure 8 below.

⁵⁴ The question scale is from 1-5, (1) Very dissatisfied, (2) Dissatisfied, (3) Average satisfaction, (4) Satisfied and (5) Very satisfied.

Figure 8: Students' Overall Satisfaction, spring semester 2012



The majority of K.S.A. students were very satisfied with their experience with msuENET. The majority of MSU participants were “above average” regarding their experience with the program. Togo students also chose “above average” regarding their satisfaction with their experience at the msuENET program.

54% of females were very satisfied with their experience with msuENET, whereas merely 22% of males were very satisfied with their experience with msuENET.

Finding that overall, all ANR491 students were satisfied with their experience with msuENET was noteworthy. Students’ knowledge, skills, and improved abilities were all factors that led students to be satisfied with their experience at msuENET. K.S.A. students’ satisfaction with their experience with msuENET was greater than that of other students. For most K.S.A. students, the ANR491 program was the first program they attended in a foreign university with foreign students, and it was a great opportunity,

so they feel satisfied about it. Females were also more satisfied with their experience with msuENET than males.

G. Students' Assessment of the Instructors

This section will debate the effectiveness of course instructors and instructors' assistants, the instructors' levels of engagement, the instructors' ability to respond to students' questions in a timely manner, the instructors' feedback, the instructors' abilities to communicate new ideas, and students' opinions about taking another course with the same instructors.

Asking participants to rate the effectiveness of the courses' instructors brought the following results. 20 students participated in this question (N=20). The majority of participants (55%) believed that the instructors' effectiveness was very effective (option 5); 35% stated that instructors' effectiveness was above average (option 4); and 10% placed instructor's effectiveness on average (option 3)⁵⁵. Furthermore, none of the participants suggested that the instructors' effectiveness was below average or ineffective. See Figure 28: Appendix 2.

"Very effective" was the most frequent option selected by most K.S.A. participants; half of MSU students rated their instructors' effectiveness as "very effective," while all Togo students believed that their instructors' effectiveness was very effective as well.

The majority of the females were positive about their instructors' effectiveness, so they chose "very effective" to rate the instructors' effectiveness. On the other hand, less

⁵⁵ The question scale is from 1-5, (1) Not effective, (2) Below average, (3) Average, (4) Above average and (5) Very effective.

than half the number of males believed that their instructors' effectiveness was very effective (4 out of 9 students).

Finding that the ANR491 instructors' effectiveness was average or higher was surprising, because none of the participants rated the instructors as below average or ineffective, and this result indicated that the ANR491 courses' instructors were able to deliver course materials adequately to the students.

Seeing that most K.S.A. students and all Togo students stated that their instructors' effectiveness was very effective while only 50% of MSU was expected. Not all students would rate their instructors exactly the same way; on the other hand, even though MSU students did not choose "very effective" to rate their instructors, they did not rate them lower than average.

Females ranked their instructors' effectiveness higher than males. This difference between females and males regarding instructors' effectiveness is most likely due to females' and males' differing perspectives.

The participants had been asked to rate the effectiveness of the instructors' assistants. 20 students contributed in this question (N=20). 6 participants (30%) believed that the instructors' assistant's effectiveness was very effective (option 5), while 1 students (5%) believed that the instructors' assistant's effectiveness was not effective (option1). 40% of participants rated their instructors' assistant's effectiveness as average option 3), whereas 25% showed that, the instructors' assistant's effectiveness was above average⁵⁶ (option 4). See Figure 29: Appendix 2.

⁵⁶ The question scale is from 1-5, (1) Not effective, (2) Below average, (3) Average, (4) Above average and (5) Very effective.

“Average” was the most frequent option chosen by K.S.A. participants; half of MSU students rated their instructors’ assistant’s effectiveness as average, while Togo students believed that their instructors’ assistant’s effectiveness was above average.

Above average was the highest option selected by females to rate the instructors’ assistant. On the other hand, “average” was what males rated the instructors’ assistant’s effectiveness. Females gave their instructors’ assistant’s effectiveness a higher rank than males.

According to earlier results, the ANR491 instructors’ assistant’s effectiveness in general was sufficient (on average or higher). There was no wide difference between MSU and Togo participants about instructors’ assistant’s effectiveness; they both rated the instructors’ assistant’s effectiveness as average, and the same results occurred for K.S.A. except that one student believed the instructors’ assistant’s effectiveness was not very effective.

The questionnaire asked participants to indicate their instructors’ levels of engagement with the course. 20 students contributed in this question (N=20). The majority of the participants (55%) were very positive about their instructor’s engagement with the courses, so they gave them option 5 (very engaged), whereas 10% of the participants believed that the instructor’s engagement level was below average (option 2)⁵⁷. See Figure 30: Appendix 2.

53%⁵⁸ of K.S.A. students selected very engaged (option 5) to rate their instructors’ engagement level, the same rank the instructors received from half of MSU

⁵⁷ The question scale is from 1-5. (1) Not engaged, (2) Below average, (3) Average, (4) Above average and (5) Very engaged.

⁵⁸ Source: Students’ Survey

students. Furthermore, all Togo students believed that their instructors' engagement level was very engaged (option 5).

The majority of females (63%)⁵⁹ believed that the instructors' engagement was high enough to receive "very engaged" (option 5) from them. Likewise, 44% of the males chose "very engaged" (option 5).

The majority of the ANR491 program's students believed that their instructors were very engaged with the course activates. On the other hand, the number of students who believed that their instructors' engagement level was below average was a small number: merely two students.

Discovering that the majority of K.S.A., half of MSU, and all Togo students agreed that their instructors' engagement with the courses was average or higher was remarkable. This indicates that the ANR491 courses' instructors had adequate capabilities that helped them to engage with courses and made students feel that involvement.

Male participants were the only students who believed that their instructors' engagement was below average. This result is understandable, because this program is online and there is no face to face or classroom interaction, and some students might feel the instructors are not engaging enough with the courses.

The participants had been asked the following question: "How would you rate the instructors' responses to your questions in a timely manner?" 20 students participated in this question (N=20). Option 5 (very responsive) received the highest number of

⁵⁹ Source: Students' Survey

responses at 45%, while option 2⁶⁰ (below average) received the lowest number of responses at 5%. See Figure 31: Appendix 2.

“Very responsive” was the most frequent option selected by K.S.A. students; “very responsive” was also the most frequent option selected by MSU students; “above average” was the only option have been chosen by Togo students.

“Very responsive” was the highest choice selected by female students, whereas “above average” was the most frequent choice selected by male students.

The fact that most ANR491 students rated instructors’ responses to students’ questions in a timely manner either as average or higher demonstrates that ANR491 instructors were closely in touch with the students, even though students were from different places around the world where there are time differences.

The questionnaire asked the participants to rate the instructors’ feedback that they had received on their assignments, quizzes, projects, etc. 20 students contributed to this question (N=20). 8 students (40% of participants) selected “average” (option 3)⁶¹, and this was the most frequent option selected; whereas 2 students (10% of participants) selected “below average” (option 2), and this was the least frequently selected. Furthermore, 6 students (30% of participants) believed that the instructors’ feedback was “very helpful” (option 5), and 10% of participants chose average (option 3) to rate the instructors’ feedback. See Table 15: Appendix 1.

⁶⁰ The question scale is from 1-5, (1) Not responsive, (2) Below average, (3) Average, (4) Above average and (5) Very responsive.

⁶¹ The question scale is from 1-5, (1) Not helpful, (2) Below average, (3) Average, (4) Above average and (5) Very helpful.

Average was the highest option that been chosen by K.S.A. participants. Furthermore, this option was also the most frequently chosen by 50%⁶² of MSU students, while the above average option was the only option for Togo students.

Moreover, average was the highest option that been selected by female students, whereas very helpful and above average were the highest options that were selected by male students.

Finding that ANR491 program instructors' feedback on students assignments, quizzes, projects, etc. was average or better for most students indicates that the instructors' feedback was sufficient and helpful, and most students benefited from it.

Asking participants to rate ANR491 course instructors' abilities to communicate new ideas brought the following results. 19 students participated in this question (N=19). The most frequent option chosen by the majority of the participants (53%, or 4 students)⁶³ was above average, while the least frequently chosen option (15% of participants) average. 32% of the participants believed that the instructors' abilities to communicate new ideas were very good, whereas none of the participants reported that the instructors' abilities to communicate new ideas were below average or very low. See Figure 32: Appendix 2.

Above average was the most frequent option selected by K.S.A. participants. Moreover, above average was also the highest choice selected by MSU students and Togo students.

⁶² Source: Students Survey

⁶³ The question scale is from 1-5. (1) Very low, (2) Below average, (3) Average, (4) Above average and (5) Very high.

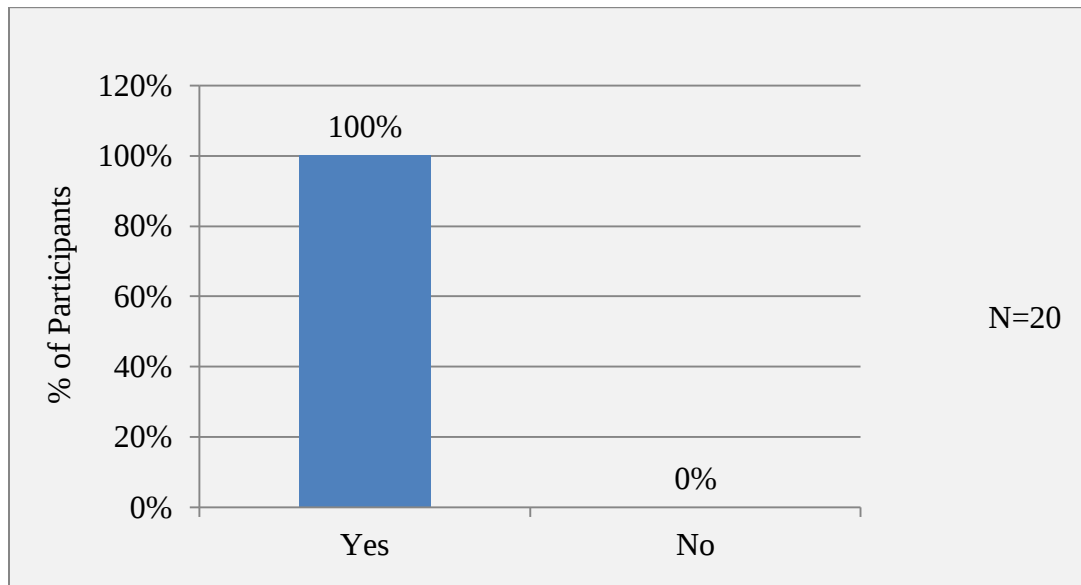
“Above average” received the highest number of females’ responses (75%)⁶⁴, whereas there was not an option that obtained the highest males’ responses—all the responses were divided equally between “very high,” “above average” and “average,” receiving 33% each.

According to the earlier results, the ANR491 instructors’ abilities to communicate new ideas to the students were good enough to be rated as average or higher. On the other hand, this illustrates that instructors have sufficient skills that are helping them to deliver new ideas to their students. Furthermore, all ANR491 students were satisfied about their instructors’ abilities to communicate new ideas, therefore the instructors’ abilities had received an advanced rank from all ANR491 students.

Finally, participants were asked to reveal if they would like to take another course with the same instructors. 20 students contributed to this question (N=20). All 20 students (100% of the participants) answered yes, they would like to take another course with same instructors, whereas none of the participants answered no. See Figure 9 below.

⁶⁴ Sources: Students survey

Figure 9: Students' Opinions about Taking Another Course with the Same Instructors, spring semester 2012



All K.S.A., MSU and Togo students reported that they would like to take another course with the same instructors. Similarly, all female and male students would like to take another course with the same instructors.

In general, all ANR491 students were satisfied with the instructors' performance, and hope to attend other courses with the same instructors.

According to earlier results, the ANR491 program had a positive impact on students' knowledge, skills, and abilities. Students were satisfied with the program material, instructors' skills and abilities, and technical tools. Furthermore, ANR491 students were very pleased to join this program with such great instructors and students, so they enjoyed this experience and wish to attend other courses with the same instructors.

CHAPTER VII

KKU Students

King Khalid University (KKU) students represented about 75% of the ANR491 total students' number, which is the majority of the students, and this section will give more details about this group.

A. Sample Description

38 KKU students joined the msuENET certificate program ANR491 at MSU for the spring semester of 2012, 21 females and 17 males. 21 students enrolled in the entrepreneurship mindset course EM section-730, 11 females and 10 males. 17 students enrolled in the new venture course NV section-740, 9 females and 8 males. 23 students passed the ANR491 program, 16 females and 7 males.

B. Gender Differences

Do KKU students have the same levels of knowledge about entrepreneurship subjects or the same motivations to join this program? What are students' classmate preferences? In this section, mean sample differences between KKU students will be examined based on gender. T-tests were used to capture the mean differences between females and males.

The null hypothesis (H0) in each case is that there are no gender differences in students' knowledge levels, motivations, and classmate preferences, while the alternative hypotheses (H1) states that there is a gender difference in students' knowledge levels, motivations, and classmate preferences.

H_0 : gender difference = 0

H_1 : gender difference $\neq$ 0

The sample size for the analysis is 17 students, 9 females and 8 males. A significance level of 5% is used to determine if the null hypothesis can be rejected. The results are as shown in Table 3 below.

Table 3: Gender Difference T-Types

Category	T-test	P-value
Knowledge	-1.1207	0.280
Motivation	0.1680	0.8670
Classmate Preferences	-0.7774	0.4533

First, the t-test value for K.S.A. students' knowledge levels was -1.1207 with a p-value of 0.280. According to this result, this study was unable to reject the null hypothesis at the 5% significance level. While the negative t-test may indicate that females on average had higher knowledge levels, the findings of the analysis support that there is no difference between the student knowledge levels of males and females in this study. Second, the t-test for K.S.A. students' motivations to join the ANR491 program was 0.1680 with a p-value was 0.8670. According to this result, the null hypothesis that there are no gender differences regarding students' motivations cannot be rejected at the 5% significance level. It is noted that the calculated absolute t-value also close to zero. Third, regarding K.S.A. classmate preferences, the t-test value was -0.7774 with a p-

value of 0.4533. Therefore, the null hypothesis that there is no gender difference on class preferences cannot be rejected at the 5% significance level. Overall, this study concludes that gender differences regarding the K.S.A. students' knowledge levels, motivations to take this program and regarding students' classmate preferences cannot be supported by the evidence. It is noted the sample size used for this analysis is quite small, and these results should be viewed with caution. Revisiting this analysis in the future after that course population size has grown to adequate levels is warranted.

CHAPTER VIII

Conclusion

A. Summary of the Research

Entrepreneurial education can be viewed broadly in terms of the skills that can be taught and the characteristics that can be engendered in individuals that will enable them to develop new and innovative plans. It focuses on the expertise that is used to conceive and commercialize a business opportunity (Jones & English, 2004). Entrepreneurship education propagates rapidly due to government, students', and high market demand for entrepreneurs (Alberti, Sciascia & Poli, 2004). Is entrepreneurship teachable? What is the most effective teaching technique? What is the most effective technique to measure entrepreneurship effectiveness? Addressing these questions are central to our understanding of entrepreneurship education.

This study was conducted to evaluate the performance of the msuENET program and to assess the improvement in students' knowledge, skills, and abilities after attending an entrepreneurship course (ANR491) course at MSU in the spring semester of 2012. The study methodology used two different assessment models: first was the program assessment model to assess the performance of ANR 491 certificate program, and second was the assessment of the improvement model to assess students' improvement levels after attending an ANR491 course. Qualitative, value-added, and portfolio methods were employed to achieve the objectives of the study. Data for this study was collected via a survey of ANR491 program students' and this data was analyzed using both descriptive and statistical methods as appropriate.

B. Discussion Results

According to the results that had been obtained from analyzing the survey data, the ANR491 program did improve students' knowledge about entrepreneurship. When comparing students' knowledge about entrepreneurship prior to taking the ANR491 program, 65% of students' knowledge about entrepreneurship was below average or nonexistent, while at the end of the ANR491 course, 90% of students believed that this program increased their knowledge about entrepreneurship. Moreover, the ANR491 program improved students' confidence in their abilities to start new businesses. When comparing students' business experience levels prior to their participation in the ANR491 program, 65% of students' did not have any business experience, while at the end of the ANR491 program 90% of students believed that this program did increase their abilities to start new businesses. Furthermore, about 70% of students reported that they would likely start a new business in the next 5 years. The ANR491 program increased students' abilities to discover or create new business ideas. When comparing students' knowledge about entrepreneurship at the beginning of the ANR491 program, the percentage of students who were very sure about their abilities to create new business ideas was only 35%, and the percentage of students who were very sure about their abilities to discover new business ideas was merely 39%. However, at the end of the ANR491 program, 85% of students were confident that this program increased their abilities to create or discover new business ideas. 75% of ANR491 students stated that they were satisfied with their experience with msuENET. The instructors' effectiveness, abilities to communicate new ideas, and responses to students' questions in a timely manner were rated high (90%, 85%, and 75%, respectively). In addition, 90% of the students would recommend this

program to other students. Finally, 100%—that is all ANR491 program students—would strongly like to take another course with the same instructors.

C. Limitations of the Research

This study identified several issues and problems that inherently limited the analysis.

1. Assessing the Performance of msuENET

There was very little data available to conduct an assessment of the whole msuENET program as originally planned. Both lack of records about the program and time were factors here. It was difficult to obtain complete information about the establishment of msuENET for several reasons, such as the fact that there is no documented information about the establishment of msuENET. Furthermore, all of the information about msuENET depended on what the interviewees recalled. Some of the effective founders had left the program, and by leaving, the program's crucial establishment information been missed. Some new members did not know a lot about the establishment process. In addition, given the time period in which the study was conducted (May—July 2012) arranging interview times was difficult due to other time commitments.

2. Assessing the ANR491 Program

The effectiveness of student evaluation survey of the ANR491 program was also limited. The small size of the survey population (51 students) combined with the 50% response rate (25 students) resulted in significant data limitations that restricted the use of

any higher-level statistical analysis (i.e. regression analysis). Furthermore, due to the timing of the data collection, the effectiveness of the before-after course analysis was limited. It is expected that future data collection of student evaluations of this program will not have this problem.

D. Recommendations for msuENET

Based on the analysis in this study, it is believed that the implementation of the following recommendations would support the sustainability of the msuENET program. These recommendations are divided into two categories: msuENET Program Administration, and ANR Certificate Courses.

1. msuENET Program Administration

- Specialization/organization is one of major issues for msuENET. Several members of msuENET are doing more than one role, such as teaching, arranging meetings, leading programs, and contacting other groups and universities. The msuENET would be well-served to clarify each member's role and position in the program to formalize responsibilities and duties.
- Performance stabilization seems to be a continuous issue for msuENET administration. This issue needs to receive more attention in order to maintain program achievements. Looking for similar programs in different universities and tracking their performance would enhance program administration knowledge about how to stabilize msuENET performance. For instance, msuENET needs to develop a consistent framework to report the performance of the msuENET to all msuENET members and stakeholders.

- Enhance the msuENET program with new people. First, hiring active entrepreneurs would stimulate the organization and teamwork spirit, and improve the performance of msuENET. Also, hiring support staff to handle student administration duties would free up time to enhance the program offering. However, due to constrained funds, hiring can be postponed until msuENET has enough resources to hire new people. Meanwhile, msuENET could substitute hiring new people with attracting volunteers to join the msuENET team. One way msuENET could attract volunteers is by holding small group sessions for people who are interested in entrepreneurship related subjects in the local community and assessing their willingness to join and assist the program.
- Access to sustainable resources is a key issue for the msuENET. To tackle this program, the msuENET could establish a student business advising center. Business and/or financial consulting of entrepreneurial business could be provided to new start-ups for a fee, and could provide new ventures will valuable information before resources are wasted.
- Working closely with MSU to provide additional support for msuENET, such as arranging entrepreneurship meetings and activities inside and outside Michigan or the U.S. Promotional material (e.g. brochures, videos, etc.) should be developed for the msuENET program that communicates the benefits of the program to potential target audiences. This material should be made available to MSU international program developers as a program that they can promote for MSU.
- After msuENET's successful experience with K.S.A. (KKU) and Togo students, searching for other universities or groups around the world and cooperating with

them would be beneficial. For instance, several universities in Iraq would be interested in such programs, such as University of Bagdad and Karbala University. The msuENET should continue to target international development opportunities and should consider aligning with active MSU programs as a supplementary activity.

- Building long-term relationships with K.S.A. universities, especially KKU and other universities in the region, would also be beneficial to msuENET. One way to do this is by giving the ANR491 program more significance; for instance, sending ANR491 courses' instructors at least one time during the semester to K.S.A. and meeting their students face to face would encourage students to improve their performance. On the other hand, that would show KKU and other universities that a U.S. university such as MSU cares about their students from different countries, because that would strengthen the relationship between msuENET and other universities.
- Hosting other universities' members who are interested in entrepreneurship topics at MSU such as E-Learning members from KKU would help these members to take closer look at the development of entrepreneurship subjects in the U.S. and transfer these developments to their universities.
- By offering scholarships advertised by msuENET and rewarded to universities that msuENET is looking to build long-term relationships with, the msuENET would get benefits from those scholarships when the rewarded students start new businesses. For example, as a condition of the scholarship, new ventures may

- have to include a recognition to the msuENET program. This would help to promote the value of the program to other targeted universities and constituencies.
- Improving the language capabilities of the msuENET, especially if further international opportunities are pursued, would be very helpful. This would improve communication not only with existing and future partner organizations, but also with students who might join the program.

2. ANR491 Certificate Courses

- Teaching techniques could be improved by hosting entrepreneurs, especially former program students, and allowing them to transfer their experience to the current programs' students. For instance, the program has graduated many students, several of whom have successful business stories. Hosting these former students in ANR491 program courses and giving them the chance to transfer their business knowledge to current students would enhance current students' knowledge and expectations for a entrepreneur's life after graduating from this program.
- The ANR491 program must enhance its documentation of the program in an organized fashion. Key data to be documented should include grade performance, student contract information, student evaluations, students activities after graduation (e.g. new business start-ups), among others.
- Frequent and standardized program and course assessments should be conducted for msuENET to track the performance of the program and relevant courses.

- ANR491 international students often faced several difficulties during the courses, most notable was a significant language barrier. Further attention and evaluation of a student's English language proficiency is needed. For example, evidence of language proficiency as documented by the host institution should be required for all incoming students.

E. Future Research

This study is a first attempt at addressing the performance of the msuENET and its program offerings. Future research should attempt to address the following areas.

- A more structured assessment of student performance in the entrepreneurship course offering is needed. In particular, conducting a survey at the beginning of the semester and conducting another survey at the end of the semester would allow one to compare the results to illustrate students' development at the end of the program.
- A systematic review of the assessment of other entrepreneurship courses would be beneficial to provide direction for future assessment of the msuENET program and other similar programs.
- Document the evolution of the msuENET program and other similar programs to identify best practices and to recognize opportunities to scale-up and reach more individuals. Furthermore, explore "tipping points" in the organization of such programs and in their adoption in the broader community.

F. Assessment's Contribution to msuENET

After 2 years from the initial establishment of the entrepreneurship network at MSU, this study represents the first external assessment for msuENET's program courses (ANR491). A continued examination of the msuENET program's performance through its current courses would help msuENET understand and recognize the strengths and the weaknesses of the program and how to solve them.

APPENDICES

APPENDIX 1

Table 4: Assessment Models & Definitions (According to OFAS)

<i>Assessment</i>	<i>Definition</i>
Assessment for accountability:	Assessment of some unit (could be a program, department, college or entire institution) to satisfy stakeholders external to the unit itself.
Assessment for improvement:	Assessment that feeds directly, and often immediately, back into revising the course, program or institution to improve student-learning results.
Assessment of individuals:	Uses the individual student, and his/her learning, as the level of analysis. Can be quantitative or qualitative, formative or summative, standards-based or value added, and used for improvement.
Assessment of programs:	Uses the department or program as the level of analysis. Can be quantitative or qualitative, formative or summative, standards-based or value added, and used for improvement or for accountability. Ideally, program goals and objectives would serve as a basis for the assessment. Example: how sophisticated a close reading of texts senior English majors can accomplish (if used to determine value added, would be compared to the ability of newly declared major).

Table 4 cont'd.

Performance assessment :	A method for assessing how well students use their knowledge and skills in order to do something. Music students performing a new piece of music before a panel of judges are undergoing performance assessment; students who are expected to demonstrate an understanding of basic grammar, spelling, and organizational skills while writing a paper are undergoing performance assessment; business students asked to write a proposal to solve a problem presented in a case study are undergoing performance assessment.
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Table 5: Summative Types by Langan

<i>Summative Type</i>	<i>Definition</i>
Portfolio	Collection of artifacts that shows skill development over a period of time (the duration of the program).
Internship	Opportunity to work in an occupationally related work setting under the direction of a supervisor from the occupation.
Summative Testing	Mid-term and final examinations (traditional and/or performance based) that are used to evaluate performance at the conclusion of a course or program.
Capstone Project	A concluding project that verifies the knowledge and skills learned in a program.
Demonstration	A performance-based display of skills and knowledge learned throughout the course and/or program.

Table 6: ANR491 Students' Primary Areas of Study, spring semester 2012

Answer Options	Response Percent	Response Count
Computer Science	27%	6
Engineering	23%	5
Medicine	18%	4
Business	18%	4
Arts and Humanities	9%	2
Physical Science	5%	1
Social Science	0%	0

Table 7: Students' Preparedness Levels for ANR491 Program, spring semester 2012

Answer Option	Response Percent	Response Count
(1) Very unprepared	9%	2
2	22%	5
3	39%	9
4	9%	2
(5) Very prepared	22%	5
Total	100%	Total 23

Table 8: Students' Level of Interaction with People From Different Cultures or Countries than Their Own, spring semester 2012

Answer Option	Response Percent	Response Count
(1) Never, this is the 1st time	13%	3
2	29%	7
3	33%	8
4	13%	3
(5) Frequently	13%	3
Total	100%	Total 24

Table 9: Students' Abilities to Discover New Business Opportunities, spring semester 2012

Answer Option	Response Count	Response Percent
(1) Never able to discover new business opportunities	0	0%
2	3	13%
3	6	26%
4	4	17%
(5) Always able to discover new business opportunities	9	39%
I do not know	1	4%
Total	Total 23	Total 100%

Table 10: How ANR491 Students Would Likely Respond to New Business Opportunities, spring semester 2012

Answer Options	Response Percent	Response Count
Do nothing	4%	1
Tell others about the opportunity and nothing more	4%	1
Wait for others to discover the opportunity and follow them	0%	0
Collaborate with others to fulfill customer need and/or business opportunity	39%	9
Start your own business	48%	11
I don't know	0%	0
Other	4%	1
Answered question		23

Table 11: Students' Opinions about Their Abilities to Start New Businesses after Taking ANR481 Courses, spring semester 2012

Answer Options	Response Percent	Response Count
Yes	90	18
No	0	0
I don't know	10	2
Answered question	100	20

Table 12: Students' Classmate Preferences, spring semester 2012

Answer Options	Response Percent	Response Count
Same country	56%	9
Different country	13%	2
Both	31%	5
Answered question	100%	16

Table 13: ANR491 Students' Preferences for Future Classmates, spring semester 2012

Answer Options	Response Percent	Response Count
Classmates from my same country & culture	5%	1
Classmates from a different country & culture than your own	5%	1
Classmates from both your country & culture and from different countries & cultures.	84%	16
I would prefer to study alone	5%	1
No preference	0%	0
Answered question	100%	19

**Table 14: Students' Opinions about Recommending This Program to Other
Students, spring semester 2012**

Answer Options	Response Percent	Response Count
Yes	90%	18
No	0%	0
Not sure	10%	2
Answered question	100%	20

Table 15: The Value of Instructors' Feedback, spring semester 2012

Answer Option	Response Count	Percent Count
(1) Not helpful	0	0%
2	2	10%
3	8	40%
4	4	20%
(5) Very helpful	6	30%
Answered Question	20	100%

APPENDIX 2

Figure 10: Students' Preparation for ANR491 Courses, spring semester 2012

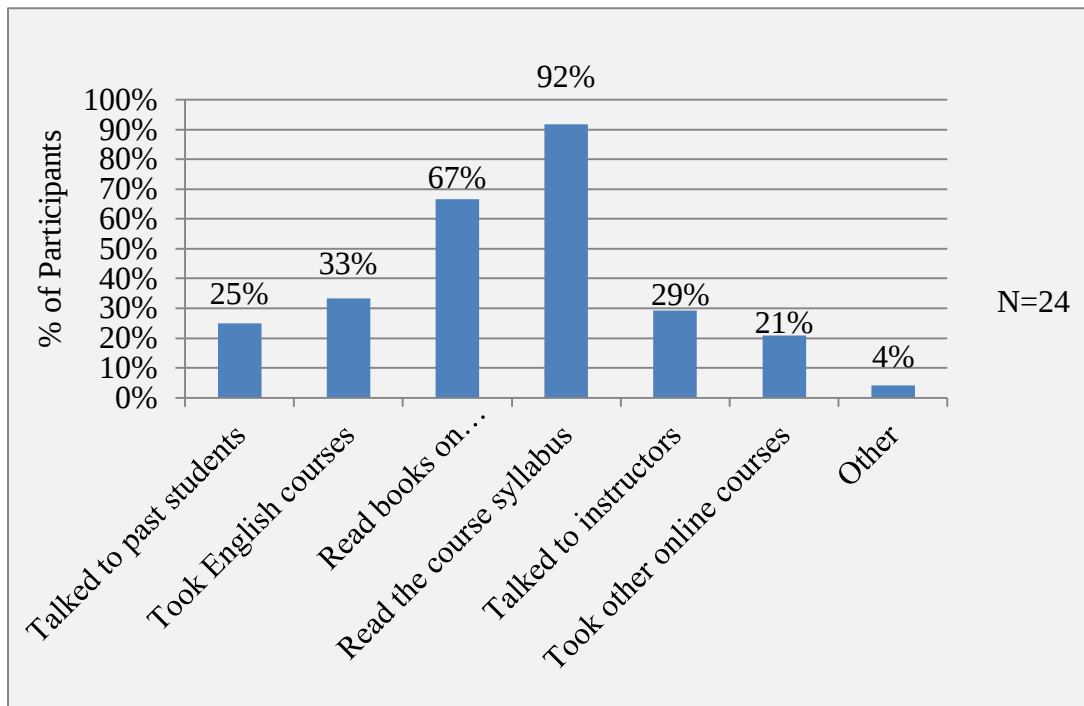


Figure 11: Types of Businesses ANR491 Students Worked In, spring semester 2012

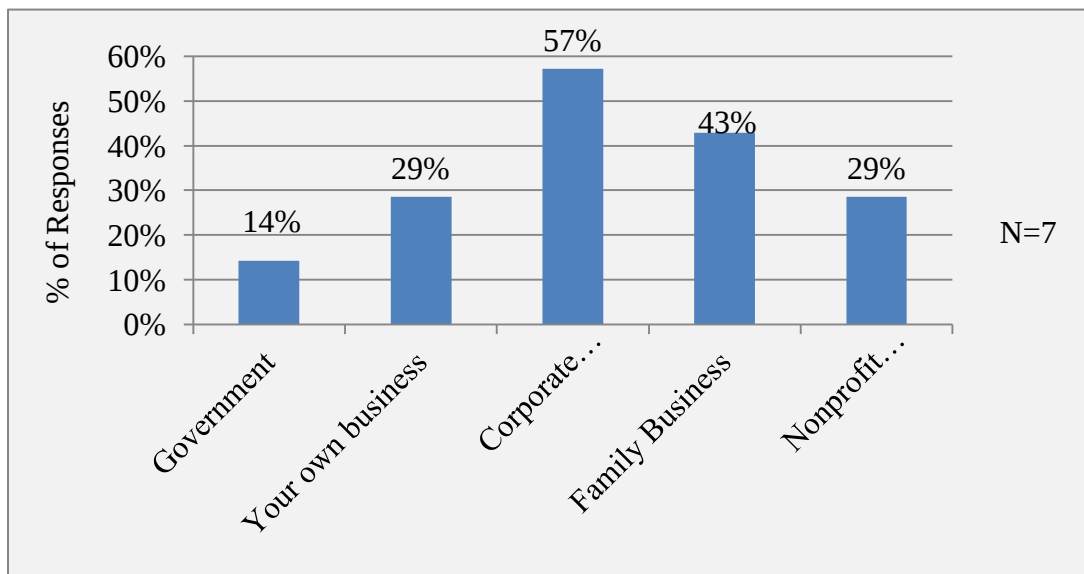


Figure 12: Students' Role in the Business They Worked In, spring semester 2012

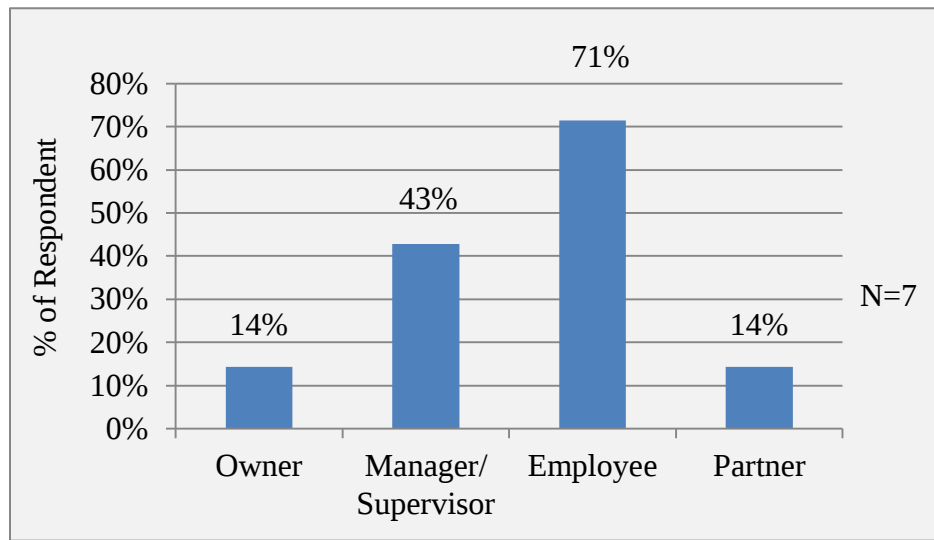


Figure 13: Students' Opinions About the Effectiveness of an Online Multicultural Course on Their Skills & Abilities, spring semester 2012

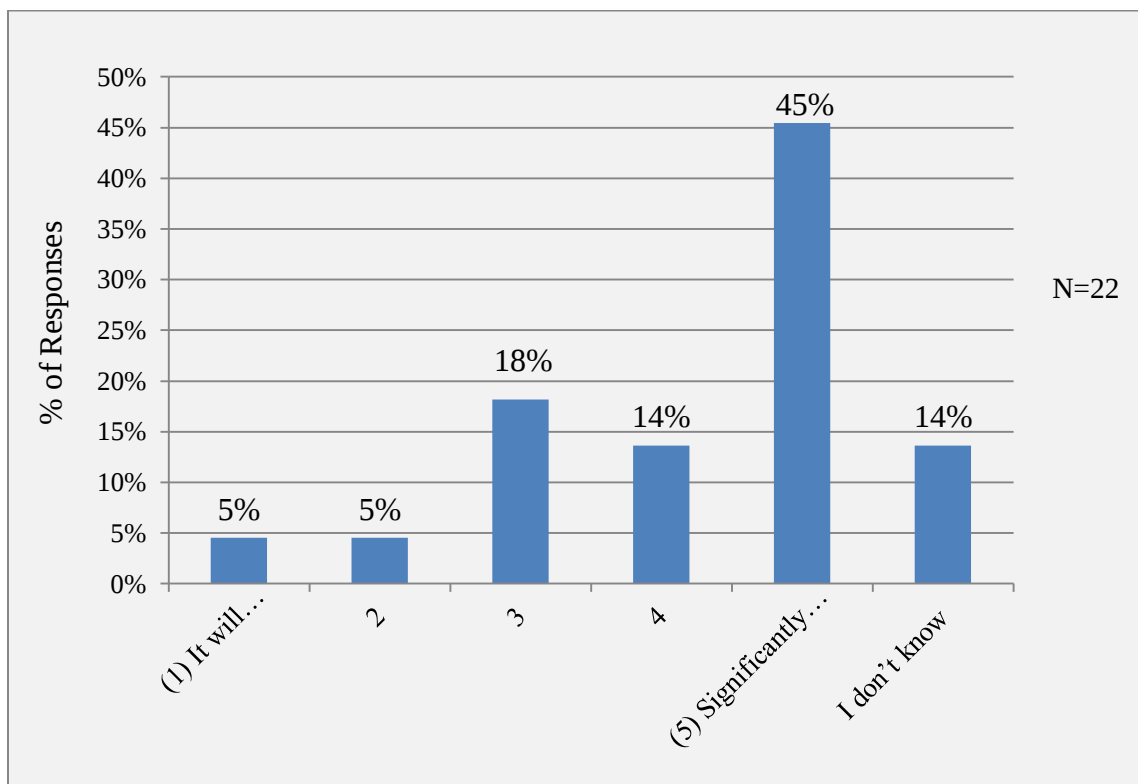


Figure 14: Students' Abilities to Create New Business Ideas, spring semester 2012

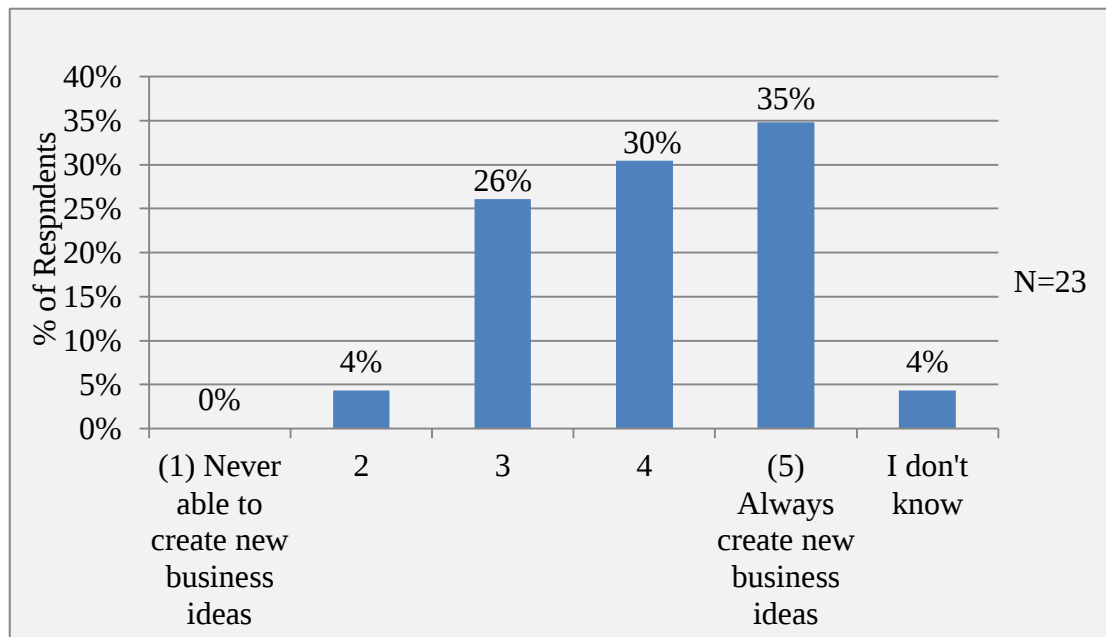


Figure 15: Students' Abilities to Persuade People to Follow Their Ideas, spring semester 2012

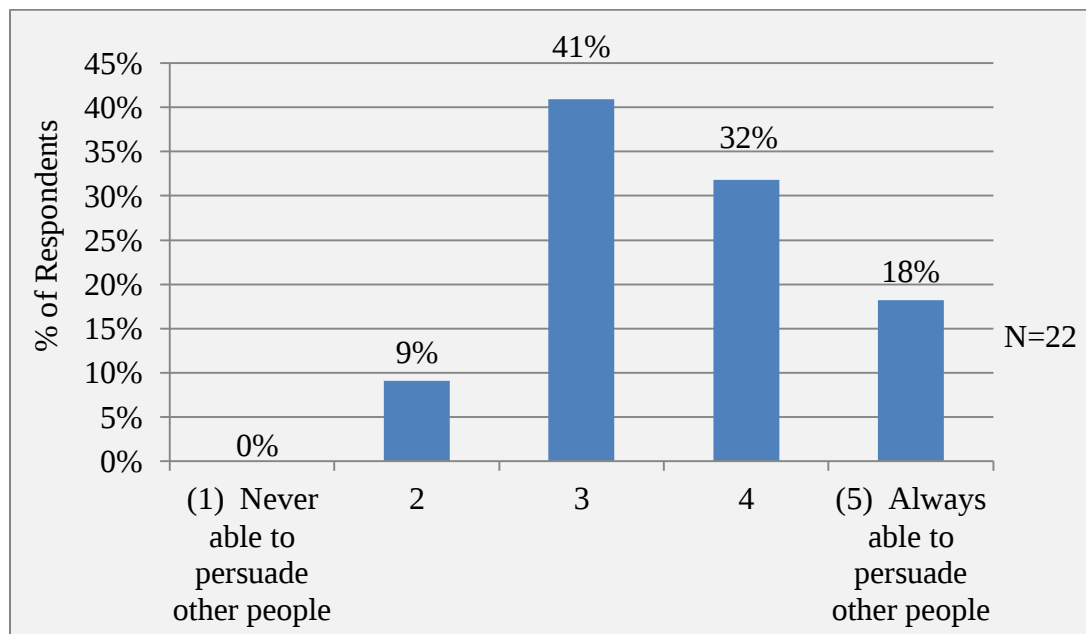


Figure 16: Levels of Interest in New Business Opportunities, spring semester 2012

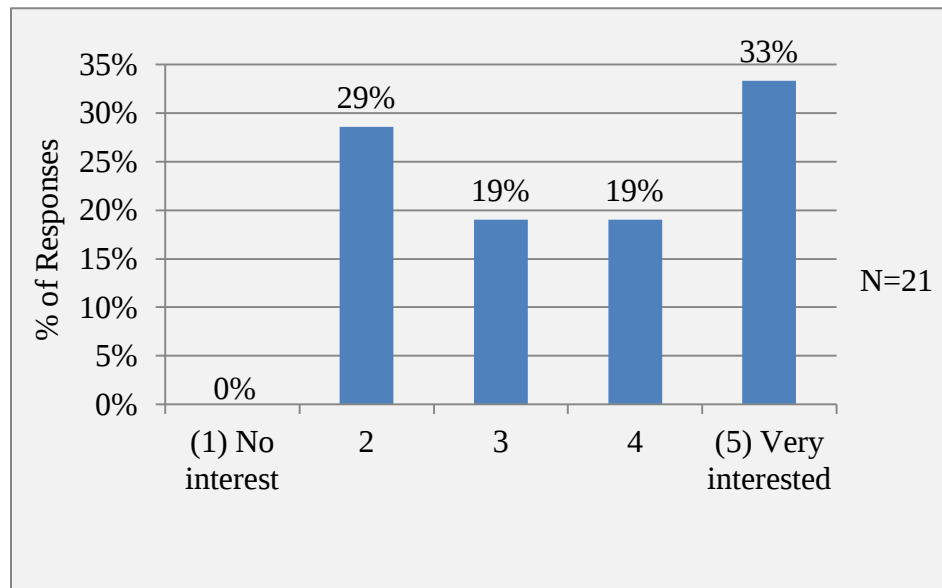


Figure 17: Possible Funding Sources, spring semester 2012

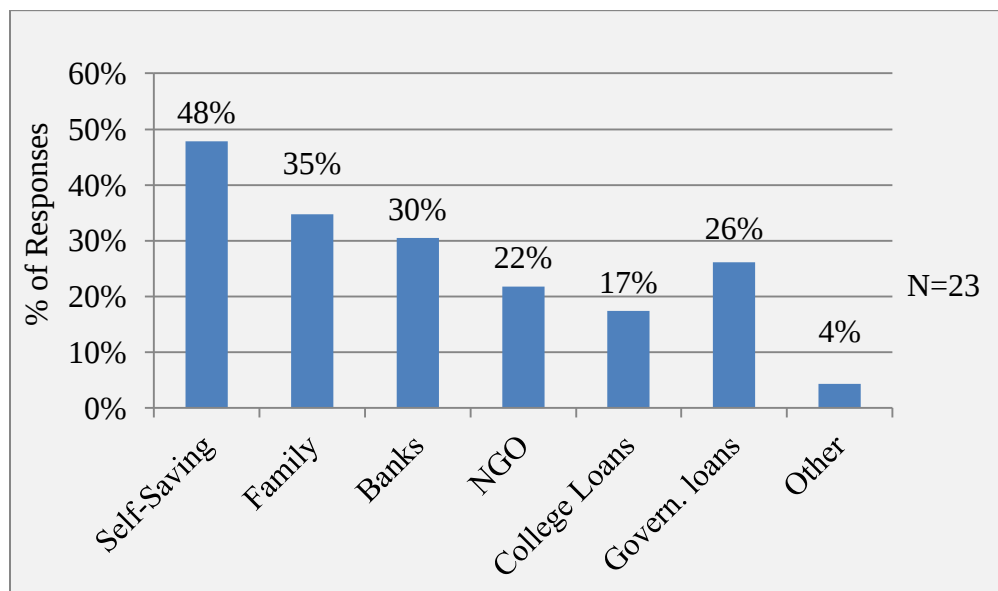


Figure 18: Factors That Might Influence Students' Judgment About Innovation, spring semester 2012

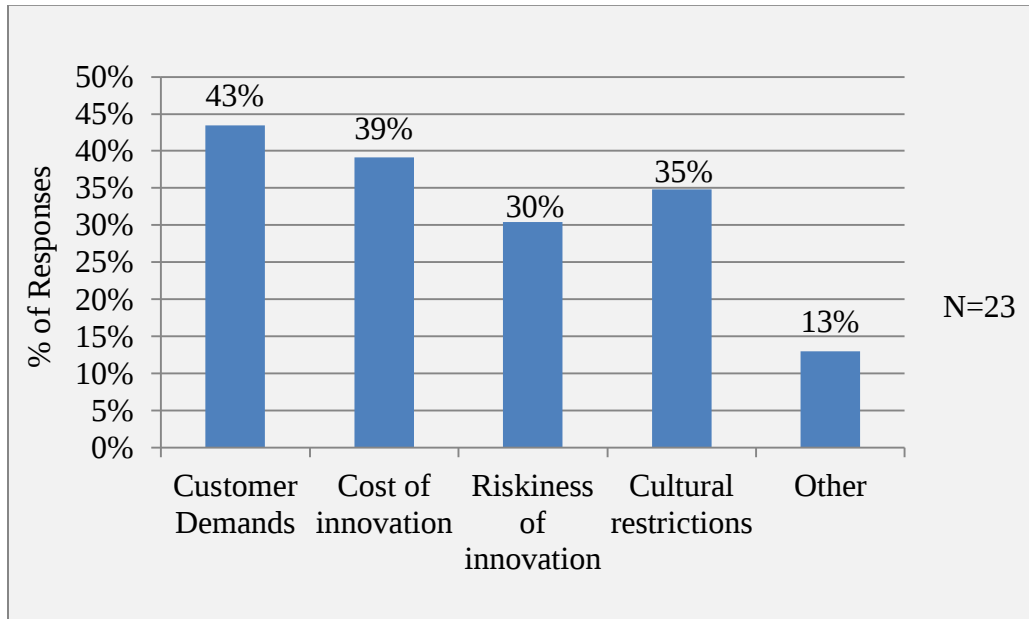


Figure 19: Students' Riskiness Levels, spring semester 2012

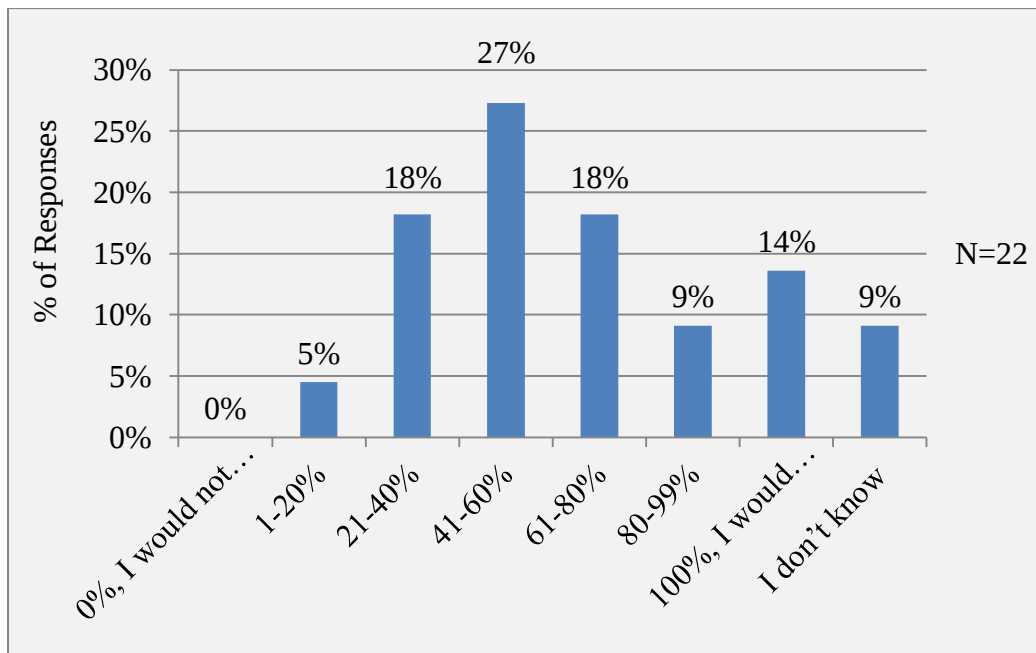


Figure 20: Students' Opinions About the Knowledge Gained from ANR4891, spring semester 2012

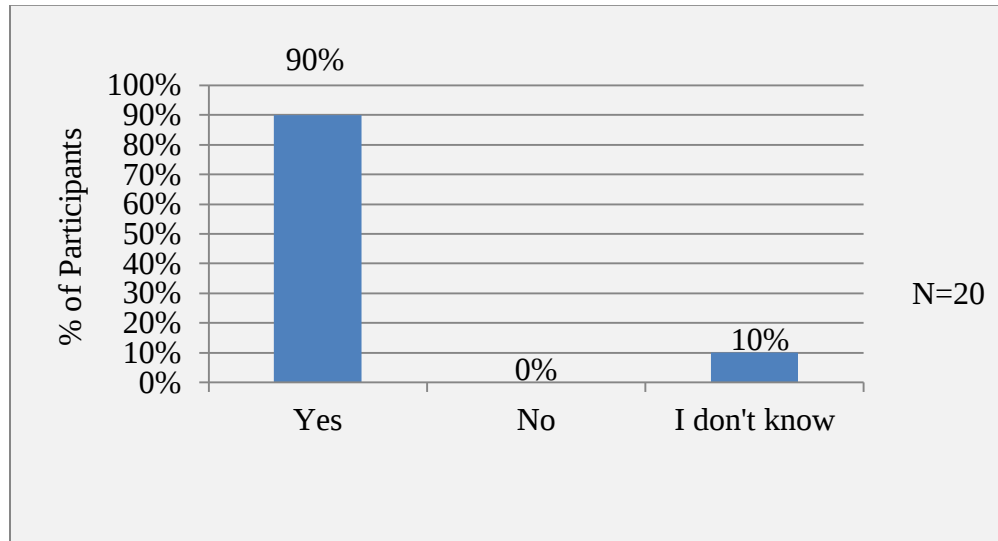


Figure 21: Students' Confidence about Improving Their Abilities to Discover New Business Ideas after ANR491, spring semester 2012

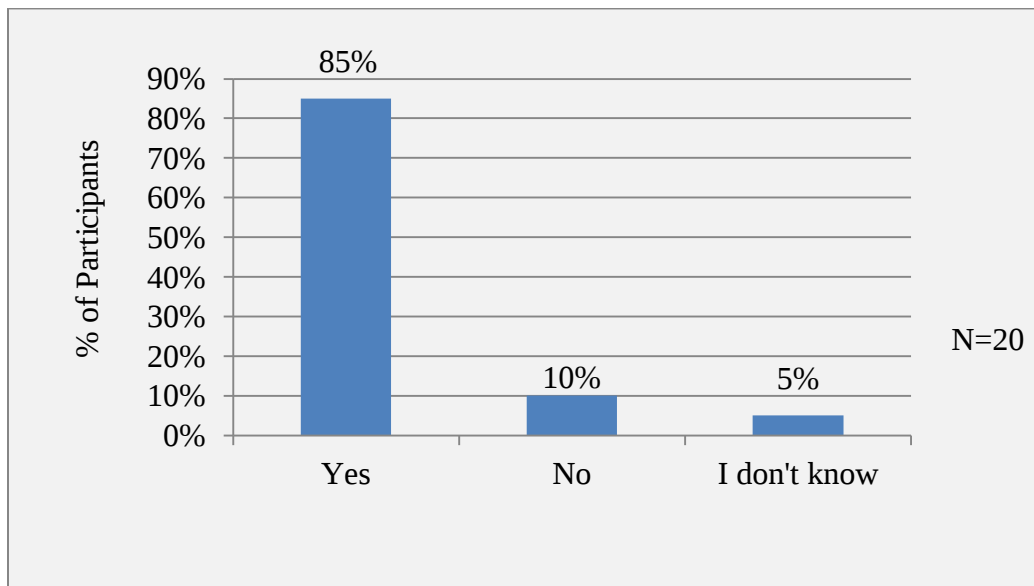


Figure 22: Students' Studying Preferences, spring semester 2012

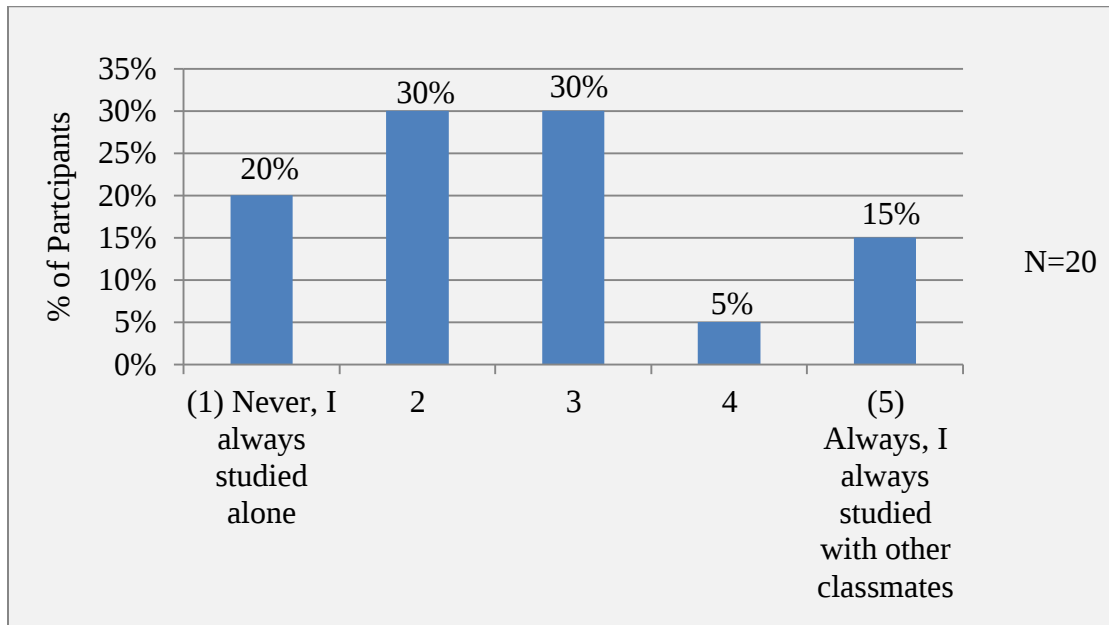


Figure 23: Students' Opinions on the Value of Multicultural Courses, spring semester 2012

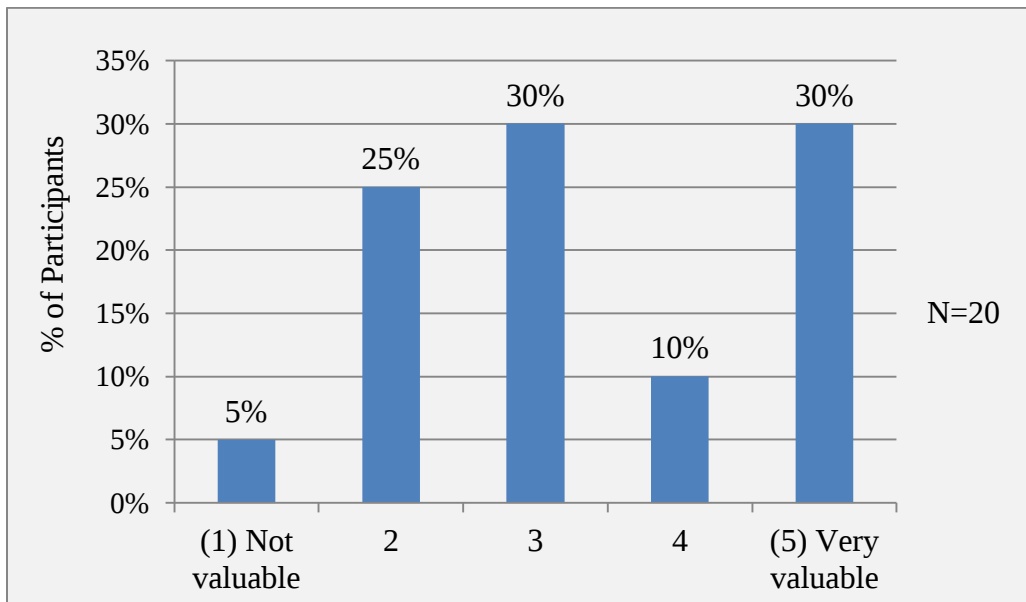


Figure 24: Students' Opinions about Courses' Pace, spring semester 2012

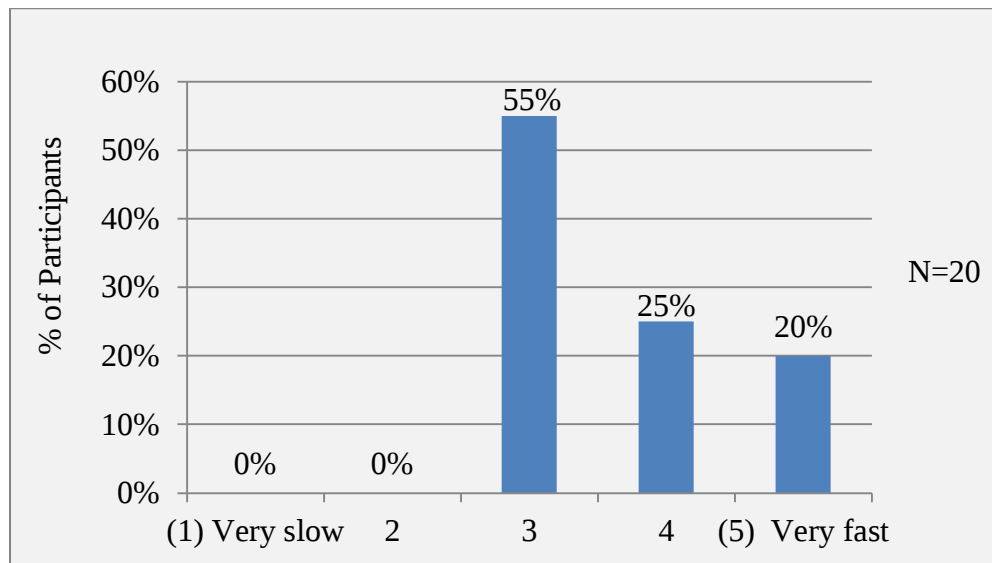


Figure 25: Courses' Difficulty According to ANR491 Students, spring semester 2012

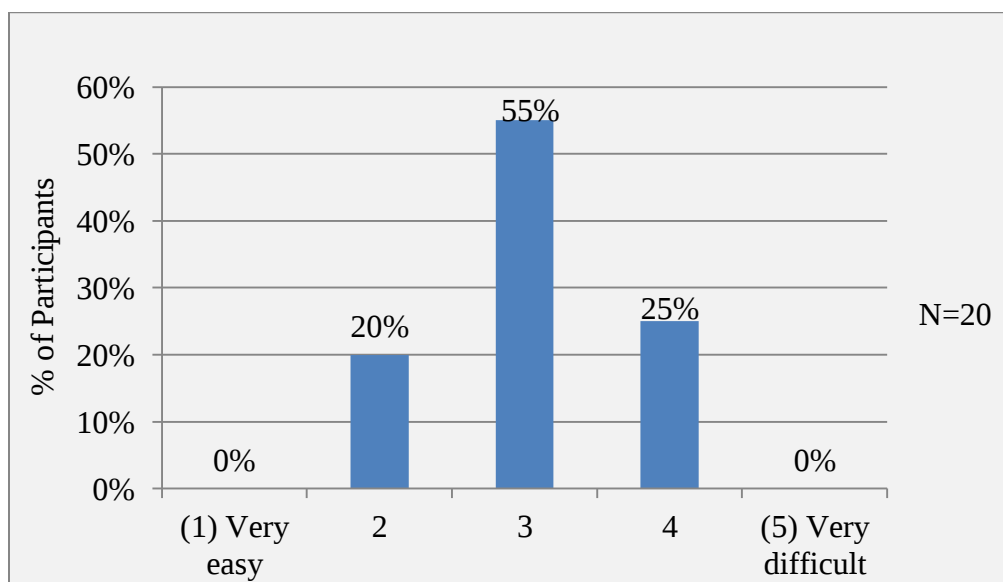


Figure 26: Course Requirements' Difficulty, spring semester 2012

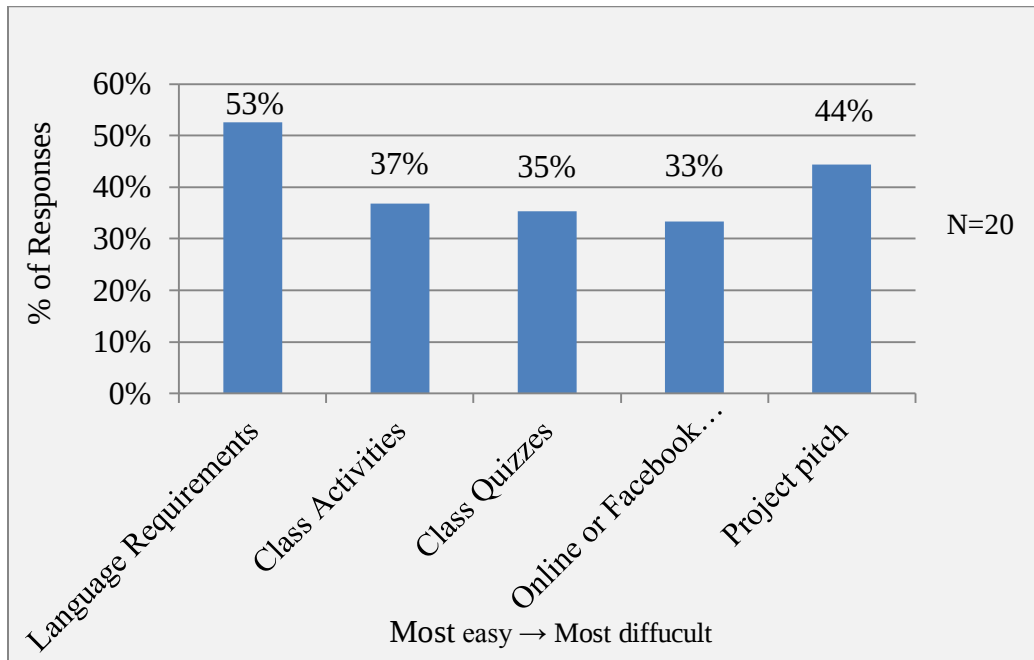


Figure 27: The Effectiveness of Course Implements, spring semester 2012

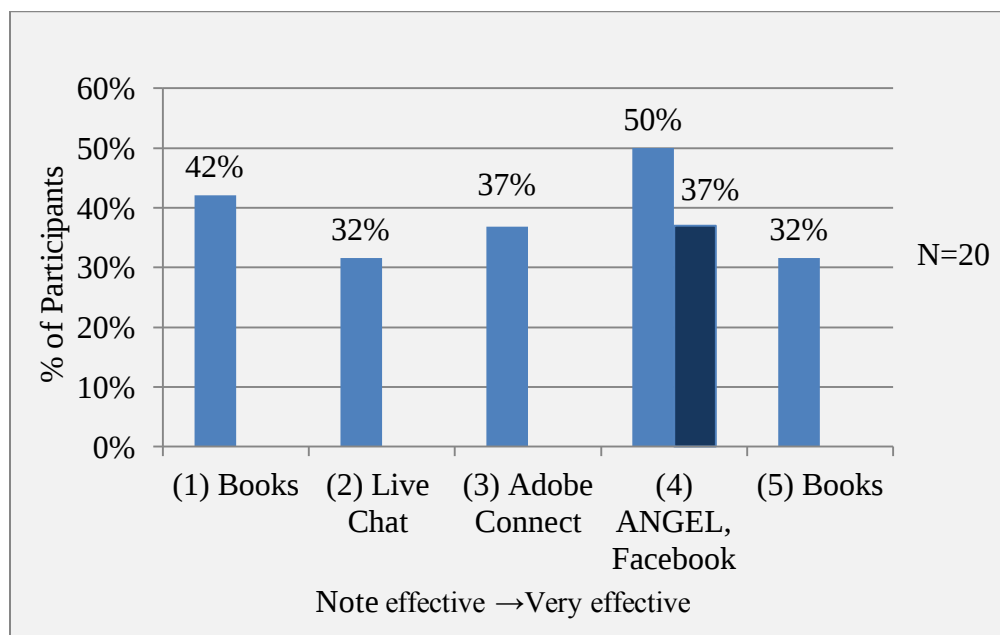


Figure 28: The Effectiveness of ANR491 Instructors, spring semester 2012

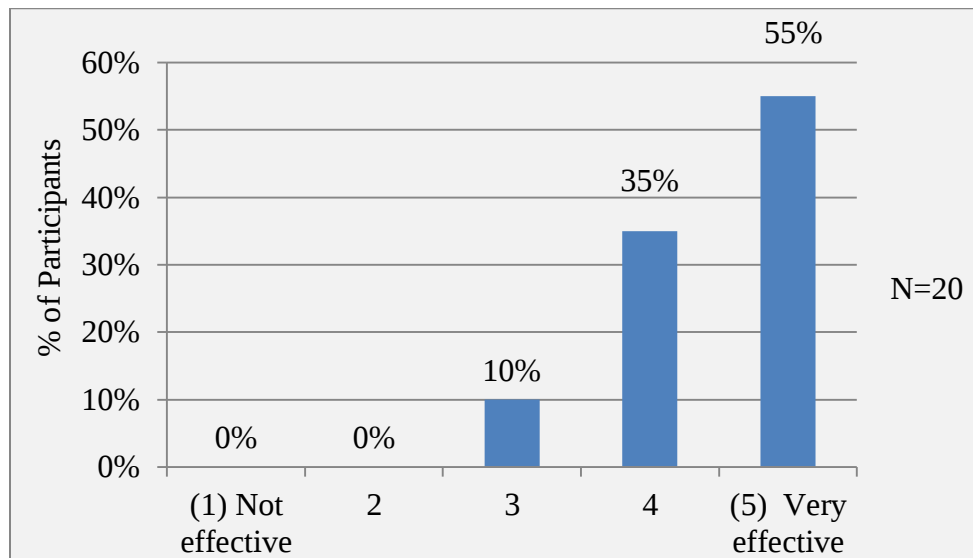


Figure 29: The Effectiveness of ANR491 Instructors' Assistants, spring semester 2012

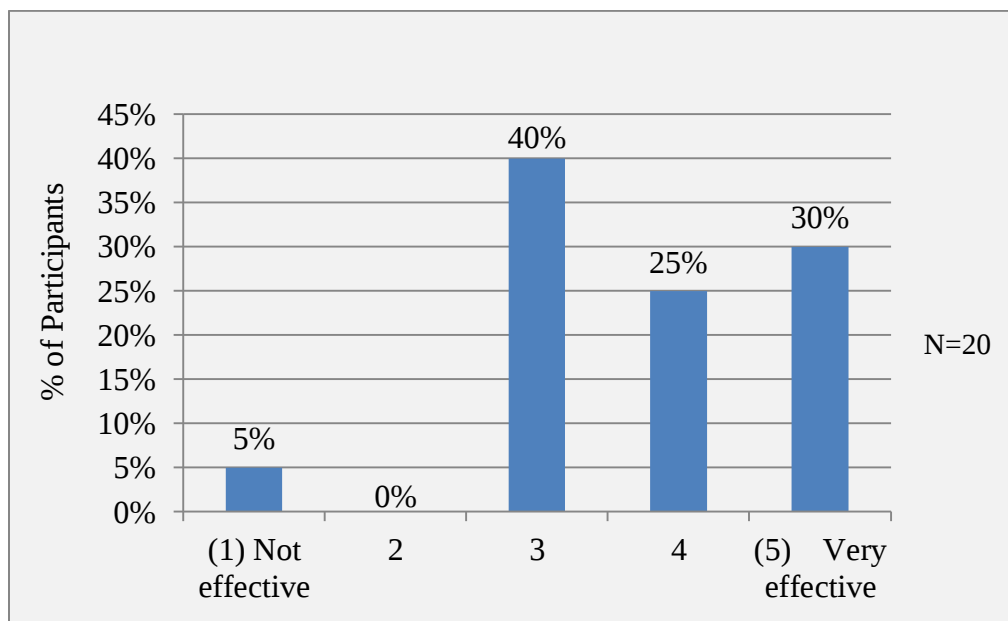


Figure 30: Instructors' Engagement Levels with the Course, spring semester 2012

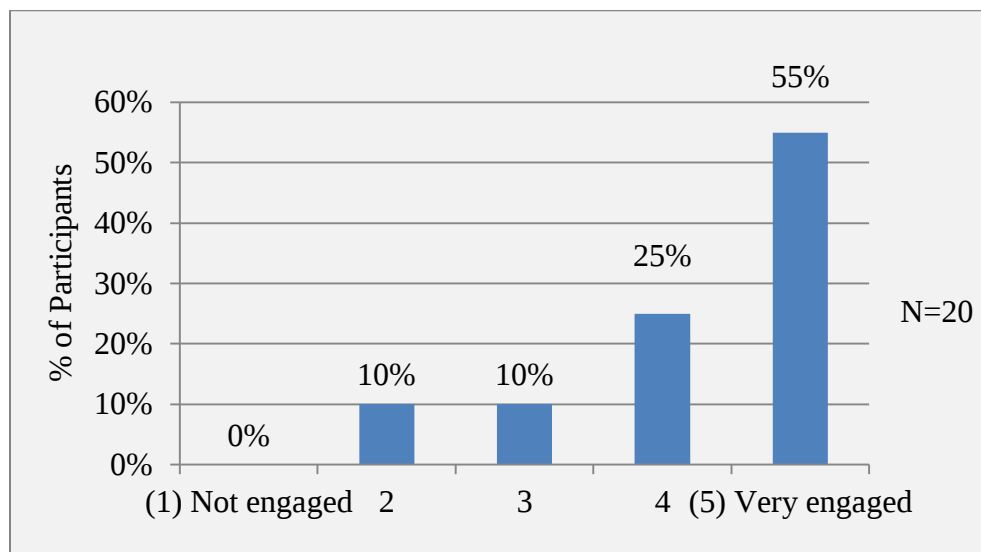


Figure 31: Instructors' Responding in a Timely Manner, spring semester 2012

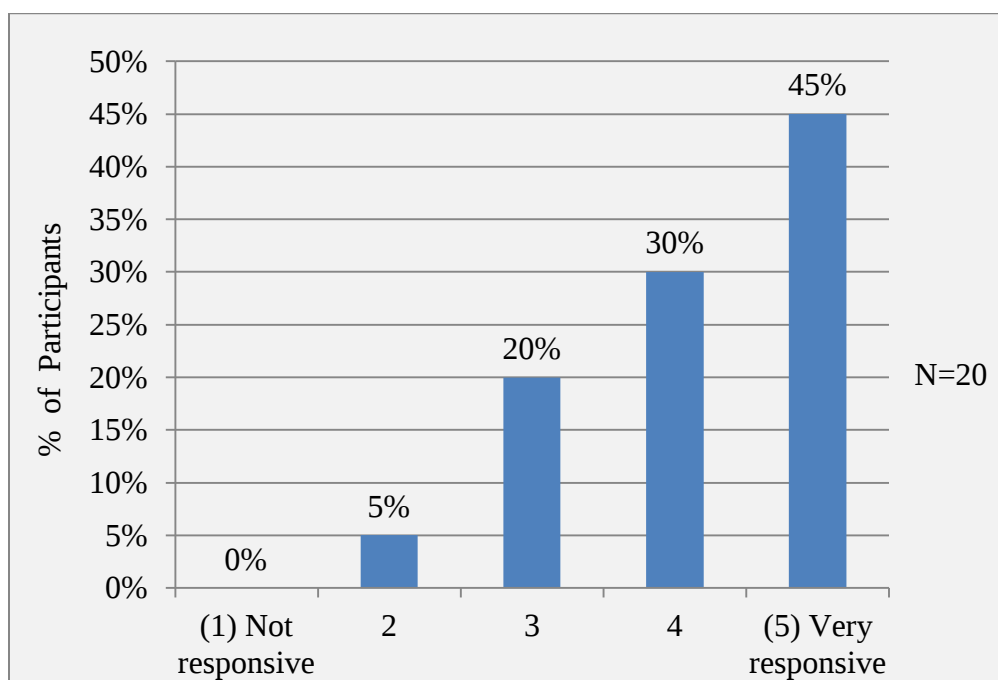
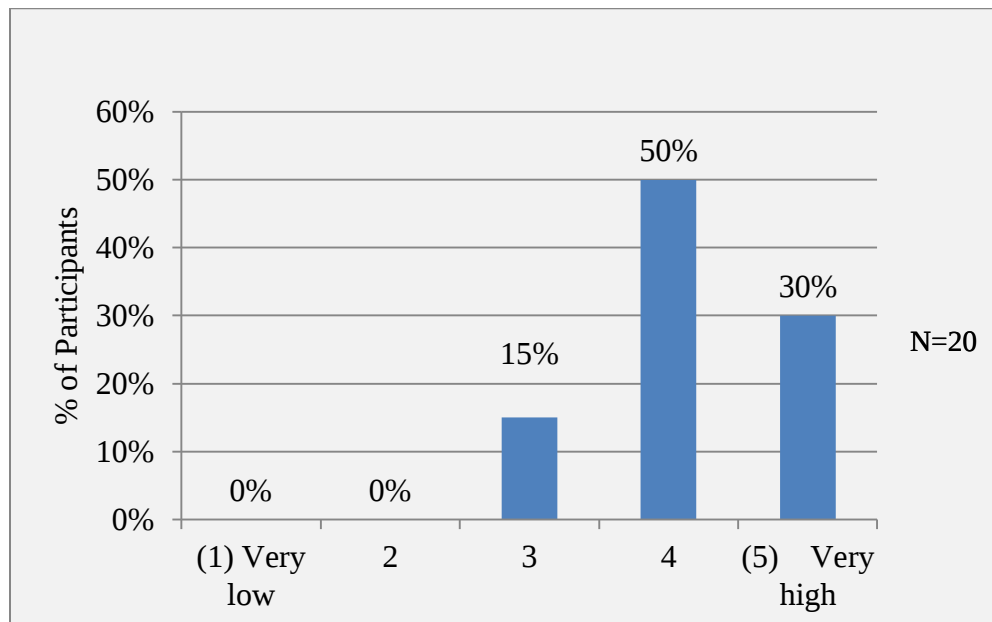


Figure 32: Instructors' Abilities to Communicate New Ideas, spring semester 2012



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