Volume 19, Number 1

Print ISSN 1098-8394
Online ISSN 1528-2651

JOURNAL OF ENTREPRENEURSHIP EDUCATION

Editor
Dr.Shawn Carraher
University of Texas at Dallas

The *Journal of Entrepreneurship Education* is owned and published by Jordan Whitney Enterprises, Inc. Editorial content is under the control of the Allied Academies, Inc., a non-profit association of scholars, whose purpose is to support and encourage research and the sharing and exchange of ideas and insights throughout the world.

Authors execute a publication permission agreement and assume all liabilities. Neither Jordan Whitney Enterprises nor Allied Academies is responsible for the content of the individual manuscripts. Any omissions or errors are the sole responsibility of the authors. The Editorial Board is responsible for the selection of manuscripts for publication from among those submitted for consideration. The Publishers accept final manuscripts in digital form and make adjustments solely for the purposes of pagination and organization.

The *Journal of Entrepreneurship Education* is owned and published by Jordan Whitney Enterprises, Inc., PO Box 1032, Weaverville, NC 28787, USA. Those interested in communicating with the *Journal*, should contact the Executive Director of the Allied Academies at info@alliedacademies.org.

EDITORIAL REVIEW BOARD

TABLE OF CONTENTS

THE OXFORD MBA: A CASE STUDY IN CONNECTING ACADEMIA WITH BUSINESS

Suzanne M Erickson, Brenau University
William Laing, Brenau University

ABSTRACT

This paper describes a unique partnership between a business school and a business accelerator to create an MBA in Entrepreneurship that will provide students with the practical as well as the theoretical knowledge and skills they need to succeed as entrepreneurs. In addition to academic coursework in traditional business disciplines and entrepreneurship, students in the program must network with entrepreneurs and have the option of participating in a paid apprenticeship with a CEO in a business similar to their area of interest. It is the hands-on experience with an entrepreneur as well as the valuable networking opportunities that make this program truly unique.

Keywords: *Entrepreneurship, apprenticeship, partnership, MBA*

INTRODUCTION

How do business schools ensure that they remain relevant over time and that their efforts are preparing students for tomorrow's business world? Certainly, the popular press is filled with articles suggesting that business schools are not doing a good job of maintaining relevance or preparing students. (Boyde, 2013) (Bones, 2007) (Muff, 2012)

In the area of entrepreneurship, the question is even more intriguing since entrepreneurs tend to be a breed apart from more corporate focused individuals – the traditional target market of MBA programs. (Daley, 2012).

Writing in Fortune George Deeb (Deeb, 2013) contends that the MBA needs to be replaced with a more hands-on approach to education:

> *"… in the last decade or two, we have seen a seismic shift in demand for an alternative business education, especially with the rising costs of education. One that teaches the basics in starting your own business and being your own boss. One that is tapped into local startup ecosystems with access to venture capitalists and startup incubators. One that marries expertise in technology development, with startup business and marketing skills. A new breed of business education under the banner: a Master's in Entrepreneurship."*

While Deeb is advocating for a whole new degree, our university is implementing the other aspects of his idea within the context of an MBA. In an effort to improve the outcome and increase the odds of success for budding entrepreneurs, the School of Business (SOB) engaged in a partnership with a business accelerator to jointly develop the curriculum of the program and to provide students with access to entrepreneurs and real life case studies to enhance their learning.

THE OPPORTUNITY

A common challenge for entrepreneurship programs is how to provide students with a meaningful entrepreneurial experience. An additional challenge for students is how to develop

the entrepreneurial network needed to start a new business. The coursework alone for an MBA is usually not sufficient to increase the odds of success in launching a new venture. To address these challenges, some schools create a course that is short lived, usually one semester, to start a student-run business. Starting a student-run businesses, while providing some level of practical experience, is fraught with problems however, such as low levels of available capital, risk, and the shortness of time to see the project to fruition.

It has been noted that business schools need new pedagogical models that combine practicality and academic rigor with an entrepreneurial-centered approach. In some programs mentors provide some of these much-needed functions. St. Jean (2011) broke these functions out as psychological, career related, and role model functions. Psychological functions include reflector, reassurance, motivation, and confidence. Career related functions include integration, information support, confrontation, and guide. The role model function includes modeling. In his study, the role model function within entrepreneurship as compared to other career mentors was significant. The results confirmed the importance of the role model or mentoring function as being significantly more important in an entrepreneurship-learning environment than other career functions. Further, entrepreneur's value mentors for the help and support they offer (Deakins et al. 1998)

Emphasizing the need for mentors, a Terjensen and Sullivan (2011) study illustrated the value that nascent entrepreneurs place on having mentors to assist with a new venture. The authors found many nascent entrepreneurs "had difficulty finding and establishing mentoring relationships." This finding resulted in a suggestion by the authors that the nascent entrepreneurs attend networking events and join business associations to increase their chances of finding more experienced entrepreneurs to serve in the mentoring role.

In another study, Raffo, et al. (2000) concluded that a more "naturalistic" way of learning helped small and micro businesses within a cultural industry. Specifically they suggested, among other factors, the use of networking and authentic mentors to increase the probability of success. The study concluded that entrepreneurship in the cultural industries did not just involve the acquisition of technical, creative and business skills, but also the process of developing appropriate social and cultural capital that comes from being part of a network.

Using action based learning Åsvoll and Jacobson (2012) found that students perceived that mentors or entrepreneurs in residence, involved in the process of evaluating and selecting ideas, could improve entrepreneurial education. Also, institutions could help students' lack of a network by establishing a set of general resources, (lawyers, accountants, and industry specialists) that would be available to the students. Highlighting this need was Smith and Beasley (2011), who found the lack of sector-specific mentors as a barrier for graduate entrepreneurs. They cite a solution of co-mentoring with business partnerships and an overarching package of support.

All of these resources take connections, time and money to create. Is it realistic to think that these resources can be provided by a business school and at what cost? The use of mentors, with business experience in a specific industry, as well as networking experiences is what the university and the Oxford Center jointly provide. By sharing the endeavor with a business accelerator, the identification of the mentors and the participants in the networking become the responsibility of the Oxford Center which has the expertise and the connections to provide these resources at lower cost than the university could do on its own.

THE PROGRAM

In 2014, Brenau University launched the Oxford MBA in Entrepreneurship. The Oxford Center for Entrepreneurs is a locally based business accelerator. Their website states:

> The Oxford Center for Entrepreneurs is the largest education, commerce, and media platform for high-growth entrepreneurs who want to grow fast to the next level and exit successfully. http://oxford-center.com/

The founder of the Oxford Center, is a successful entrepreneur who feels strongly that there is no need for entrepreneurs to keep making the same mistakes that their predecessors made as they launch and grow their businesses. The Oxford Center's primary mission is to provide a safe networking platform for entrepreneurs to share challenges and lessons learned as they grow their businesses. The Center's agenda is highly oriented towards education – education of entrepreneurs and now education of students interested in entrepreneurship.

The curriculum for the Oxford MBA was jointly created by the Oxford Center and the School of Business faculty. The founder provided critical, practical input on what skills are most crucial for a successful entrepreneur. His input on what skills are less relevant in the marketplace was also illuminating. We believe ongoing interaction of this type with business people in setting our curriculums is crucial to increasing the relevance of business education and insures that the curriculum reflects the changing business environment.

The core curriculum of the Oxford MBA in Entrepreneurship is the same core as all the MBA programs at the University and contains the usual courses in Accounting, Economics, Marketing, Finance, Management, Strategy and Operations. The Entrepreneurship major courses include five courses focusing on the skillset needed for success in entrepreneurship. Two of the five courses are marketing focused at Oxford's suggestion: Innovation and New Product Development and Channel Development, one is focused solely on raising entrepreneurial capital, and the other two are more holistic looks at the entrepreneurial process. It should be noted that four of the five courses in Entrepreneurship are shared with other majors. This course sharing drastically reduces the cost and risk of a new program.

The real added value of the Oxford MBA does not come in the classroom, however. Every new student in Entrepreneurship is contacted by an Oxford Center staff member, generally before they have made contact with an academic advisor. As part of their Oxford program, they are required to participate in ten Oxford events over the course of their MBA program (typically two years). Given the number of required events, it is imperative that students join the Oxford Center and get started on this part of their program from day one.

Oxford events include roundtables, speaker series, commerce lunches and dinners and webinars. The real benefit to the students of the membership in the Oxford Center is the ability to network with entrepreneurs. At a typical roundtable, there may be 100 entrepreneurs present. Time is allowed for networking before and after the official program which typically involves a very fast based series of "hot seats" for entrepreneurs to present their successes or what they are struggling with and need input on. For the entrepreneurs it is an opportunity to draw on the wisdom of other entrepreneurs who have faced similar issues and for the students it is an opportunity to see what the issues are and engage with entrepreneurs pursing business ideas similar to their own.

HOW IT WORKS

Students in the Oxford MBA pay an additional fee on top of their tuition to cover membership in the Oxford Center. The fee is paid by the University to Oxford but collected as tuition which means it is covered by the financial aid that is critical to the success of the program. There are currently two levels of membership in the program:

The Global Entrepreneur MBA is designed for students who already have a business and need the business skills education to help the business grow and succeed. This level of membership includes membership in the Oxford Center for the life of the student's academic program, which includes access to all events.

The MBA with CEO Apprenticeship is designed for students with an idea for a business but not yet engaged in the business. This level of membership includes membership in the Oxford Center as well as a paid apprenticeship with a CEO in a business similar to the business idea the student has. It is the student's responsibility to network among the members to discover the right mentor, but the Oxford staff is also involved in recommending and connecting students with entrepreneurs.

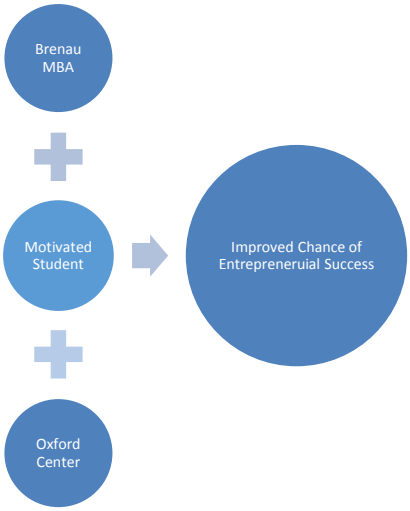
Both levels of membership include the opportunity for students to have their business ideas and plans vetted by the Oxford Center staff.

While we are still early in this new program's life (currently in the second year), experience has taught us a few things we did not anticipate when we launched the program. In our enthusiasm, we assumed that students would flock to the Oxford events, taking advantage of the opportunity and network their way to success. Indeed, the very first student in the program did just that. What we soon discovered is that that first student was ideally suited for this program and completely unafraid of putting herself out there to meet anyone and everyone she could.

We began to notice that other students were not attending events, so we became very intentional about the process. In the beginning, there was no requirement for number of events attended since we assumed students would go to everything they could. When we discovered this wasn't happening we arranged a dinner of all the Oxford MBA students to explain to them that a great opportunity was being provided, but like all education, it was the student's responsibility to take advantage of that opportunity by going to events, introducing themselves as students and beginning the learning process. We were able to use the experience of the first student to illustrate how the process should work. By aggressively networking, that student had gotten an apprenticeship with an organization she had never previously considered but one that was a perfect fit for her business idea.

The Oxford Center ultimately hired that first student to be their Director of Development. One of her primary responsibilities is managing the students. She sends them special notifications of events, she greets and shepherds them at Roundtables to increase their comfort factor, and she is charged with recruiting new students to the program. With the benefit of hindsight, this is a crucial piece to the success of the program that we failed to anticipate. Networking skills are important to all business people, but they are especially important for entrepreneurs. Engaging in these networking sessions, students will either improve their skills to take advantage of the accumulated wisdom around them, or they will discover that perhaps entrepreneurship is not their optimal career path. Either outcome is OK – but it is better to discover a misfit early rather than late.

Figure 1



BENEFITS

The benefits of this program to all involved are many. First, to the University, the program allows us to create a distinctive offering unlike any other that we know of. As a mid-sized, tuition-driven, private institution Brenau is constantly seeking innovative ways to grow revenue through programming. Offering generic MBAs does not give us a competitive advantage in a very crowded MBA marketplace. Offering distinctive, value-added programs that are not replicated is a growth strategy.

A second, very important benefit of the Oxford relationship (or any relationship with an outside partner) is the potential for free marketing. Most university marketing budgets are not as large as faculty would want, and specialized, targeted marketing efforts are especially hard to justify in the competition for marketing dollars across the university. The "Oxford MBA" is a prominent link on the Oxford Center website. While this website is viewed by precisely the target market for the program, it is highly unlikely that the entrepreneurs would seek out Brenau on their own. Brenau is cobranded on all materials used by the Oxford Center. At every roundtable the name of the university is featured on every slide, the School of Business Dean attends the events and is always noted. In 2014, the Brenau and Oxford were co-sponsors of a conference in New York City. This is not the type of event Brenau would have ever organized on its own but it provided invaluable publicity since all of our programs are available on line – again reaching a target market we would be unlikely to reach with our marketing budget.

A third benefit to Brenau is the Oxford Center's involvement in evaluating the curriculum. Career academics can fall into a trap of teaching something because it has always been taught or because it is elegantly stimulating (mathematical models of business behavior). It is extremely valuable to talk in depth with business people about what we are teaching and its relevance and usefulness to practicing entrepreneurs.

To the Oxford Center, affiliation with a university fits into their overall mission of education, but also provides them with the added credibility that comes from being associated with an academic institution. At a very basic level, the Oxford Center is targeting students before

they launch their businesses in the hopes of preventing them from making mistakes that others have made before them.

Finally, to the students the Oxford Center provides something akin to a very strong alumni network of contacts. In fact, the Oxford network is potentially more valuable than an alumni network since the members are all entrepreneurs and thus have pertinent, valuable insight to provide. Students have the opportunity to pitch their ideas to informed advisors and to learn from CEOs in their apprenticeships. While similar to an internship, the apprenticeship model specifically matches people based on mutual interest and puts the student in a position much higher in the organization than an internship typically would. The apprenticeships are paid from the fees that the students pay to join the program, thus no cost to the company is involved. The potential value of this networking opportunity cannot be overstated, but it takes constant effort to remind the entrepreneurs of the existence of the students and to encourage the students to work on their networking skills.

CHALLENGES

The first challenge for this program is marketing. While the Oxford Center provides free marketing, they are not expert in targeting and recruiting students. The University is reluctant to spend scarce marketing dollars on such a specific program so getting the word out is a challenge that leads directly to an enrollment challenge. The program is still very new, but targeted marketing will be one of the major issues to be solved to grow the program sufficiently.

The second challenge is the culture clash that inevitably happens when business and academia interact. The process of change in academics must appear glacial to a business person used to pivoting on a dime in response to new market forces. The academic tradition of being governed by the annual course catalog means that any changes in programming are usually more than a year away from being implemented once it is determined that they are warranted.

A second cultural challenge is the tendency to wheel and deal in selling that is part and parcel of business but is not typically associated with academic admissions. It is sometimes difficult for our partner to understand that the academic program is the same for everyone and follows a predictable time table and set of admission standards, that may not seem fast or flexible enough to entrepreneurs.

CAN IT BE REPLICATED?

While the story of the Oxford MBA is an interesting story, it is only valuable if it can be replicated. The partnership can be replicated but not without a significant amount of dedicated effort.

In our case, the Oxford Center itself is critical to the success of the program. However, a similar situation could be created through an Entrepreneurship Advisory Board that was willing to invest time and energy in events for the students to attend and network at. Obviously, the primary focus of the networking events should be on the entrepreneurs themselves, and there must be an element of programming that attracts them to the events. The events could be coordinated by an Entrepreneurship Program Coordinator, who would be tasked with inviting entrepreneurs, managing the Board, coordinating networking events and apprenticeships. This could all be done by a university employee, using the Board to create networking opportunities. In fact, a dedicated university employee coordinating the process might in fact make it work more smoothly if the entrepreneurship program was the staff person‘s primary responsibility.

A second possibility would be to link up with a business accelerator like the Oxford Center. This is feasible in large cities where these groups tend to exist but the accelerator would have to see the value in education to be willing to include students in their events. Like the Oxford Center, these groups typically provide programming for their members so the marginal cost of inviting students is negligible. Apprenticeship opportunities may take some convincing but MBA students could add real value to a smaller business or start up.

In the case of the Oxford Center, putting on educational and networking events is part of their business model, so the marginal cost of including students is very small for them. A key to the success of their events is the feeling by the attendees that they learn something valuable every time they come. This means that the attention to programming and the highlighting of new entrepreneurs each time is critical to the success of the model.

Another option for replication would be an alliance with the local Small Business Administration office or Chamber of Commerce. These groups routinely provide programming for entrepreneurs and could provide a similar set of networking opportunities. Apprenticeships could be arranged through the university's Career Center if the staff has a way to identify entrepreneurial ventures to provide the opportunities. A connection between the Career Center and the SBA or Chamber office could provide those connections. What is clear is that the university must have an external partner of some sort to achieve the full benefits of an Oxford type MBA program. Connection to entrepreneurs is the key ingredient and it is unlikely that a university could locate a critical mass of entrepreneurs on its own.

CONCLUSION

Many of the opportunities discussed above are met through the use of the Oxford Center. Mentors are provided and fulfill the roles pointed out by St. Jean (2011) who broke these functions out as psychological, career related, and role model functions. The role model function, which includes modeling, is an essential part of the Oxford Center. Students are paired with a mentor from their specific industry area. This is supported by and fulfills the research mentioned by Smith and Beasley (2011), who found a lack of sector specific mentors as a barrier in graduate entrepreneurship education. The importance of modeling and the value of mentors is also emphasized by Deakins et al. (1998) and Terjensen and Sullivan (2011). Terjensen and Sullivan (2011) found that the need for nascent entrepreneurs to have mentors was important and that the entrepreneurs had a hard time finding mentors. The partnership described in this study would alleviate the search process. Further, Terjensen and Sullivan (2011) and Raffo, et al. (2000) both stress the need for networking. This networking is also provided by the Oxford Center through the member network the Oxford Center has established. Student have access to successful entrepreneurs on a regular basis at the monthly meetings.

Further research along longitudinal lines would be beneficial to determine the effect of this partnership. Will graduates of this program start new businesses at a higher rate than graduates of more traditional entrepreneurship programs, or of no entrepreneurship training at all? Will their businesses persist longer than the average start up? Another area of additional research is the use of an inbound measurement instrument for the entrepreneurial attitude of the students along with an outbound measure. The application to the academic field is that this program can be replicated and provide mentoring and networking opportunities that medium to small universities typically cannot establish. Further, in a practical aspect the application of real-world skills has been highlighted at the beginning of this paper (Boyde, 2013) (Bones, 2007) (Muff, 2012). The program provides a practical process for the development of entrepreneurs in

an environment that is conducive to learning and risk-taking. Further academic research could include a look at gender specific and sector specific success rates for the mentoring and networking components of the program. This would provide some context as to the effectiveness of the program. The overall conclusion is that while further academic and applied research data would be beneficial this is a program that needs to be replicated to further the next generation of entrepreneurs.

REFERENCES

Åsvoll, H., & Jacobsen, P. J. (2012). A case study: action based entrepreneurship education how experience problems can be overcome and collaboration problems mitigated. Journal of Entrepreneurship Education, 15.

Bones, C. (2007). What's wrong with business education? *Management Today*, 70-71. Retrieved from https://ezproxy.brenau.edu:2040/login?url=http://search.proquest.com/docview/214790554?accountid=9708

Boyde, E. (2013, July 14). *Financial Times*. Retrieved June 24, 2015, from ft.com: http://www.ft.com/cms/s/2/854af00a-da67-11e2-a237-00144feab7de.html#axzz3dzj9j16g

Daley, J. (2012, October). Is an MBA Still Necessary? *Entrepreneur*, p. http://www.entrepreneur.com/article/224440.

Deakins, D., & Graham, L. (1998). New venture support: an analysis of mentoring support for new and early stage entrepreneurs. (Journal of small business and enterprise development, 1998. Nr. 2, S. 151 - 161.) S.l.: s.n..

Deeb, G. (2013, October 16). *Forbes.com.* Retrieved from www.forbes.com: http://www.forbes.com/sites/georgedeeb/2013/10/16/out-with-mbas-in-with-masters-in- entrepreneurship/

Mills, J., Barakat, S. and Vykarnam, S. (2012) "Impact of mentoring and peer-learning within a global entrepreneurship programme." (pdf, 334KB) *ASEAN Entrepreneurship Conference (AEC2012).*

Muff, K. (2012). Are business schools doing their job? *The Journal of Management Development, 31*(7), 648-662. doi:http://dx.doi.org/10.1108/02621711211243854

Raffo, C., Lovatt, A., Banks, M., & O'Connor, J. (2000). Teaching and learning entrepreneurship for micro and small businesses in the cultural industries sector. Education & Training, 42, 6, 356-365.

Smith, K., & Beasley, M. (2011). Graduate entrepreneurs: intentions, barriers and solutions. Education & Training, 53, 722-740.

St-Jean, É. (2011), "Mentor functions for novice entrepreneurs", Academy of Entrepreneurship Journal, vol. 17, no. 1, p. 65-84.

Terjesen, S., & Sullivan, S. E. (2011). The role of developmental relationships in the transition to entrepreneurship. Career Development International, 16, 5, 482-506.

COMPARING MILITARY VETERANS AND CIVLIANS RESPONSES TO AN ENTREPRENEURSHIP EDUCATION PROGRAM

Sharon A. Kerrick, University of Louisville
Denise M. Cumberland, University of Louisville
Namok Choi, University of Louisville

ABSTRACT

With veteran unemployment rates in the U.S. higher than civilian rates there has been growing support for assisting military veterans starting businesses. This study compares the impact of a community entrepreneurship training program for civilians and military veterans. Cohort groups (2012-2014) were scored with pre/post surveys in the areas of entrepreneurial self-efficacy and passion as well as networking frequency. Military participants' passion scores were significantly higher than civilians as were their percentage of actual business launches during and within one year of the program. Findings contribute to the strategy of how entrepreneurship programs can change attitudes and behaviors that influence startup as well as revealed information regarding veterans pursuing entrepreneurship.

INTRODUCTION

Entrepreneurship is touted as the American Dream, as well as a strategy for economic growth and job creation. Defined as the creation of new ventures by individuals or small groups, entrepreneurship typically begins with enterprises that are characterized as small businesses with less than 500 employees (SBA Office of Advocacy). In 2011, 28.2 million small businesses employed 50% of the working population (US Small Business Administration, Office of Advocacy, 2012). Small businesses have generated over 65% of the net new jobs since 1995 with total revenues generating over $989 billion annually (Nazar, 2013). While these businesses may each be small in size, combined together they provide fuel for the U.S. economic engine. Kauffman Foundation (2013), a leading entrepreneurship research organization, identified that there are approximately 543,000 new U.S. companies launched each month.

Due to the significant drawdown of military personnel (Alexander & Shalal, 2014) and veteran unemployment rates higher than civilian unemployment rates (Garamone, 2014), there has been growing support for assisting military veterans interested in starting business ventures. Interest in military veteran business startups is based on a strong track record of former military personnel pursuing entrepreneurial endeavors. According to a 2007 U.S. Census Bureau report, military veterans are majority owners in over 2.4 million businesses (9% of all businesses in the U.S.) employing over 5.8 million people and generating over $1.22 trillion in revenue. Recent research identified that approximately 45% of military veterans are likely to become self-employed (Hope, Oh, & Mackin, 2011).

The premise that entrepreneurship is a learned skill (Henry, Hill, & Leitch, 2005; Mitra & Matlay, 2004; Zimmerer & Scarborough, 1998) suggests that education can fuel the passion for creating and implementing new business ideas (Kuratko & Hodgetts, 2004), as well as impact individuals' confidence in achieving their goals. Beyond impacting core attitudes,

entrepreneurship training and education should also help individuals expand their networks and resources. Our aim for this research is to discover how a community-based entrepreneurship educational training program influences nascent entrepreneurs (civilian and military) and discover what impacts it may have on strengthening entrepreneurial passion (EP), positively impacting entrepreneurial self-efficacy (ESE) as well as increasing levels of networking frequencies comparing military veterans and civilian participants. This study contributes to the literature in these three specifically measured constructs as well as compares military veteran nascent entrepreneurs to civilian nascent entrepreneur participants thus providing information for economic development strategy, policy and entrepreneurship education and training.

Using data harvested from a community startup entrepreneurship educational training program composed of nascent entrepreneur civilians and military veterans, our study addresses three primary research questions:

1. Will a community based entrepreneurship training program improve participants' ESE scores, and is there a difference between military veteran participants and civilian participants' scores?
2. Will a community based entrepreneurship training program improve participants' EP scores, and is there a difference between military veteran participants and civilian participants' scores?
3. Will a community based entrepreneurship training program impact participants' networking frequency, and is there a difference between military veteran participants and civilian participants in this realm?

In subsequent sections we begin with a literature review on entrepreneurship education and training programs, ESE, EP, and participants' network frequency. This is followed by a description of the research methodology, including an overview of a Midwestern city community entrepreneurship training program called "LaunchIt". We conclude with an analysis of the results followed by discussion and implications.

THEORY AND HYPOTHESIS

Entrepreneurship Training and Education

Community programs, economic development initiatives, universities, community colleges and private industry are offering a variety of entrepreneurship educational training courses to address employment issues and build local economies. Entrepreneurship training and education is delivered in many shapes and sizes as well as delivered by many entities both private and public. It is well documented that University entrepreneurship courses have continued to grow (Carey, Flanagan, & Palmer, 2010; Dess, Lumpkin, & Eisner, 2008). Many approaches are utilized in these various programs: face-to-face, classroom, online, business simulations, etc. Within specific industries, the approach for training startups varies (e.g. Mano, Iddrisu, Yoshino, & Sonobe, 2012; Sonobe & Otsuka, 2011). For example, some micro financing organizations offer classroom training (McKenzie & Woodruff, 2012) and others offer it as part of their regular group meetings (e.g. Karlan & Valdivia, 2011; Berge, 2011) some mandatory some optional (e.g. Bruhn & Zia, 2012). The need and demand for entrepreneurship education and training continues to grow although evaluation outcomes regarding behaviors throughout these programs are frequently not tracked. These are the very items we investigate further.

Nascent entrepreneurs are challenged with developing both hard skills and soft skills to persevere. The hard skills encompass gaining knowledge with respect to marketing, finance, legal, operations and other functional disciplines while soft skills are more attitudinal such as meeting and interacting with various people. Research has shown, however, there is a need for

entrepreneur education and training to impact the attitude of individuals pursuing their dreams of starting their own businesses. Harris, Gibson, and Taylor's (2008) study of 358 students revealed that completing a Small Business Institute (SBI) course positively impacted entrepreneurial attitudes with respect to innovation, achievement, personal control and self-esteem. Since 2007 Syracuse University's Entrepreneurship Bootcamp for Veterans with Disabilities has grown to include seven other affiliated programs for veterans with over 800 graduates. Because entrepreneurship is appealing to military veterans and they have a desire to achieve as well as lead (Hoppenfeld, et al., 2013), the Small Business Administration rolled out various entrepreneurship education programs specifically designed for military veterans such as their "Boots to Business program". There is empirical evidence identifying that entrepreneurship education and training interventions impact adult attitudes toward entrepreneurship (Hansemark, 2003; Hatten & Ruhland, 1995). Rahman and Day (2014) suggested that role models can be positive motivation for budding entrepreneurs. Empirical evidence on how entrepreneurial training impacts veterans' attitudes, however, is limited.

Another component tied into the notion that entrepreneurship education has impacts on outcomes is the theory of planned behavior (Ajzen, 1991). It provides a foundational element regarding the notion that attitudes are influenced by beliefs and outcomes are associated with behaviors. Participants' levels of accomplishing tasks, such as marketing, networking and customer discovery are influenced by the belief that these activities will impact behavioral outcomes in regards to starting their business. Research shows that entrepreneurial attitudes can be developed through entrepreneurship education programs (Mitra & Matlay, 2004; Robinson, Huefner, & Hunt, 1991). It has also been well researched that education and skills development help explain the various levels that people engage in entrepreneurial activities and are more successful than others (Carter, Gartner, Shaver, & Gatewood, 2003; Gatewood, Shaver, Powers, & Gartner, 2002). During entrepreneurship education, participants attend class and engage in various business activities that potentially lead to attitudes and situations changing through an interactive process with the environment (Gibson, Harris, Walker, & McDowell, 2014). Once a person's attitude has been measured, a prediction can be made about the person's future actions (Carlson, 1985). During participation in an entrepreneurship business startup training program, goals are set by individual participants, and along with their attitude and beliefs being impacted, we specifically study their ESE and EP scores as impacted via pre and post surveys. We also examine how entrepreneurial training influences networking frequency behavior.

Self-Efficacy

One way to define self-efficacy is that it is the belief that one can achieve a goal. Derived from Bandura's (1977) social learning theory, empirical studies have subsequently demonstrated that self-efficacy is linked to an individual's ability to succeed (Judge & Bono, 2001; Stajkovic & Luthans, 1998; Wood & Bandura, 1989). Empirical studies have also demonstrated self-efficacy impacts career choice (Zhao, Seibert, and Hills 2005) as well as an individuals' willingness to tolerate risk (Krueger and Dickson 1994), both of which are closely connected to the idea of an individual pursuing self employment. For example, nascent entrepreneurs need unique skills different from those of managers and they must also confront the prospect their venture will not succeed (Chen et al., 1998). This anxiety of failure presents a profound barrier that individuals higher in self-efficacy may be able to more readily navigate.

In the last two decades, researchers have become interested in self-efficacy as a concept that can help explain a nascent entprepreneur's drive to create a new venture (DeNoble, June, &

Ehrlich, 1999). Chen, Crick, and Greene (1998) defined ESE as the degree to which an individual believes that they have the ability to successfully perform various roles and tasks related to starting a business. Given that self-efficacy is a predictor of behavioral outcomes, scholars have sought to understand the impact of entrepreneurial training on individual's ESE (Cumberland et al., 2015).

Research on whether entrepreneurial education improves confidence in pursuing entrepreneurial endeavors, however, has been mixed. Cox, Mueller, and Moss' (2002) study, for example, found that university entrepreneurship courses had a negative impact on ESE scores among students. These scholars suggest education of entrepreneurship may shed a more realistic light on the demands involved in launching and sustaining a business thereby decreasing interest in these endeavors. Karlsson and Moberg's (2013) pre/post survey study, on the other hand, found that entrepreneurial education had a significant positive effect on university student's ESE scores. These studies may not be generalizable since they were university students. The lack of consistent results in these various studies suggests further research is needed and led us to research a community entrepreneurship training program whereby adult participants state that their intentions for enrollment are to start a business. In summary, we expect:

H1: A structured community entrepreneurship training program will positively impact both military veterans and civilian participants' ESE.

Entrepreneurial Passion

Passion has been described as a key driver of entrepreneurial action (Anderson, 2013; Cardon, Gregoire, Stevens, & Patel, 2013) and has been associated with the ability to raise capital (Cardon, Wincent, Singh, & Drnovsek, 2009). Both entrepreneurial action and capital have been determined as critical components for nascent entrepreneurs. EP appears to be an element in entrepreneurship that can foster creativity, as well as enhance recognition of new patterns for the discovery and exploitation of opportunities (Baron, 2008; Sundararajan & Peters, 2007). This multi-dimensional construct identifies three domain roles specifically aligned to the activities of inventing, founding and developing (Cardon et al., 2009). Passion for inventing involves scanning for new market opportunities (Cardon et al., 2009). Those within this domain role enjoy and seek satisfaction by coming up with new solutions and ideas for products and services. Passion for founding is the desire to create an organization (Aldrich & Zimmer, 1986); here the founder's role identity is central to the entrepreneur's self-concept (Hoang & Gimeno, 2010). Need to achieve is an element of creating an entrepreneurial endeavor (Katz & Gartner, 1988), thus supporting the passion for founding. The last domain, passion for developing, is identified by characteristics of growing and expanding a venture once founded (Cardon et al., 2009).

Despite the level of theorizing around EP over the last decade, only a limited number of empirical studies have been undertaken to understand variables that impact EP. A recent study by Murnieks, Mosakowsi, and Cardon (2014) linked EP to an individual's behavior and found that passion was positively correlated with ESE. With respect to how passion can be triggered, Dalborg and Wincent (2014) found a skill based explanation for how passion develops. In their study of Swedish entrepreneurs, these researchers found that optimism does not drive passion; rather, self-efficacy plays a critical role in building passion. This finding suggests that an entrepreneurial training program, which provides time for entrepreneurs to be further pulled into their business by giving them time to focus, will build ESE and EP. This leads to our second hypothesis:

H2: A structured community entrepreneurship training program will positively impact both military veterans and civilian participants' EP.

Networking

Starting a company some say takes a village or let's call it a "network." A network for entrepreneurs is composed of a cast of characters such as friends, family, accountants, bankers, lawyers, government, economic development folks, and other contacts that have resources and information. Networks potentially provide linkage to resources (Cope, 2005; Greve & Salaff, 2003; Liao & Welsch, 2003; Shane & Cable, 2002). Previous research suggests that network ties are critical for a startup as well as growth of entrepreneurial firms (Aldrich & Zimmer, 1986; Alexiev et al., 2010; Birley, 1985; Cope, 2005; Elfring & Hulsink, 2007; Watson, 2007). Findings are mixed on the desirable amount of frequency with some evidence suggesting that when entrepreneurs engage frequently with their networks they increase levels of relational trust as well as positive expectations (Spence, Schmidpeter, & Habisch, 2003). Other studies regarding advice seeking, relay information overload and reported that high frequency of networking advice seeking has a negative influence on speed to market (Wadhwa &Kotha, 2006).

Granovetter's (1973) seminal work on the concept of strong ties and weak ties addressed frequency of networking. Weak ties characterized by less frequent exposure while strong ties consist of frequent interactions occurring at least twice a week (Granovetter, 1973; Greve & Salaff, 2003; McDonald & Westphal, 2003). It is important to note, however, that Granovetter's term "weak ties" does not suggest that these ties are less important, rather makes the case that networks require both strong and weak ties. Birley (1985) characterized entrepreneurial networks as formal or informal. The informal network is comprised of family, friends, previous colleagues and prior employers. This informal network is willing to offer advice based not on what they know about the proposed opportunity, but rather what they know about the individual. Conversely, formal networks are accountants, bankers, realtors, lawyers, governmental sources and so forth that may require costs for advice or be laden with bureaucracy to navigate through. A gap within the literature on networking appears to be whether entrepreneurial education or training can increase the frequency of nascent entrepreneurs' network interaction. To what extent is there a networking level difference in military veterans and civilians? Leading to our third hypothesis that:

H3: A structured community entrepreneurship training program will positively impact military veterans as compared to civilian participants' level of networking frequencies.

METHODS

Participants

We conducted this study with self-identified nascent entrepreneurs who enrolled in a community entrepreneurship training course called "Launch It". It was developed and sponsored by a Midwestern university. Data were collected via paper/pen surveys on the first and last day of class from a total of four separate training course cohorts held throughout spring 2012 and fall 2013. Each course met once a week for three hours over a 10 week time period. The course materials included: exploring entrepreneurship basics, networking, defining target markets, conducting market research, testing/prototyping business concepts, entering and capturing the

market, and financials and intellectual property. Each week various community subject matter experts (attorneys, accountants, etc.) would speak to the class and offer networking opportunities. All class participants were assigned to a small group of four in the class cohort and assigned a community business startup mentor with whom they would meet with weekly separately from the training sessions. The civilians and veterans were purposefully divided among these small groups to integrate the participants. These small groups were developed to foster diversity and promote a higher level of cognitive learning (De Vita, 2001). Each cohort had approximately 17–38 total enrolled participants. There was a cumulative total of 121 participants comprised of 34 females and 87 males. The number of volunteer participants fully completing both pre and post surveys was 58 (41 civilians and 17 veterans).

Design & Procedures

Our study adopted a pre/post survey design (Shadish, Cook, & Campbell, 2002) to measure the participant's change of attitudes with respect to: ESE, EP, as well as changes to the amount of consultations/frequency of discussion/advice regarding participant's startup business that occurred within their networks. The facilitator of the training course sessions identified each participant's survey responses as either a civilian or a military veteran with a unique numeric identification number. Participants were assured anonymity via this numeric system known only to the facilitator of the courses.

Measures

The pre and post survey instrument included: basic demographic information, an ESE question section, an EP question section and a frequency of networking section.

Entrepreneurial Self-Efficacy

We utilized a five item scale to measure ESE in specific entrepreneurial task domains derived from Zhao, Hills, and Seibert (2005). The five domains: 1) identify new business opportunities, 2) create ways to improve existing products for a new business, 3) create products or services that fulfill customers' unmet needs, 4) develop a new business, and 5) think creatively in business. A seven-point Likert scale was used in this section with higher scores indicating higher levels of ESE. The internal consistency reliability coefficient of the scores from the five items in the current study was .94 on the pretest, and .87 on the post survey, and these coefficients were deemed acceptable for research purposes (Henson, 2001).

Entrepreneurial Passion

We utilized a thirteen item validated scale developed by Cardon et al. (2013) that is used to measure positive feelings within the three domains of EP . Cardon and colleagues delineated EP as a construct encompassing three domains: inventing, founding, and developing, and these three domains represent relatively stable intense positive feelings toward entrepreneurial activities. As recommended by Cardon et al. (2013), we used the 13 items on a 7-point Likert scale (instead of 5-point) ranging from strongly disagree to strongly agree. The internal consistency reliability coefficients for the scores from the pretest in each domain are as follows: .93 for inventing passion, .92 for founding passion, and .91 for developing passion.

Networking Frequencies

Participants were asked to indicate how often they consulted with friends, family, other entrepreneurs, and business associates about their new business ideas. This approach was adopted and modified based on De Stobbeleir, Ashford, and Buyens (2011). Participants were asked to identify frequency of contact with each of these parties via a reverse ordered 4-point scale (1= all the time to 4= rarely).

Analyses

We conducted a series of exploratory factor analysis on the correlations from the measures of ESE and EP separately because the ESE measure was newly adapted from Zhao et al. (2005), and the EP measure was also a new measure. Both measures could benefit from an additional validation effort by examining factorial validity of the scores generated from those measures. In factor analyses, we used three criteria for deciding how many factors to retain: Kaiser's rule of eigenvalues greater than 1, the scree test, and parallel analysis. The relatively new criterion, parallel analysis, provides another statistical technique to add more confidence in determining the number of factors to retain. For a factor to be retained in parallel analysis, the magnitude of eigenvalue for the factor generated from actual data needs to be greater than the magnitude of eigenvalue generated from random data (DeVellis, 2011). Once the number of dimensions of each measure was determined for each instrument, we proceeded to obtain descriptive statistics, reliability analysis, and primary analysis results.

RESULTS

Table 1
FACTOR STRUCTURE COEFFICIENTS, COMMUNALITIES, AND MEANS, AND STANDARD DEVIATIONS FOR THE ENTREPRENEURIAL SELF-EFFICACY MEASURE

Item	h^2	Mean	SD	SMC
I can successfully develop a new business.	0.76	5.61	1.54	0.90
I can identify new business opportunities.	0.81	5.71	1.40	0.87
I can think creatively in business.	0.66	5.92	1.46	0.81
I can create products or services that fulfill customers' unmet needs.	0.65	5.97	1.23	0.81
I can create ways to improve existing products for a new business.	0.57	5.90	1.24	0.76

Factor Analyses on the Entrepreneurial Self-Efficacy Measure

First, a principal axis factor analysis was performed on the correlations among the five items from the ESE measure. The Bartlett's test was statistically significant ($p < .000$), indicating that the correlation matrix in the population was not an identity matrix. As expected, all three criteria (eigenvalue greater than 1, scree plot, and parallel analysis) suggested a one-factor structure of the scores. The single factor accounted for 75.04% of the total variance, and the communalities ranged from .57 to .81. All five items had sufficiently high factor structure coefficients of .80 or higher with a mean communality of approximately .69. The single-factor structure retained was viewed reliable since all the factor loadings were greater than .80 with

relatively large communalities. In general, factors are considered reliable when there are four or more factor loadings above .60 regardless of sample size (Stevens, 2009). Means and standard deviations for the five items along with factor structure coefficients are reported in Table 1. As can be seen in Table 1, participants as a group had higher than average ESE with means ranging from 5.61 to 5.97 with a maximum of 7.

Table 2
FACTOR STRUCTURE COEFFICIENTS, COMMUNALITIES, AND MEANS, AND STANDARD DEVIATIONS FOR THE EP MEASURE

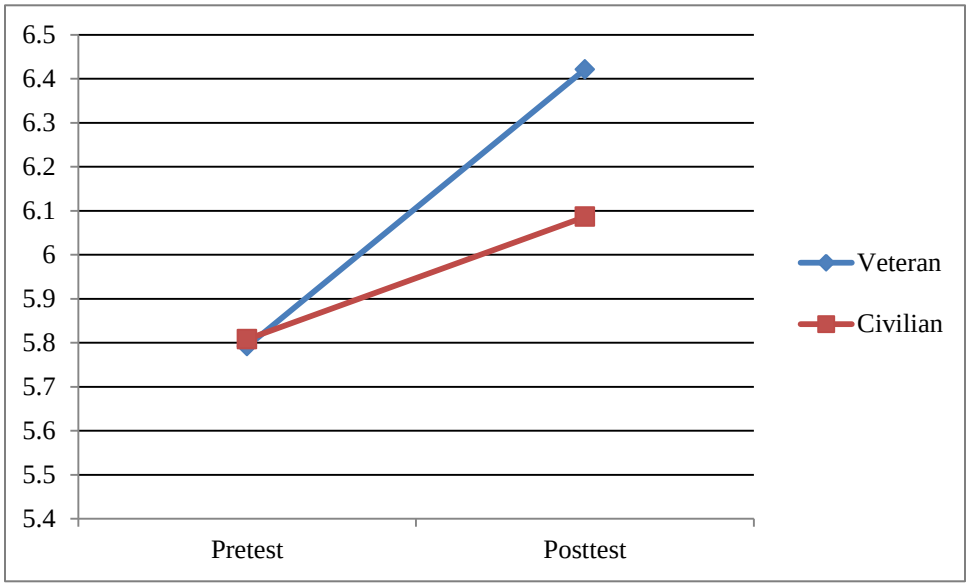
Item	h^2	Mean	SD	SMC
Establishing a new company excites me.	0.76	6.00	1.40	0.87
Searching for new ideas for products/services to offer is enjoyable to me.	0.73	5.92	1.44	0.86
Assembling the right people to work for my business is exciting.	0.70	5.68	1.32	0.84
I am motivated to figure out how to make existing products/services better.	0.74	6.22	1.20	0.83
Scanning the environment for opportunities really excites me.	0.69	5.81	1.49	0.83
Being the founder of a business is an important part of who I am.	0.68	5.37	1.68	0.83
Nurturing and growing companies is an important of who I am.	0.67	5.32	1.66	0.82
Owning my own company energizes me.	0.67	6.02	1.50	0.82
I really like finding the right people to market my products/service to.	0.66	5.70	1.40	0.81
Pushing my employees and myself to make our company better motivates me.	0.65	5.65	1.40	0.80
Nurturing a new business through its emerging success is enjoyable.	0.62	5.69	1.44	0.79
It is exciting to figure out new ways to solve unmet market needs that can be commercialized.	0.62	6.13	1.34	0.79
Inventing new solutions to problems is an important part of who I am.	0.57	5.94	1.31	0.75

Factor Analyses on the Entrepreneurial Passion Measure

Next, correlations among the 13 items from the EP Scale were subjected to a principal axis factor analysis. The Bartlett's test was statistically significant ($p < .000$), indicating that there was sufficient amount of correlation among the items in the population to justify factor analysis. The initial extraction indicated that only one factor had an eigenvalue over 1, which was reaffirmed in scree plot. A further parallel analysis also indicated only the first factor from the raw data had a larger eigenvalue (9.02) than the mean eigenvalue of the first factor from the randomly generated data, suggesting that only one factor be retained. The single factor accounted for 66.85% of the total variance, and the communalities ranged from .624 to .756. All 13 items had sufficiently high factor structure coefficients of .75 or higher, indicating that the single-factor structure was quite reliable. Since this unidimensional structure, however, was contrary to what the authors of the scale delineated, various analyses were again performed. For example, three factors, as the authors of the scale indicated, were intentionally extracted either with an orthogonal or an oblique rotation, from which uninterpretable factor structures resulted. Thus, EP measured by the EP measure using the current sample was considered a unidimensional

construct in this study. Cronbach's alpha coefficient for EP on the pretest was .963, and .946 on the post survey scores. These coefficients indicated that participants were highly consistent in their responses to the 13 items. Means and standard deviations for the 13 items along with factor structure coefficients are reported in Table 2.

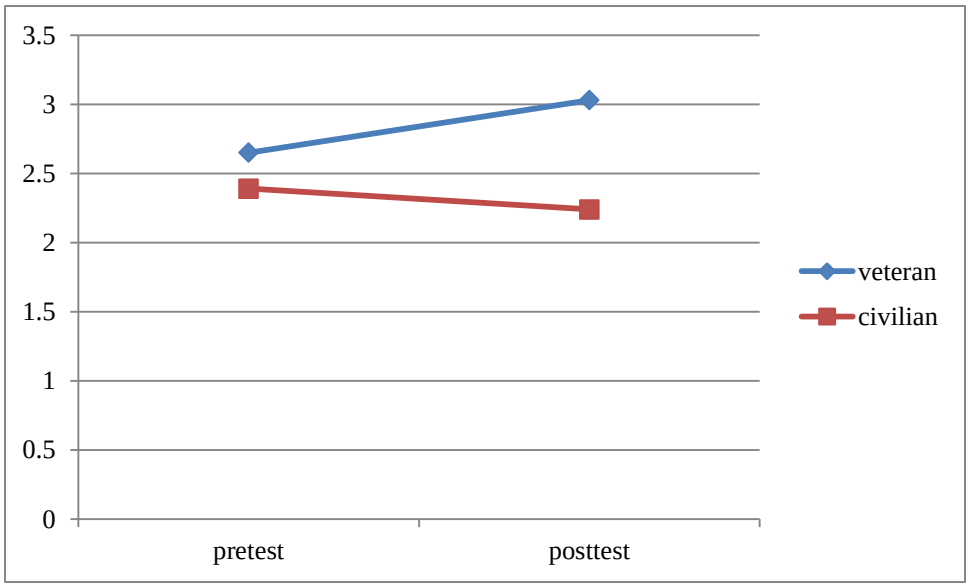
Figure 1
MEAN PRE AND POST SURVEY EP SCORES FOR THE VETERAN AND THE CIVILIAN GROUPS



Effect of Entrepreneurship Training on Entrepreneurial Passion by Group and Test

Another mixed 2 (civilian vs. vet) x 2 (pre vs. post) ANOVA was conducted to answer this question. Again, both Levene's test (p = .74 on pretest passion scores and p =.09 on post survey passion scores) and Mauchly's test (W = 1) results indicated that the major assumptions of homogenous variance and covariance matrices in the population were upheld. The results from the mixed ANOVA indicated that the interaction between the group membership and time of test was not significant. Also the group membership main effect was not statistically significant. The time of test main effect was significant (F = 7.665, p = .008), indicating that both the civilian and veteran groups had significantly higher means on EP scores. The partial eta square of .12 indicated that approximately 12% of the variance in entrepreneurial scores was explained by the time of test with post survey scores showing higher means for both groups. It is important to notice that the veteran group exhibited a higher level of increase in the EP scores (diff = .63, t = 3.27, p = .005) than did the civilian group (diff = .28, t = 1.36, p = .181). As shown in Figure 1, both groups were initially at about the same level in their EP, but the veteran group's level of passion sharply increased later in the program, which likely made a major contribution to the significant difference between the pre and post scores as a combined group.

Figure 2
MEAN PRE AND POST NETWORKING SURVEY LEVELS FOR THE VETERAN AND THE CIVILIAN GROUPS



Effect of Entrepreneurship Education on Level of Networking by Group and Test

Again a mixed 2 (civilian vs. vet) x 2 (pre vs. post survey) ANOVA was conducted to investigate this question. Both Levene's and Mauchly's tests suggested that the major assumptions of homogenous variance and covariance matrices in the population were upheld. For this question, two separate analyses were conducted: one for networking with family and friends, and the other for networking with other entrepreneurs and business associates. The results from the mixed ANOVA for networking with family and friends indicated that the interaction between the group membership and time of test was not significant. Also the time of test main effect was not statistically significant ($F = 6.854$, $p = .011$), indicating that the veteran group had a significantly higher level of networking with family and friends (mean of 2.84) than did the civilian group (mean of 2.31) as shown in Figure 2. Further post-hoc analyses indicated that the significant group difference was due to the difference between civilians and veterans in the post survey networking scores ($t = 3.26$, $p = .002$). The partial eta square of .11 indicated that approximately 11% of the variance in entrepreneurial scores was explained by the group membership. The second analysis for networking with other entrepreneurs and business associates indicated that none of the three effects (interaction and two main effects) was significant. Interestingly, 90% of the civilian program participants actually launched their within 6 months of the program compared to 97% of the military veterans.

DISCUSSION

This research identified attitudinal and behavioral changes and differences in military veterans and civilian participants based on pre and post surveys conducted during a community entrepreneurship training program. All participants began the program with higher than average ESE and both groups did increase their ESE, thus supporting Karlsson and Moberg (2013) study that found entrepreneurial education had a positive influence on ESE.

Results of the EP scores indicate no statistical significance between civilians and military veteran participants on the pre and post survey. In fact, the two groups began the program with nearly identical scores on EP. However, when examining pre versus post survey results, civilians and military veterans' EP scores increased significantly overall and veterans' EP scores rose even higher than civilians'. These results may be attributed to military veterans gaining more information that assists them with their business startup as well as gaining affirmation and motivation from the class via the networking, community integration and mentoring provided. Smaliukienė (2013) argues that while military service provides relevant competencies needed for entrepreneurship, veterans need special entrepreneurial training programs to advance knowledge that is required to successfully operate in a business environment.

In this study, overall, EP scores increased significantly for both civilians and veterans. Our findings do not align with Dalborg and Wincent's (2014) study, whereby passion was mediated by self-efficacy and improving self-efficacy resulted in higher passion. However, taking into consideration our very limited sample size, our research found that the EP construct loaded on one factor as opposed to three factors as suggested by Cardon et al. (2009).

Regarding networking frequencies, the military veterans had statistically significant higher levels of business networking frequency pre and post survey than the civilians. This may be attributed to the opportunities the entrepreneurship training program and the business mentors introduced the military veterans to, as well as the veterans becoming more comfortable with discussing their business startup with family, friends and others. A majority of the military veteran participants noted on their post surveys that the integration with civilians was a tremendous value of the program experience and enhanced their confidence talking about their business with others. Active encouragement from family and friends has been determined as an important factor behind entrepreneurial decisions (Davidsson & Honig, 2003; Parker, Barmby, & Belghitar, 2005). Throughout the program, participants were consistently being introduced to community entrepreneurship support professionals and business networking groups. Specific emphasis and efforts were made to integrate the military veterans into the community entrepreneurial eco-systems.

CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

Overall, the findings from this study suggest that civilian and military veterans have high ESE prior to pursuing entrepreneurship training, indicating that this training does not significantly accelerate this construct. Entrepreneurship training, on the other hand, can positively impact the level of EP veterans experience once they complete the entrepreneurship training. Furthermore, entrepreneurship training positively impacts military veterans' level/frequency of networking activity, which is known as a critical component to successful ventures as well as the military veterans in this study reported launching their businesses at a higher rate than the civilian participants.

Limitations of this study are the small sample size and lack of a validated networking frequency/level scale. The small sample size reduces reliability and increases statistical Type 1 and Type 2 errors, as well as makes generalizability difficult. The lack of a strong validated scale to assess frequency of consultation and networking to categorize potential value as an outcome from each network encounter is a limitation; however, we add to this area by adopting and creating a measure and starting a process of evaluating military veteran entrepreneur participants. Indeed future research is needed to assess the passion scale to determine if the three factor structure is warranted, or whether the items may, as this study suggests, load on one factor.

The results would suggest that entrepreneurial educational training may function differently for participants based on prior work experience. Certainly, networking surfaced as a benefit for the veterans; although further investigation is warranted. Future research investigating how different populations respond to entrepreneurship education and training is needed to influence the curriculum design and implementation of entrepreneurship programs. Also, future research on military veteran startup initiatives as a strategy related to economic development would be valuable.

REFERENCES

Ajzen, I. (1991, December). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Aldrich, H., & Zimmer, C. (1986). Entrepreneurship Through Social Networks. In D. L. Sexton, & R. W. Smilor, *The Art and Science of Entrepreneurship* (pp. 3-24). Cambridge, MA: Ballinger Publishing Company.

Alexander, D., & Shalal, A. (2014, February 24). *Budget cuts to slash U.S. Army to smallest since before World War Two*. (P. Stewart, & G. Crosse, Editors) Retrieved from Reuters: http://www.reuters.com/article/2014/02/24/us-usa-defense-budget-idUSBREA1N1IO20140224

Anderson, A. R. (2013, March 27). *Does Being Passionate About the Work You Do Increase Your Chance of Success?* Retrieved from Forbes: http://www.forbes.com/sites/amyanderson/2013/03/27/does-being-passionate-about-the-work-you-do-increase-your-chance-of-success/

Bandura, A. (1977). Self-efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review, 84*(2), 191-215.

Baron, R. A. (2008, April 1). The Role of Affect in the Entrepreneurial Process. *Academy of Management Review, 33*(2), 328-340.

Berge, L. I. (2011, March 15). *Measuring Spillover Effects from Business Training*. Retrieved from Centre for the Study of African Economies: http://www.csae.ox.ac.uk/conferences/2011-EDiA/papers/530-Berge.pdf

Birley, S. (1985). The Role of Networks in the Entrepreneurial Process. *Journal of Business Venturing, 1*, 107–117.

Bruhn, M., & Zia, B. (2012). *Stimulating Managerial Capital in Emerging Markets: The Impact of Business and Financial Literacy for Young Entrepreneurs.* Washington, DC: The World Bank.

Cardon, M. S., Gregoire, D. A., Stevens, C. E., & Patel, P. C. (2013, May). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing, 28*(3), 373–396.

Cardon, M. S., Wincent, J., Singh, J., & Drnovsek, M. (2009). The Nature and Experience of Entrepreneurial Passion. *Academy of Management Review, 34*(3), 511-532.

Carey, T. A., Flanagan, D. J., & Palmer, T. B. (2010). An Examination of University Student Entrepreneurial Intentions by Type of Venture. *Journal of Developmental Entrepreneurship, 15*(4), 503-517.

Carlson, S. D. (1985). Consistency of attitude components: A new approach for an old problem. *Dissertation Abstracts International, 46*(9B), 3261.

Carter, N. M., Gartner, W. B., Shaver, K. G., & Gatewood, E. J. (2003, January). The career reasons of nascent entrepreneurs. *Journal of Business Venturing, 18*(1), 13-39.

Chen, C. C., Crick, A., & Greene, P. G. (1998, July). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing, 13*(4), 295–316.

Cope, J. (2005). Toward a Dynamic Learning Perspective of Entrepreneurship. *Entrepreneurship Theory and Practice, 29*(4), 373-397.

Cox, L. W., Mueller, S. L., & Moss, S. E. (2002). The Impact of Entrepreneurship Education on Entrepreneurial Self-Efficacy. *International Journal of Entrepreneurship Education, 1*(2), 229-245.

Cumberland, D. M., Meek, W. R., & Germain, R. (2015). Entrepreneurial self-efficacy and firm performance in hostile environments: Evidence from the franchising context. *Journal of Developmental Entrepreneurship, 20*(1).

Dalborg, C., & Wincent, J. (2014). The idea is not enough: The role of self-efficacy in mediating the relationship between pull entrepreneurship and founder passion – a research note . *International Small Business Journal*.

Davidsson, P., & Honig, B. (2003, May). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 18*(3), 301–331.

De Vita, G. (2001). The Use of Group Work in Large and Diverse Business Management Classes: Some Critical Issues. *The International Journal of Management Education, 1*(3), 27-35.

Dearman, D. T., & Bell, J. R. (2012). Context and Person Characteristics Associated with the Decision to Prepare a Business Plan. *Small Business Institute Journal, 8*(1), 1-15.

Dess, G., Lumpkin, G., & Eisner, A. (2008). *Strategic Management: Creating Competitive Advantages.* Boston: McGraw-Hill/Irwin.

DeVellis, R. F. (2011). *Scale Development: Theory and Applications* (3rd ed., Vol. XXVI). Thousand Oaks, CA: SAGE Publications, Inc.

Ede, F. O., Panigrahi, B., & Calcich, S. E. (1998). African American Students' Attitudes Toward Entrepreneurship Education. *The Journal of Education for Business, 73*(5), 291-296.

Elfring, T., & Hulsink, W. (2007). Networking by Entrepreneurs: Patterns of Tie Formation in Emerging Organizations. *Organization Studies, 28*(12), 1849-1872.

Ewing Marion Kauffman Foundation. (2013). *Entrepreneurship Education Comes of Age on Campus.* Retrieved from Ewing Marion Kauffman Foundation: http://www.kauffman.org/~/media/kauffman_org/research%20reports%20and%20covers/2013/08/eshipedcomesofage_report.pdf

Fairlie, R. W. (2012). *Kauffman Index of Entrepreneurial Activity1996-2011.* Retrieved from Ewing Marion Kauffman Foundation: http://www.kauffman.org/~/media/kauffman_org/research%20reports%20and%20covers/2012/03/kiea_2012_report.pdf

Garamone, J. (2014, March 20). *Veterans Unemployment Rate Dropped in 2013*. Retrieved from U.S. Department of Defense: http://www.defense.gov/News/NewsArticle.aspx?ID=121873

Gatewood, E. J., Shaver, K. G., Powers, J. B., & Gartner, W. B. (2002, December). Entrepreneurial Expectancy, Task Effort, and Performance. *Entrepreneurship Theory and Practice, 27*(2), 187–206.

Gibson, S. G., Harris, M. L., Walker, P. D., & McDowell, W. C. (2014). Investigating the Entrepreneurial Attitudes of African Americans: A Study of Young Adults. *The Journal of Applied Management and Entrepreneurship, 19*(2), 107.

Granovetter, M. S. (1973, May). The Strength of Weak Ties. *American Journal of Sociology, 78*(6), 1360-1380.

Greve, A., & Salaff, J. W. (2003). Social Networks and Entrepreneurship. *Entrepreneurship Theory & Practice, 28*(1), 1-22.

Hansemark, O. C. (2003, June). Need for achievement, locus of control and the prediction of business start-ups: A longitudinal study. *Journal of Economic Psychology, 24*(3), 301–319.

Harris, M. L., Gibson, S. G., & Taylor, S. R. (2008). Examing the Impact of Small Business Institute Participation on Entrepreneurial Attitudes. *Journal of Small Business Strategy, 18*(2), 57-75.

Hatten, T. S., & Ruhland, S. K. (1995). Student Attitude toward Entrepreneurship as Affected by Participation in an SBI Program. *Journal of Education for Business, 70*(4), 224-227.

Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: can entrepreneurship be taught? Part II. *Education + Training, 47*(3), 158-169.

Henson, R. K. (2001, October). Understanding Internal Consistency Reliability Estimates: A Conceptual Primer on Coefficient Alpha. *Measurement & Evaluation in Counseling & Development, 34*(3), 177-189.

Hoang, H., & Gimeno, J. (2010, January). Becoming a founder: How founder role identity affects entrepreneurial transitions and persistence in founding . *Journal of Business Venturing, 25*(1), 41–53.

Hope, J. B., Oh, B., & Mackin, P. C. (2011). *Factors Affecting Entrepreneurship among Veterans.* Small Business Administration, Office of Advocacy, Washington, DC.

Jack, S. L. (2005, September). The Role, Use and Activation of Strong and Weak Network Ties: A Qualitative Analysis*. *Journal of Management Studies, 42*(6), 1233–1259.

Judge, T. A., & Bono, J. E. (2001). Relationship of Core Self-Evaluations Traits—Self-Esteem, Generalized Self-Efficacy, Locus of Control, and Emotional Stability—With Job Satisfaction and Job Performance: A Meta-Analysis. *Journal of Applied Psychology, 86*(1), 80-92.

Karlan, D., & Valdivia, M. (2011, May). Teaching Entrepreneurship: Impact of Business Training on Microfinance Clients and Institutions. *The Review of Economics and Statistics, 93*(2), 510-527.

Karlsson, T., & Moberg, K. (2013, March). Improving perceived entrepreneurial abilities through education: Exploratory testing of an entrepreneurial self efficacy scale in a pre-post setting. *The International Journal of Management Education, 11*(1), 1-11.

Katz, J. A. (2008, October). Fully Mature but Not Fully Legitimate: A Different Perspective on the State of Entrepreneurship Education*. *Journal of Small Business Management, 46*(4), 550–566.

Katz, J., & Gartner, W. B. (1988, July). Properties of Emerging Organizations. *The Academy of Management Review, 13*(3), 429-441.

Klinger, B., & Schündeln, M. (2011, September). Can Entrepreneurial Activity be Taught? Quasi-Experimental Evidence from Central America. *World Development, 39*(9), 1592–1610.

Kuratko, D. F., & Hodgetts, R. M. (2004). *Entrepreneurship: Theory, Process, and Practice.* Mason, OH: Thomson/South-Western.

Liao, J., & Welsch, H. (2003). Social capital and entrepreneurial growth aspiration: a comparison of technology- and non-technology-based nascent entrepreneurs. *The Journal of High Technology Management Research, 14*(1), 149–170.

Mano, Y., Iddrisu, A., Yoshino, Y., & Sonobe, T. (2012, March). How Can Micro and Small Enterprises in Sub-Saharan Africa Become More Productive? The Impacts of Experimental Basic Managerial Training. *World Development, 40*(3), 458–468.

McDonald, M. L., & Westphal, J. D. (2003, March). Getting by with the Advice of Their Friends: CEOs' Advice Networks and Firms' Strategic Responses to Poor Performance. *Administrative Science Quarterly, 48*(1), 1-32.

McKenzie, D., & Woodruff, C. (2012, September). *What are we Learning from Business Training and Entrepreneurship Evaluations around the Developing World? (Working Paper No. 6202).* Retrieved from The World Bank: http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-6202

Mitra, J., & Matlay, H. (2004). Entrepreneurial and Vocational Education and Training: Lessons from Eastern and Central Europe. *Industry and Higher Education, 18*(1), 53-61.

Murnieks, C. Y., Mosakowski, E., & Cardon, M. S. (2014, September). Pathways of Passion: Identity Centrality, Passion, and Behavior Among Entrepreneurs. *Journal of Management, 40*(6), 1583–1606.

Nazar, J. (2013, September 9). *16 Surprising Statistics About Small Businesses*. Retrieved from Forbes: http://www.forbes.com/sites/jasonnazar/2013/09/09/16-surprising-statistics-about-small-businesses/

Parker, S. C., Barmby, T., & Belghitar, Y. (2005, March). Wage uncertainty and the labour supply of self-employed workers. *The Economic Journal, 115*(502), C190–C207.

Patzelt, H., Williams, T. A., & Shepherd, D. A. (2014, December). Overcoming the Walls That Constrain Us: The Role of Entrepreneurship Education Programs in Prison. *Academy of Management Learning & Education, 13*(4), 587-620.

Pofeldt, E. (2013, May 27). *U.S. Entrepreneurship Hits Record High*. Retrieved from Forbes: http://www.forbes.com/sites/elainepofeldt/2013/05/27/u-s-entrepreneurship-hits-record-high/

Robinson, P. B., Huefner, J. C., & Hunt, H. K. (1991, April). Entrepreneurial Research on Student Subjects Does Not Generalize to Real World Entrepreneurs. *Journal of Small Business Management, 29*(2), 42.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and Quasi-Experimental Designs for Generalized Causal Inference* . Boston, MA: Houghton Mifflin.

Shane, S., & Cable, D. (2002). Network Ties, Reputation, and the Financing of New Ventures. *Management Science, 48*(3), 364 - 381.

Solomon, G. T., Duffy, S., & Tarabishy, A. (2002). The State of Entrepreneurship Education in the United States: a Nationwide Survey and Analysis. *International Journal of Entrepreneurship Education, 1*(1), 1-22.

Sonobe, T., & Otsuka, K. (2011). *Cluster-Based Industrial Development: A Comparative Study of Asia and Africa* . New York, NY: Palgrave MacMillan.

Spence, L. J., Schmidpeter, R., & Habisch, A. (2003, September). Assessing Social Capital: Small and Medium Sized Enterprises in Germany and the U.K. *Journal of Business Ethics, 47*(1), 17-29.

Stajkovic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin, 124*(2), 240-261.

Stevens, J. P. (2009). *Applied Multivariate Statistics for the Social Sciences.* New York, NY: Routledge.

Sundararajan, M., & Peters, L. (2007). *Role of emotions in the entrepreneur's opportunity recognition process.* Paper presented at the Academy of Management Conference, Philadelphia, PA.

Thompson, J. L. (2004). The facets of the entrepreneur: identifying entrepreneurial potential. *Management Decision, 42*(2), 243-258.

Thorgren, S., & Wincent, J. (2013). Passion and habitual entrepreneurship. *International Small Business Journal*.

US Small Business Administration, Office of Advocacy. (2012, September). *Frequently Asked Questions*. Retrieved from US Small Business Administration, Office of Advocacy: https://www.sba.gov/sites/default/files/FAQ_Sept_2012.pdf

Watson, J. (2007). Modeling the relationship between networking and firm performance. *Journal of Business Venturing, 22*(6), 852-74.

Wilson, F., Kickul, J., Marlino, D., Barbosa, S. D., & Griffiths, M. D. (2009). An Analysis of the Role of Gender and Self-Efficacy in Developing Female Entrepreneurial Interest and Behavior. *Journal of Developmental Entrepreneurship, 14*(2), 105-119.

Wood, R., & Bandura, A. (1989, July). Social Cognitive Theory of Organizational Management. *Academy of Management Review, 14*(3), 361-384.

Zhao, H., Hills, G., & Seibert, S. E. (2005). The Mediating Role of Self-Efficacy in the Development of Entrepreneurial Intentions. *Journal of Applied Psychology, 90*(6), 1265-1272.

Zimmerer, T., & Scarborough, N. (1998). *Essentials of Entrepreneurship and Small Business Management* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

ENTREPRENEURIAL CHARACTERISTICS AS A MEDIATION OF ENTREPRENEURIAL EDUCATION INFLUENCE ON ENTREPRENEURIAL INTENTION

Anik Kusmintarti, State Polytechnic of Malang
Armanu Thoyib, Brawijaya University
Ghozali Maskie, Brawijaya University
Khusnul Ashar, Brawijaya University

ABSTRACT

Current curriculum in universities encourages the provision of entrepreneurial education, and this has been implemented well in Indonesia. However, studies regarding the development of students' entrepreneural characterictics after attending the education and their intention to build new businesses in real life need to be conducted. This study was aimed to analyze the role ofentrepreneurial characteristics as a mediation of entrepreneurial education influence on entrepreneurial intention.

Population of the study was all students of the State Polytechnic of Malang and Brawijaya University of Malang who had been undergoing enterpreurship education. Judgment sampling technique was used. Data collection method was questionnaires, and there were 206 data analyzed. Data were analyzed using descriptive statistics and path analysis.

Results of the study show that students who attended entrepreneurial education tended to posses entrepreneurial characteristics and to establish new business in the future.

INTRODUCTION

The tendency of college graduates to be job seekers rather than job creators and the limited number of job vacancies result in educated unemployment. Government continuously seeks ways to create a variety of programs to endorse the development of university graduates' entrepreneurial capacity. Entrepreneurial education is considered as one of the important factors used to foster and develop the passion, spirit and entrepreneurial behavior among the young generation (Kourilsky and Walstad, 1998).

In 2009 the Directorate General of Higher Education of Indonesia developed a program named 'Student Entrepreneurial Program'. The program was a part of education strategies in universities, intended to facilitate students who have an interest in entrepreneurship and start a business on the basis of science, technology and art (Directorate General of Higher Education, Ministry of National Education, 2010). In this sense, universities must internalize entrepreneurship to students by using effective educational strategies.

Brawijaya University and State Polytechnic of Malang, like other public universities in Malang, support and implement the Student Entrepreneurial Program. Students of both universities have received entrepreneurial education, in the form of entrepreneurship courses, entrepreneurship seminars, entrepreneurship training, exhibitions, and other entrepreneurship activities. In general, entrepreneurial education aims to develop students' awareness that the entrepreneurship profession is one of the career alternatives.

Bird's(1988) concept modified by Mazzarol, et al. (1999) explains that entrepreneurial intention is determined by environmental factors and personality factors. Environmental factors include: social, political, economic and infrastructure development, and entrepreneurial education is one form of infrastructure development.

Entrepreneurial education is defined as the activities of teaching and learning about entrepreneurship which includes the development of knowledge, skills, attitudes and personal qualities in accordance with the age and development of the students (European Commission, 2003 in Liñán, Moriano and Zarnowska, 2008). Several previous studies showed that students' entrepreneurial characteristics increased after participating in entrepreneurial education, such as entrepreneurship training and being engaged in business class (Rasheed, 2003; Bonnett and Furnham, 1991;Chen, Weng and Hsu (2010).

Entrepreneurial characteristics are a number of characters that mark a person to be referred as an entrepreneur (Gartner, 1989). There have been a lot of studies examining the entrepreneurial characteristics, yet there is no consensus among researchers about the entrepreneur characters (Rasheed, 2003). This study examines some of the characters that have been studied by several previous researchers, namely: internal locus of control (Rasheed, 2003; Othman and Ishak, 2009; Bonnett and Furnham, 1991; Luthje and Franke, 2003; Birdthistle, 2008), need for achievement (Rasheed, 2003; Othman and Ishak,2009; Bonnett and Furnham, 1991; Yusof, Sandhu and Jain, 2007; Taormina and Lao, 2007; Indarti and Rostiani, 2008; Hatten and Ruhland, 1995), risk taking (Sexton and Bowman, 1985; Luthje and Franke, 2003; Yusof, et al., 2007; Josien, 2012), creativity (Birdthistle, 2008), social networking (Taormina and Lao, 2007; Chen, Weng and Hsu, 2010) and tolerance for ambiguity (Yusof, et al., 2007).

Someone who has entrepreneurial characteristics tends to favor entrepreneurial activities. Entrepreneurial intention is a cognitive representation of the actions to be implemented by individuals to either new independent ventures or to create new value within existing companies (Fini, Grimaldi, Marzocci and Sobrera, 2009). This study defines the entrepreneurial intention as cognitive representation of the actions that will be implemented by a individuals to set up a new business. Indarti and Rostiani (2008) examined the entrepreneurial intention of students to carry out a comparative study between Indonesia, Japan and Norway. Results of this study indicated that (1) the level of entrepreneurial intention Indonesian students was significantly higher than students of Japan and Norway, (2) the level of need for achievement, self-efficacy and readiness instrument of Indonesian students was significantly higher than that of Japaneseand Norway students and (3) personality, instrument and demography determined entrepreneurial intention. Then, Birdthistle (2008) stated that the majority of students who had a locus of control character admitted the importance of independence which include leisure time, creativity, solution orientation, and safety orientation for career desire as an entrepeneur.

With above mentioned background, this current study examined whether entrepreneurial characteristics as mediator the influence of entrepreneurial education on entrepreneurial intention.

LITERATURE REVIEW

Entrepeneurial Education

Entrepreneurship is a discipline that, like other disciplines, can be learned (Drucker, 1985). Along with the emergence of entrepreneurship as a discipline, entrepreneurship education has received attention from a number of researchers and achieved significant growth world wide.

A number of entrepreneurial education programs have been implemented, ranging from elementary school, middle to high school.

Different ideas have been proposed by researchers regarding entrepreneurial talent: Morris's conceptual framework assumes that entrepreneurial talent is given. On the other hand, Drucker (1985) argue that entrepreneurship can be taught through entrepreneurship education. Kruegar and Brazeal (1994) suggested that entrepreneurial education based on solid learning theory can produce entrepreneurs by increasing business knowledge and developing entrepreneurial characteristics. Then, Gorman, Hanlon and King (1997) stated that entrepreneurial traits can be positively influenced by educational programs. Thus, it is assumed that characteristics and entrepreneurial skills can be developed through entrepreneurship education (Rasheed, 2003).

The European Commission defines entrepreneurial education as activities of teaching and learning about entrepreneurship that involve development of knowledge, skills, attitude and personal qualities appropriate to the age and development of the pupils or students (Liñán, et al.(2008). This research examined entrepreneurial education given in college, both in the form of entrepreneurship courses and programs related to entrepreneurship. Then, entrepreneurial education was defined as the activities of teaching and learning about entrepreneurship which included the development of knowledge, skills, attitudes, and personal qualities.

Chou stated that the purpose of entrepreneurial education is to create entrepreneurs in the future and to develop students' entrepreneurial spirit, which would encourage them to develop a business, corporation, or other forms of trading (Chen, et al., 2010). Furthermore, Arasti, Falavarjani and Imanipour (2012) claim that entrepreneurial education aims to raise awareness of entrepreneurship as a career option and to increase understanding of the process of the establishment and management of new business ventures.

Several researchers examining the relationship between entrepreneurial education and entrepreneurial characteristics stated that personal characteristics associated with entrepreneurs can be developed through entrepreneurial education. Rasheed (2003) suggested that students who take entrepreneurship training and engage in business activities have a higher value of entrepreneurial characteristics. Furthermore, Hatten and Ruhland (1995) found that students who participated in the Small Business Institute program had higher internal locus of control character than students who did not participate in the Small Business Institute. Chen, *et al.* (2010) found significant differences between the two groups, the entrepreneurial models rated higher overall on CEAS constructs than the institute students. Meanwhile, Galloway, Brown, Anderson and Wilson(2006) suggested that both students studying entrepreneurship and students taking entrepreneurial programs had a great possibility of becoming entrepreneurs. Then, Lorz (2011) stated that entrepreneurial education could be a source of inspiration triggering the increase of entrepreneurial intention.

Entrepreneurial Characteristics

Entrepreneurial characteristics are a number of inherent nature or characters of an entity known as entrepreneurs (Gartner, 1989; Basu and Altinay, 2002). Researchers have devoted much time and effort to get an idea of the personality of an entrepreneur, yet there has been no agreement on permanent characters of entrepeneurs. Rasheed (2003) proposed a number of psychological attributes have been suggested as predictors of entrepreneurial behavior in the entrepreneurship literature, with some degree of consensus.

Likewise, authors of entrepreneurship literatures claimed some entrepreneurial characters. Rye mentions several entrepreneurial characters such as: high achievers, risk takers, problem solvers, status seekers, high energy levels, self-confidence, avoiding emotional bond and requiring personal satisfaction (Sunarya, et al, 2011). Then, Zimmerer, et al. (2008) mention a number of entrepreneurial characters such as: Desire for responsibility, preference for moderate risk, Confidence in their ability to succeed, Desire for immediate feedback, High level of energy, Future orientation, value of achievement over money, the degree of commitment, Tolerance for ambiguity, Flexibility, Tenacity.

This current study examines entrepreneurial characteristics that include the characters: an internal locus of control, need for achievement, risk taking propensity, creativity, social networking, tolerance for ambiguity. A description of the entrepreneurial characteristics used in this study is as follows:

Internal Locus of Control

A person tends to be an internal locus of control if he believes that his actions affect one's success and tend to be external locus of control if he believes that fate, luck or other external influences determine success and failure. Rotter (1966) in Lefton (1985) and Rasheed (2003) stated that a person who tends to be an internal locus of control believes the extent to which personal actions affect the outcome of an event. Then, Kobia and Sikalieh (2010) argued that an individual with a belief in an internal locus of control perceives that the outcome of an event is contingent on his own behavior or his own relatively permanent characteristics. Internal locus of control is a character that is often mentioned as one of the entrepreneurial characteristics.

The Need for Achievement

The power of someone’s attention to gain achievement is called the value of need for achievement. The need for achievement is a character that is based on the expectations to do something better or faster than others or better than their own achievements or previous others’ achievements (McClelland, 1961). He further said that the need for achievement develops through childhood influences, especially education that stresses self - reliance (self-confidence). Greenberg and Baron (2008) defined the need for achievement as the strength of one's desire to be the best or to succeed at various tasks and perform these tasks better than others.

Risk Taking Propensity

In general, entrepreneurship researchers stated that entrepreneurship is associated with certain risk taking because entrepreneurial activities are associated with decision-making under uncertain conditions. Sexton and Bowman (1985) stated that the risk-taking propensity can be conceptualized as one's orientation toward taking chances in a decision-making situation. Risk-taking propensity is a trait that distinguishes the founder of the business and not the business founders (Begley, 1995). Kuip and Verheul (2003) stated risk taking refers to the acceptance of risk in undertaking a certain activity, ie, the probability that an activity is successful is less than 100 percent. Zimmerer, et al. (2008) suggest that entrepreneurs are not the people who take risks blindly, but people who take calculated risks.

Other researchers, Carland, Carland, Carland and Pearce (1995) stated that entrepreneur is driven by the goal of profit and growth, not showing any tendency of willing to bear higher

risk than managers do. However, the manager displays risk-taking propensity higher than a family-oriented business owner. Luthje and Franke (2003) stated that students who are willing to take risks and feel able to control the events in their lives have more respect for the establishment of their own businesses.

Thus, someone who is willing to risk tend not to be afraid to face or bear the risk, but not a too low or too high risk taker.

Creativity

Psychologist Keith Simonton said: "You can not be creative unless you come up with something that has not been done before." Creativity is the process of developing original, novel, and yet appropriate responses to a problem. An original response is one that is not usually given. A novel response is one that is new or that has no precedent (Lefton, 1985). Creativity is the ability to develop new ideas and find new ways to look at problems and opportunities (Zimmerer, et al., 2008). Creativity is more associated with the development of new methods rather than the use of standard procedures (Raposo, Paco and Ferreira, 2008).

Creativity is important for a person who chose the profession of entrepreneurship (Birdthistle, 2008). Then, Simon (2011) claims that there is a statistically significant positive relationship between creativity and entrepreneurial intention. Entrepreneur should be creative, without creativity one's will not be a true entrepreneur, but just as an ordinary merchant (Agus Bastian in Wibowo, 2011). Thus, creativity is an important character for someone who is chosing an entrepreneurial career. Someone who is creative has the ability to develop new ideas and new ways to look at problems and opportunities.

Social Networking

Social networking is about the ability to manage relationships and encourages success (Chen, et al., 2010). Social networking, which is tendency to connect and interact with other people, is a social behavior but is also, may be viewed as a psychological or personality variable because Maslow (1970) identified the desire for social interaction as an essential psychological need (Taormina and Lao, 2007).

Social networking is useful in entrepreneurial process, to obtain information and advice. Someone who appreciates social networking will facilitate his efforts in starting a business (Taormina and Lao, 2007). Students who are involved in entrepreneurial model have a high social networking value (Chen, et al., 2010). Social networking also plays an important role in developing entrepreneurial intention (Zafar Yasin and Ijaz, 2012). Accordingly, a person who owns social networking character tends to establish and maintain social relationships to ask for help or advice as well as to support his success.

Tolerance for Ambiguity

Ambiguity tolerance is a personality characteristic that influences the manner in which one organizes information about ambiguous situations (Sexton and Bowman, 1985; Zimmerer, et al., 2008). Tolerance for ambiguity is seen as a continuum. In extreme conditions, ambiguity is perceived as undesirable, stressful and threatening. Under conditions of uncertainty, decision-makers face unwanted ambiguous conditions, trying to solve problems using environmental

information that is not adequate. In other conditions, tolerance for ambiguity is seen as a desirable and challenging goal (Sexton and Bowman, 1985).

One of the characteristics of people who are tolerant to ambiguity is trying to find more information to eliminate or reduce uncertainty (Zarei, Zainalipour and Shahraki, 2013). Thus, a person who has the character of tolerance for ambiguity tends to seek as much information as possible first, and then manages the information as a basis for decision making. In this sense, decision making is based on the available and clear information. He tries to adjust to the ambiguous situation.

Entrepreneurial Intention

Intention are indications of how hard people are willing to try, of how much of an effort they are planning to exert , in order to perform the behavior (Ajzen, 1991). Intentions as a behavioral disposition until, at the appropriate time and opportunity, an attempt is made to translate the intention into action (Ajzen, 2005). Thus, intentions can be interpreted as an indication of how strong one's willingness to try to do something and how much the effort heattempts to perform a certain behavior, until a certain time and chance when the action is performed.

Entrepreneurial intention are aimed at either creating a new venture or creating new values in existing ventures (Bird, 1988). In line with that view, Fini, et al. (2009) suggested that entrepreneurial intention as a cognitive representation of the actions to be implemented a by individuals to either establish a new independent ventures or to create new value within existing companies. This study defined entrepreneurial intention as a cognitive overview of the actions would be undertaken by a person to set up a new business.

Entrepreneurial ideas begin with the inspiration and intention needed to put these ideas into reality (Delmar and Shane, 2003). Some individuals can be in a rush establishing a company at the same time; yet researchers need understand how entrepreneurial intentions are formed (Drnovsek and Erikson, 2005). Someone who has the entrepreneurial intention is better prepared to carry out entrepreneurial activities; he also has the motivation to develop the business. Therefore, it is important to identify factors determining entrepreneurial intention.

A number of factors are considered as determinants of entrepreneurial intention. Bird (1988) suggested that personal and environmental factors determine entrepreneurial intention. Indarti and Rostiani (2008) stated several determinants of entrepreneurial intention, namely: (1) personality factors which include the need for achievement and self-efficacy, (2) environmental factors consisting of three contextual elements, namely access to capital, information and social networking, (3) demographic factors including gender, age, educational background, and work experience.

METHODOLOGY

The samples of this study were all students of the State Polytechnic of Malang and Brawijaya University of Malang who had been undergoing enterpreurship education. Judgment sampling technique was used. Data collection method was questionnaires and responses were put in 5-level likert scale with 1 represents strongly disagree, 2 for disagree, 3 for moderately agree, 4 foragree, and 5 for strongly agree. The number of data analyzed was 206. Data were analyzed using descriptive statistics and path analysis. Data were processed using SPSS and GeSCA software.

RESULTS

Analysis to all indicators of research variables showed that all indicators contributed to each variable (Table 1, Table 2, and Table 3). Regarding the variable of entrepreneurial education, results of the analysis showed that respondents agreed that the entrepreneurial programs offered in universities improved students' knowledge of business opportunity. Business practices were also reported to be able to improve students' skills in managing businesses.

Table 1
LOADING SCORES AND AVERAGE OF VARIABLE INDICATORS

Indicators	Loading			Average
	ESTIMATE	SE	CR	
Entrepreneurial Education				
• Increase on the need forachievement	0.786	0.035	22.73*	3,767
• Improvement on internal locus of control	0.816	0.027	30.7*	3,791
• Improvement on knowledge of business plan	0.788	0.047	16.82*	3,976
• Improvement on knowledge of business opportunities	0.823	0.026	32.21*	4
• Improvement on skills in managing business	0,739	0,061	12,19*	4,077
Entrepreneurial Characteristics				
Dimensions of Internal Locus of Control				
• Hard work to achieve expectation	0.772	0.050	15.56*	4,524
• Hard work to achieve success in life	0.744	0.058	12.85*	4,335
• Belief that not hard work can cause failure in life	0.595	0.088	6.74*	3,748
• Hard work to gain achievement	0.615	0.062	9.96*	3,927
Dimensions of need for achievement				
• Motivation to gain highachievement at present	0.717	0.059	12.2*	4,529
• Motivation to gain achievement in the future	0.812	0.049	16.51*	4,626
• Motivation to accomplish tasks	0.736	0.042	17.51*	4,126
• Motivation to gain achievement higher than others	0.712	0.044	16.28*	4,010
Dimensions of Risk taking Propensity				
• Calculating the advantages and the disadvantages in the decision making	0.690	0.056	12.41*	4.058
• Willing to take the risks as the result of the decision he/she has made	0.834	0.035	23.81*	4.068
• Willing to take the risk as the result of what he/she did	0.866	0.020	42.57*	4.087
• Willing to take risks based on the degree ofthe achievement	0.629	0.068	9.29*	4.087

Table 1 (continued)
LOADING SCORES AND AVERAGE OF VARIABLE INDICATORS (CONTINUED)

Indicators	Loading			Average
	ESTIMATE	SE	CR	
Dimension of Creativity				
• Developing other ways	0.670	0.056	12.02*	3,995
• Developing different views	0.733	0.043	17.03*	4,005
• Developing new ideas	0.773	0.043	17.92*	3,840
• Developing alternatives to solve problems	0.764	0.037	20.58*	3,961
• Developing activities	0.613	0.062	9.93*	3,961
Dimension of social networking				
• The ability to establish social networking	0.782	0.041	18.96*	4,364
• The ability to make friends	0.637	0.059	10.84*	3,699
• The ability to ask for help and suggestions	0.674	0.055	12.19*	3,874
• Maintaining social networking	0.817	0.036	22.65*	4,252
Dimension of Tolerance for Ambiguity				
• Adjustment to unexpected events	0.603	0.069	8.73*	3,534
• Considering new information	0.798	0.029	27.99*	3,912
• Awareness of the possibility of activities conducted different from the plan	0.685	0.071	9.69*	3,869
• Collection and analysis of information	0.696	0.060	11.69*	4,078
Entrepreuneurial Intension				
1. Intention to establish business after graduation	0.740	0.053	14.0*	3,966
2. Intention to open business in the future	0.872	0.022	40.38*	4,306
3. Intention to realize business ideas	0.875	0.026	34.21*	4,053
4. Intention to open business after collecting capital	0.151	0.154	0.98	4,063
5. Intention to open business based on social relationship	0.535	0.082	6.49*	4,403

The variable of entrepreneurial characteristics was the second order having six dimensions. The weight estimate and the average score of second order variables of entrepreneurial characteristics are presented in Table 2. As seen on the table, each score of CR for each dimension is above 2. This may show that internal locus of control, need for achievement, risk taking propensity, creativity, social networking, and tolerance for ambiguity significantly contributed to support entrepreneurial characteristics with the significant level of 0.05.

Table 2
LOADING 2ND- ORDER AND AVERAGE OF ENTREPRENERIAL CHARACTERISTICS

2nd-order Variable	Weight			Average
	Estimate	SE	CR	
Entrepreneurial Characteristics				
• Internal Locus of Control	0,170	0,021	8,018	4,134
• Need for achivement	0,242	0,024	10,241	4,323
• Risk taking Propensity	0,210	0,022	9,403	4,075
• Creativity	0,269	0,035	7,608	3,961
• Social networking	0,237	0,023	10,309	4,047
• Tolerance for ambiguity	0,216	0,027	8,060	3,848

Creativity contributed the highest in supporting the variable of entrepreneurial characteristics at 0.269. This was followed by need for achievement, social networking, tolerance for ambiguity, risk taking propensity, and internal locus of control. However, the average score on creativity and tolerance to ambiguity were below 4, confirming the need to provide students with entrepreneurial learning model conditioning the importance of creativity characteristics and tolerance for ambiguity in order to improve Students' creativity and tolerance for ambiguity characteristics

As presented in Table 2 regarding the average scores for each indicator of entrepreneurial characteristics dimension, several points are discussed below:

- Internal Locus of Control
  Majority of the respondents were with the characteristics of internal locus of control, showing their tendency to believe that hard work is needed to realize wishes and that continuous hard work is compulsory for success in life.
- Need for Achievement
  Majority of the respondents had the characteristics of having need for achievement reflected in their tendency in expecting to have higher achievement than before or higher achievement than that achieved by others. They also motivated themselves to accomplish tasks better and faster than before.
- Risk Taking Propensity
  Majority of the respondents had the characteristics of risk taking propensity reflected in their tendency to consider advantages and disadvantages prior to making decisions, tendency to be willing to take risks as consequences of decisions taken, and tendency to be convinced that the higher the achievement the higher the risks have to be taken.
- Creativity
  Majority of respondents had the creativity characteristics reflected in their tendency to try to look at problems from different point of views.
- Social Networking
  Majority of the respondents had social networking characteristics reflected in their tendency to assume that building social networks support success and that maintaining social networks is prominent to obtain information.

- Tolerance for Ambiguity
  Majority of the respondents had the characteristics of tolerance of ambiguity reflected in their tendency to take all information before managing the information as the base of decision making.

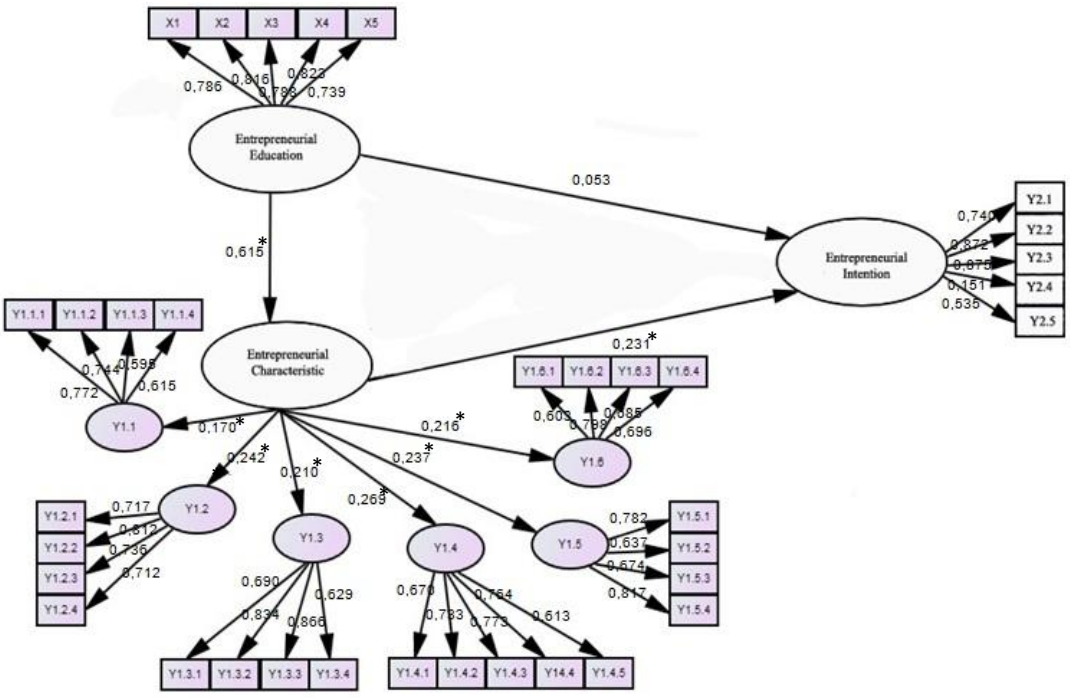
Test on indicators showed that majority of the respondents tended to realize their business idea into a new business in the future after owning adequate capital. Besides, they also tended to be convinced that building social networks would ease the establishment of a new business.

Path analysis on the entrepreneurial characteristics as the mediating influence of entrepreneurial education on entrepreneurial intention proved: that entrepreneurial education significantly effect on entrepreneurial characteristics with a coefficient of 0.615, and that entrepreneurial characteristics significantly effect on entrepreneurial intention with a coefficient of 0.231. However, path analysis showed that entrepreneurial education did not significantly affect on entrepreneurial intention with a coefficient of 0.053 (Table 3 and Figure 1). Thus, entrepreneurial characteristics can be expressed as a full mediation to the influence of entrepreneurial education on entrepreneurial intention.

Table 3
RESULTS OF PATH ANALYSIS

Independent Variables	Dependent Variables	Path Coefficient	Critical Ratio	Notes
Entrepreneurial Education	Entrepreneurial Characteristics	0.615	10.49*	Significant
Entrepreneurial Education	Entrepreneurial Intention	0.053	0.7	Not Significant
Entrepreneurial Characteristics	Entrepreneurial Intention	0.231	2.54*	Significant

Figure1
DIAGRAM OF THE PATH ANALYSIS



Note: * = significant level

DISCUSSION

As presented in the findings, entrepreneurial education significantly effected on entrepreneurial characteristics, entrepreneurial characteristics significantly effected on entrepreneurial intentions, and entrepreneurial education did not significantly effected on entrepreneurial intentions (Table 3 and Figure 1). Thus, entrepreneurial characteristics act as full mediation of the influence of entrepreneurial education on entrepreneurial intention.

The results suggest the influence of entrepreneurial education on entrepreneurial intention, and this is fully under the influence of entrepreneurial characteristics. This means that students' entrepreneurial intention improve when entrepreneurial education, in the form of entrepreneurship training and involvement in the business class, improves students' entrepreneurial characteristics such as internal locus of control, need for achievement, risk taking propensity, creativity, social networking and tolerance for ambiguity. Therefore, students who take entrepreneurship training and are actively involved in business training tend to believe that hard work enables them to achieve a desire and success in life; they also tend to accomplish work better and faster than before as well as expect that current and future achievements and accomplishments are better than previous achievements and accomplishments. These students also tend to take a decision after considering the advantages and disadvantages very well and are willing to bear the risk for decisions made and actions taken in accordance with the desired achievement, tend to be able to see problems from different points of view, tend to establish

social networking to support success and maintain social networking to gain information, and tend to manage information in decision making. Furthermore, students intend to realize their business idea into a new business in the future after raising capital and rely on social networking possessed.

Findings of the study suggest that entrepreneurial education has a significant effect on the entrepreneurial characteristics, supporting previous studies. Bonnett and Furnham (1991) argued that entrepreneurial education increased the characteristics of internal locus of control; Rasheed (2003) suggested that entrepreneurial education improved the need for achievement and Chen, *et al.* (2010) concluded that the students of the College of Humanities and Applied Life Science showed the highest average score for each construct of CEAS (Chinese Entrepreneur Aptitude Scale), because these students had more experience in developing a range of technical skills and training skills.

Findings of the study showed that the entrepreneurial characteristics significantly influence entrepreneurial intention. This result corresponds to Bird'sconcept (1988) modified by Mazzarol, et al. (1999) that entrepreneurial intention is determined by environmental factors and personality factors, with personal characteristics as the part of the personality factors. The findings are also in line with previous studies. McClelland (1961) suggested that the need for achievement would encourage people to look for entrepreneurial work, while Sexton and Bowman (1985) suggested that high tolerance for ambiguity is a unique component of the entrepreneurial personality. Yusof, et al. (2007) suggested that propensity to risk and innovativeness, need for achievement and tolerance for ambiguity affects the entrepreneurial tendencies. Taormina and Lao (2007) suggested that there is a correlation between social networking and motivation to start a business. Birdthistle (2008) stated that the character of internal locus of control is one of the essential nature of entrepreneurship and that being creative is important for someone to have a career as an entrepreneur. Phipps (2012) claimed that there is a positive and significant correlation between creativity and entrepreneurial intentions. Thus, students who have characteristics of an internal locus of control, need for achievement, risk taking propensity, creativity, social networking and tolerance for ambiguity, have the tendency to start a business in the future.

Based on the above discussion, students'entrepreneurial characteristics improved after they participated in entrepreneurship training and being actively involved in the business training. These students also had intentions to establish a new business in the future because they were equiped with business ideas and social networking.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Process*. *50*, 179-211

Ajzen, I. (2005). *Attitude, Personality and Behaviour*. Second Edition. Open University Press.

Arasti, Z., Falavarjani, M.K. & Imanipour, N. (2012). A study of teaching methods in entrepreneurship education for graduates students. *Higher Education Studies*. (1), 2-10.

Basu, A. & Altinay, E. (2002). The interaction between culture and entrepreneurship in London's immigrant business. *International Small Business Journal*. *20*(4), 371-393.

Begley, T. M. (1995). Using founder status, age of firm, and company growth rate as the basis for distinguishing entrepreneurs form managers of smaller businesses. *Journal of Business Venturing.10*(3), 249-263.

Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review*. *13*(3), 442-453.

Birdthistle, N. (2008). An examination of tertiary students' desire to found an enterprise. *Education + Training*. *50*(7), 552-567.

Bonnett, C. & Furnham, A. (1991). Who wants to be an entrepreneur? A study of adolescents interested in a young Enterprise scheme. *Journal of Economic Psychology*. *12*, 465-478.

Chen, W., Weng, C.S. & Hsu, H. (2010). A study of the entrepreneurship of Taiwanese youth by the Chinese Entrepreneur Aptitude Scale. *Journal of Technology Management in China*. *5*(1) p.26-39

Delmar, F. & Shane, S. (2003). Does business planning facilitate the development of new ventures? *Strategic Management Journal. 24*, 1165-1185.

Direktorat Jenderal Pendidikan Tinggi Kementrian Pendidikan Nasional [Directorate of Higher Degree of National Education Ministry]. (2010). *Panduan Program Mahasiswa Wirausaha* [*Guideline of student entrepreneurial Program]*. Jakarta

Drnovsek, M. & Erikson, T. (2005). Competing model of entrepreneurial intentions. *Economic and Business Review*. *7*(1), 55-71.

Drucker, P.F. (1985). *Innovation and entrepreneurship practice and principles*. New York: Harper & Row.

Fini, R., R. Grimaldi, Marzocci, G. L., & Sobrera, M. (17-19 June 2009). *The foundation of entrepreneurial intention*. Paper presented at the Summer Conference on Copenhagen Business School, Denmark.

Galloway, L., Brown, W., Anderson, M., & Wilson, L. (2006). Investigating the potentials of entrepreneurship education. *International Journal of Management Education*. 57-65

Gartner, B. W. (1988). "Who is an entrepreneurs?" Is the wrong question. *American journal of small business*. *12*(4), 11-32.

Gorman, G., Hanlon, D., & King, W. (1997). Some research perspectives on entrepreneurship education, enterprise education and education for small business management: a ten-year literature review. *International Small Business Journal*. *15*(3), 56-77.

Greenberg, J. & Baron, R.A. (2008). *Behavior in organization (Ninth Edition)*. New Jersey: Pearson Education.

Hatten, T. S. & Ruhland, S.K. (1995). Student attitude toward entrepreneurship as affected by participation in n SBI program. *Journal of Education for Business*. *70*(4), 224-227.

Indarti, N. & Rostiani, R. (2008). Intensi kewirausahaan mahasiswa: Studi perbandingan antara Indonesia, Jepang dan Norwegia [Students' intentions of entrepreneurship: a comparison study between Indonesia, Japan, and Norwegia]. *Jurnal Ekonomika dan Bisnis Indonesia*. *23*(4), 1-27.

Kobia, M. & Sikalieh, D. (2010). Towards a search for the meaning of entrepreneurship. *Journal of European Industrial Training*. *34*(2), 110-127.

Kourilsky, M. L. & Walstad, W.B. (1998). Entrepreneurship and female youth: Knowledge, attitude, gender differences, and educational practices. *Journal of Business Venturing*. *13*(1), 77-88.

Krueger, N. F. & Brazeal, D.V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*. *19*(2), 91-104.

Kuip, I. & Verheul, I. (2003). Early development of entrepreneurial qualities: The role of initial education.. *EIM Business & Policy Research*. Zoetermeer. 1-27.

Josien, L. (2012). Entrepreneurial orientation: An empirical study of the risk-propensity dimension of entrepreneurs. *Academy of Entrepreneurship Journal*. *18*(1), 21-34.

Lefton, L. A. (1985). *Psychology (Third Edition)*. Massachusetts: Allyn and Bacon, Inc.

Liñán, F. , Moriano, J.A., & Zarnowska, A. (2008). *Teaching psychology of entrepreneurship: Perspective from six European Countries.* Primera edición. Madrid: Closas-Orcoyen, S.L. Paracuellos de Jamara.

Lorz, M. (2011). *The impact of entrepreneurship education on entrepreneurial intention.* (Doctoral dissertation). University of St. Gallen, Bamberg.

Luthje, C. & Franke, N. (2003). The 'making' of an entrepreneur: Testing a model of entrepreneurial intent among engineering students at MIT. *R&D Management*. *33*(2), 135-147.

Mazzarol, T., Volery, T., Doss, N., & Thein, V. (1999). Factors influencing small business start-ups. *International Journal of Entrepreneurial Behaviour & Research*. *5*(2), 48-63.

Othman, H. N. & Ishak, S.B. (2009). Attitude Towards Choosing a Career in Entrepreneurship Amongst Graduates. *European Journal of Social Sciences*. *10*(3), 419-434.

Phipps, S. T. A. (2012). Contributors to an enterprising gender: Examining the influence of creativity on entrepreneurial intentions and the moderating role of political skill controlling for gender. *Academy of Entrepreneurship Journal*. *18*(1), 77-90.

Raposo, M., Paco, D. A., & Ferreira, J. (2008). Entrepreneur's profile: A taxonomy of attributes and motivations of university students. *Journal of Small Business and Enterprise development. 15*(2), 405-418.

Rasheed, H. S. (2003). Developing entrepreneurial characteritics in youth: The effects of education and enterprise experience. A draft submitted to *the International Journal of Entrepreneurship education*.

Sexton, D. L. & Bowman, N. (1985). The entrepreneur: A capable executive and more. *Journal of Business Venturing*. *1*, 129-140.

Sunarya, A., Sudaryono, & Saefullah, A. (2011). *Kewirausahaan (Enterpreneurship)*. Yogyakarta: Andi Offset.

Taormina, R. J. & Lao, S.K. (2007). Measuring Chinese entrepreneurial motivation: Personality and environmental influences. *International journal of Entrepreneurial Behaviour & Research*. *13*(4), 200-221.

Wibowo, Agus. (2011). *Pendidikan Kewirausahaan [Enterpreneurship Education] (First Edition)*. Yogyakarta: Pustaka Pelajar.

Yusof, M., Sandhu, M.S., & Jain, K.K. (2007). Relationship between psychological characteristics and entrepreneurial inclination : A case study of student at University Tun Abdul Razak (UNITAR). *Journal of Asia Entrepreneurship and Sustainability. 111*(2), 23-41.

Zafar, M.J., Yasin, G., & Ijaz, M. (2012). Social networking a source developing entrepreneurial intentions among enterpreneurs: A case of multan. *Asean Economic and Financial Review. 2*(8), 1072-1084.

Zarei, E., Zainalipour, H., & Shahraki, L.S. (2011). Relationship between achievement motivation and ambiguity tolerance with entrepreneurship among students in Hormozgan. *Journal of Educational and Management Studies*. *3*(2), 167-172.

Zimmerer, T.W., Scarborough, N.M., & Wilson, D. (2008). *Essentials of entrepreneurship and small business management (5th Edition)*. [translated by Kwary, D. A. & D. Fitriasari. *Kewirausahaan dan Manajemen Usaha Kecil*.] Jakarta: Salemba Empat.

PRACTICING WHAT WE PREACH: ENTREPRENEURSHIP IN ENTREPRENEURSHIP EDUCATION

Patrick J. McGuigan, Pace University

ABSTRACT

A redesign of an introductory class in entrepreneurship is described. Turning the class into a living lab sidelines ongoing criticism whether entrepreneurship can be taught. Research on the obstacles impeding entrepreneurship pedagogy is reviewed as they relate to the redesigned class. Best practices are gathered from the literature and applied to the redesign to ensure the class maintains a suitable level of rigor. The overall aim of a redesigned class is to help improve the value and realism in the entrepreneurship classroom. Educators need to give up control and allow the class to messy and chaotic. The challenge to is create a meaningful and useful experience for students in a discrete amount of time. Students will be led through a process that demands that they think about themselves, think about entrepreneurship, take entrepreneurial action, and obtain feedback while reflecting on what is happening in a safe supportive environment.

INTRODUCTION

The impact of entrepreneurship on economic growth and employment are widely acknowledged (Rauch & Hulsink, 2015; Audretesch, Grilo, & Thurik, 2011) and has led to an explosion in entrepreneurship education (EE) programs. In spite of this growth a consensus of exactly what should be taught to entrepreneurship students has not developed (Gedeon, 2014; Solomon, 2007). Most programs have grown piecemeal over time and were shoehorned into entrenched academic bureaucracies impeding the development of best practices in EE (Gedeon, 2014; Kuratko, 2005).

Vanevenhoven (2013) argued that incremental adjustments to existing pedagogies will not lead to the program innovations in EE necessary to prepare students to be entrepreneurs – fearless educators are necessary for a mutiny to occur (Meyer, 2011). The Global Entrepreneurship Monitor cites three barriers to entrepreneurship: social and cultural barriers, lack of capital, and lack of education (Rideout & Gray, 2013). If a community is going to leverage entrepreneurship - education provides a platform to create new social and cultural realities.

EE is confronted with significant entrenched obstacles that will be difficult to overcome. Primary education in the United States prefers conformity and standardization at the expense of creativity, independence, and a questioning approach (Wagner, 2008). Primary education socializes and conditions students to expect educational processes to conform to norms and galvanizes them against change. Higher education finalizes what was started at the primary level – students are taught how to work for somebody else (Rideout & Grey, 2013; Aronsson, 2004). While acknowledging the fearless efforts of many educators attempting to drive change, classroom management insidiously encourages conformity and standardization.

Overcoming entrenched obstacles is a formidable challenge. Entrepreneurship educators must practice what they preach in the effort to drive change and improve educational outcomes.

Rideout and Gray (2013) posit the critical question - "what type of EE, delivered by whom, within which type of university, is the most effective for this type of student, with this kind of goal, and under these sets of circumstances?" This paper describes a format for an introductory course at the undergraduate level, taught by an academic to students who self-selected into the course. The goal is to challenge students to explore their entrepreneurial intentions while simultaneously exploring their personal capacity to be an entrepreneur. Entrepreneurship is not for everyone.

DEFINING ENTREPRENEURIAL EDUCATION

A romantic view of entrepreneurs is not uncommon, but the reality is entrepreneurs are much more mundane. The question as to whether entrepreneurs are made or born persists (Duval-Couetil, 2013; Henry, Hill & Leitch, 2005), and the uncertainty if entrepreneurship can be learned as a set a principles and skills, or if it is a mindset that makes one risk tolerant and opportunistic. This divide is likely reinforced by who teaches the class and that may put the academic field, and the practical field of entrepreneurship at odds (Duval-Couetil, 2013; Neck & Greene, 2011, p.56). This dichotomy puts the focus on the teacher when instead it should be on the student.

There is no 'one-way' entrepreneurs become entrepreneurs. It is not unusual to find entrepreneurs who are driven to entrepreneurship by the internal impetus to chart their own destiny – perhaps they were born that way. It is also not unusual to find a happy corporate citizen who is haunted by the need to solve a problem that their organizations is ignoring, and the drive to solve the problem transforms the "company person" into an entrepreneur – perhaps they are made in spite of their erstwhile desires. The paths that lead to entrepreneurship are limitless. Consistent with Neck and Greene (2011) I argue that entrepreneurship should focus on value creation, and while this requires understanding and knowing, it also demands applying and acting (Duval-Couetil, 2013).

Value creation is normally described in the entrepreneurship literature as new venture initiation, but a more inclusive description includes many value creation initiatives that do not result in new venture creation. Community activism, intrapreneurship, educational reform, government reform, and similar efforts all demand entrepreneurial thinking and action. I adopt Gedeon's (2014) definition of entrepreneurship education that places a premium on value-added student transformation:

> Entrepreneurship education encompasses holistic personal growth and transformation that provides students with knowledge, skills and attitudinal learning outcomes. This empowers students with a philosophy of entrepreneurial thinking, passion, and action-orientation that they can apply in their lives, their jobs, their communities, and/or their own new ventures.

Most introductory courses in entrepreneurship do not allow programs to pick the students who will be in the class. This class should be broadly inclusive and encourage students to think in terms of value creation no matter how they ultimately spend their career.

ENTREPRENEURSHIP PEDAGOGY

The Johnson Center for Entrepreneurship and Innovation at Indiana University released a study in June 2006 (Finkle, Kuratko, & Goldsby, 2006) that described over 400,000 students annually taking 2,200 hundred courses at over 1600 schools compared with 24,000 students in 1996 (Rideout & Gray, 2013). That is staggering growth that has continued unabated. Instructional methods in EE are widely varied by types of instruction (lecture, cases analysis, business plans and experiential learning), and course content (general business management, small business management, technology venturing).

EE pedagogy is diverse, eclectic, and changing and moving toward an applied approach, but lecture and case studies are dominant (Rideout & Gray, 2013). The dominant instructional methods teach about entrepreneurship as a phenomenon using theory to develop critical thinking. The theory-practice tension in EE can be likened to medical school where it is important to not only learn the latest findings, but also practice the latest techniques (Bliemel, 2013). Entrepreneurial instructors have created myriad methods of instruction to liken the classroom to the real world. Beyond lectures, case studies and business plans instructional methods include (Carrier, 2005):

1) Simulations and games that are either computer-based or behavioral (Verzat, Byrne, & Fayolle, 2009).
2) Original educational proposals that have included: teaching entrepreneurship through the classics, through video, using life stories, or using role-playing for educating about emotions and learning from failure.
3) Integrating practitioners into the training process or having practitioner augment the faculty.
4) Training students to identify and/or create business opportunities.
5) Student run companies (Addams, Allred, Woodbury, & Jones, 2014).
6) Flipping the classroom (Bliemel, 2014).

The challenge for instructional designers in EE is to select a combination of methods suited to the instructor, accepted within the institution, appropriate for the subject matter, and targeted to the students. Success will largely depend on the design of the program to enable students to develop an attitude of inquiry and curiosity that will empower them to enact alternate futures, and conceive, document and implement actions that will lead to some alternative being realized (Starkey & Tempest, 2009).

THE STUDENT

Students of introductory courses are typically treated as a commodity. The breadth and width of material covered can be intimidating, and students are easily overwhelmed and overcome. The volume of students pursuing EE allows programs to relax and inoculates against stress that might be present if they were struggling with enrollment. It can be argued that competition among programs brings a market discipline to EE, but students are not always the best judges of one program over another. In a relaxed environment it is not surprising that lectures, case studies and business plans dominate in EE.

Moving away from traditional pedagogy (lectures, case studies, business plans), and using more innovative teaching methods expands the incidence of social loafing. Each student

commitment to collaborative efforts varies widely among students. Social loafing is about the reduction of physical, perceptual, or cognitive effort in the presence of others – students expect others to do the work while giving the loafer credit (Jassawalla, Sashittal, & Malshe, 2009). Student react by taking responsibility and doing the work, or redoing the work contributed by the slacker. The students are less concerned about doing the work than they are by the distractions caused by the loafer – the students can fix the work, but are powerless to control disruptions (Jassawalla, Sashittal, & Malshe, 2009).

An additional hurdle has been identified as blissful ignorance (Kennedy, Lawton, & Plumlee, 2002). The skills that develop competence in a particular domain are the same skills required to evaluate competence in that domain. When people are incompetent in judging their own behavior they are precluded by their lack of awareness from developing the knowledge they do not know they do not have (Kennedy, Lawton, & Plumlee, 2002; Kruger & Dunning, 1999). In a nutshell people are incompetent and unaware.

Loafing and incompetence impede the successful uptake of experiential learning. Course design should specifically contemplate these realities and provide space for students to manage distractions and overcome incompetence. The value of experiential learning is the process whereby knowledge is acquired through a complex set of interaction between thinking, feeling, and behaving while immersed in a complex environment (Robinson & Josien, 2014). Instructional designers must make sure that when they develop roles they ensure that they are measuring the right content, with the right methods, for the right reason (Church & Rotolo, 2013).

To cope with complex changing environments improving skills is an excellent way to make sure that skill development matches the rate of technological change. It can be difficult to evaluate and assess the outcomes of any exercise or course, and this is the seminal challenge of the day. It is essential that instructional designers keep in mind the difficult problem of making sure any experiential learning has the intended outcome. The complexity of this task can be evaluated by looking at practices where excellent metrics are available. Percival, Cozzarin, and Formaneck (2013) evaluated training investment in 14 industries from 1999 – 2005. The good news is that in 12 out of 14 industries there was a positive effect on productivity, but the return on investment was only positive in four industries. Developing effective experiential learning methods is difficult and hard to judge.

THE CLASSROOM AS LAB

Professors realize the value of realism but are challenged to overcome the real pressing constraints of time and money. Developing a course is time consuming and demanding, and in many respects entrepreneurial. The professor has a wonderful opportunity, but risks negative evaluations, public defamation through rate-my-professor, and other harm that can impact the faculty member financially and professionally (Gedeon, 2014). Not every professor is tenured, and not every tenured professor is willing to take the types of risks in the classroom necessary to simulate the real world. Is the college classroom an alternate universe? The classroom has many, if not all, of the attributes of the real world. What exempts the classroom from the real world are the attitudes and expectations of the students and teachers.

Gedeon (2014) describes three major categories of course content that translate readily to learning outcomes: theory, competencies, and attitudes/values. Theory is realized as knowledge, skills can be directly assessed but a change of attitude is more difficult to assess. Knowledge and

skills are widely readily assessed through multiple assessment modes, but values are more complex and difficult to assess. Not all educators are comfortable with intentionally trying to change their student's values. Values are something that students can change; they are learned dispositions (Hofstede, 2001). "Entrepreneurship educators should inspire and motivate their students in order to spark transformative personal growth, desired learning outcomes and change in attitudes and values" (Gedeon, 2014).

To enter the real world the entrepreneurship educator has to be willing to do what will make them uncomfortable. Transformative processes must come from within the student; the professor can only provide a set of conditions that will encourage that transformation. It starts with giving up control in important ways and trusting a process that will guide students down a path. Not every student will be successful, most will be uncomfortable, but the trials and discomfort will return dividends for a lifetime. It should also be noted that the course design described would take time and patience. Making small shifts in the structure of assignments, feedback loops, and the providing choices make the classroom a reasonable and realistic simulation of what they can expect in the world.

The number of critics of management education (teaching and research) are distressed by how disconnected education is from practice is growing (Clegg & Starbuck, 2009). Blood (2006) challenges each instructor to implement changes in the design of their individual courses to demand active learning. If each instructor takes a small step the preparedness of entrepreneurship graduates will take a large step. Students have made business the most popular major (Glenn, 2011), but it is worth considering whether we are a destination major or a default choice.

Management and entrepreneurship scholars have demonstrated an increased interest in exploring applied capabilities of effective managers and entrepreneurs, and it is widely agreed that being effective requires more than conceptual knowledge (Baldwin et al 2011). If we want to increase the action potential of knowledge we need to change something in our teaching (Blood, 2006). Implementing a project such as recommended in this proposal is a solution to improve the ability of the entrepreneurship educator to change something in their teaching. Projects that demand involvement and rigorous engagement have been found to be an invaluable pedagogical tool that aids in achieving learning outcomes (Devasagayam, Johns-Masten, & McCollum, 2012). Experiential learning is often misunderstood as a set of tools and techniques missing the point that experiential learning is above all else a philosophy of learning (Dewey, 1938; Kolb & Kolb, 2005).

Kolb and Kolb (2005) establish these nine educational principles for the creation of learning spaces:

1) Respect for learners and their experience.
2) Begin learning with the learner's experience of the subject matter.
3) Creating and holding hospitable spaces for learning.
4) Make space for conversational learning.
5) Making space for development of expertise.
6) Making spaces for acting and reflecting.
7) Making spaces for feeling and thinking.
8) Making space for inside-out learning.
9) Making space for learners to take charge of their own learning.

Tacit knowledge is created in the intimacy of lived experience and combined with direct instruction may lead to a performance advantage (Baumard, 1999; Sternberg et al, 2000; Armstrong & Mahmud, 2008). The best workspaces are full emersion experiences and we should expect no less from learning spaces we create. Entrepreneurship educators must create programs that merge learning and practice.

THE CLASS REDISIGN

The classroom should more closely approximate the environment graduates will inhabit, or intend to inhabit upon graduation. The literature on the benefits and virtues of creating environments where a student's inner world and life story are central is essential for personal development (Petriglieri, Wood, & Petriglieri, 2011; Kaiser & Kaplan, 2006; Lyons, 2002; Tobert & Fisher, 1992). Extending the learning space to include a more robust realism makes sense. To make the classroom "real" more active participation from students is demanded, in conditions with more consequential outcomes, and face-to-face interaction between students and faculty.

What should be taught may not be as important as how it is taught. Moving away from what to how allows for transformational learning to blossom. Transformational learning involves reflection on one's life experiences, core beliefs, and how one makes sense of the world and self (Petriglieri, Wood, & Petriglieri, 2011). Courses and programs that remove students from the environment have prospects for the worst outcomes, because they are deprived of real experiences, and the ability to reflect on those experiences (Petriglieri, Wood, & Petriglieri, 2011; Mintzberg & Gosling, 2002).

The challenge to is create a meaningful and useful experience for students in a discrete amount of time. Students will be led through a process that demands that they think about themselves, think about entrepreneurship, take entrepreneurial action, and obtain feedback while reflecting on what is happening in a safe supportive environment. The goal is to provide a series of nested challenges. Each challenge will require reflection activities that apply Eyler and Giles (1999) criteria to create more realistic learning spaces:

1. Connect experience and knowledge;
2. Stimulate continuity of reflection before, during, and after the experience;
3. Make sure the context applies to real life situations;
4. Challenging students' perspectives; and
5. Mentor and coach the students.

It is important to turn the autopilot off, and put aside preconceived notions and experience-based expectations and try something new. We should all be mindful about what we are doing and why we are doing it. Bringle and Hatcher (1999) establish that effective reflection should:

a) make sure course content is linked to expected learning outcomes;
b) Offer clear descriptions, expectations, and the assessment criteria;
c) Occur regularly so students can develop the capacity for more thoughtful and broader examination of issues;
d) The instructor must provide feedback to help students learn how to improve their critical analysis and reflection skills; and

e) Challenge students to explore, clarify, and alter their personal values.

The overall aim of a redesigned class is to help improve the value, realism and time reflecting on entrepreneurship as a discipline and as a practice. This is a tall order when many students are disengaged or apathetic, but if that is what they bring to the table that is what will be explored. Each student has to be accountable and transparent – there is no right or wrong simply the way we are where we are.

The redesign of the class is built on a stream of activities. Students review the course requirements during the first class and complete a written statement that they are willing and able to complete the course requirements. Time pressure is an important element of the class. The work students will be completing challenges their ability to complete the tasks, organize and transform their ideas into actionable deliverables, and present their work product and accept outcomes. The redesign is not appropriate for condensed course calendars. The activities are as follows:

1) The Worldview Exercise (20% of course grade) – exercise done at the opening of the class and repeated at the end of the semester. The exercise is a personal exploration that challenges students to explore who they are, and document why they are that way, and challenge assumptions that determine why they see things the way they do.
2) The Proposal and the Pitch (40% of course grade) – students are challenged to determine what type of assignment they would like to do on what. The students have to prepare a proposal detailing the merits of the assignment and why it is justified at this time in this class. The students will then pitch the proposal first to the class, and then to a panel of three professors. The proposal will be accepted or rejected. When a proposal is rejected students are required to complete an alternate assignment. The assignment proposal must include a final reflection that explores the entire process.
3) All the Rest (40% of the course grade) – To maintain the appropriate level of rigor, students are provided with more traditional assignments. Students are expected to complete readings and explore theory as it relates to the course content. Students will have to prepare and take a final examination on the readings and lectures. Students are incentivized to work collaboratively and the final exam is a collaborative exam.

THE WORLDVIEW EXERCISE

The worldview concept has received increased attention, and it is important to understand how we view the world, and why we view the world the way they do! Completing this assignment challenges students to explore who they are, and document why they are that way. The assignment is completed from two perspectives: the first is a detailed account of their worldview that is personal and confidential; the second is an account of their worldview they are comfortable sharing with the class. During class when the worldview is due students will break into small groups and present and discuss their worldviews to each other. This process builds relationships and class cohesion. The two-tiered approach is intended to have students consequentially evaluate what, and why they are willing to share some things, and not others. The relationship between the two is debriefed in the first reflection assignment. This assignment is completed in the very early part of the class. It is a baseline.

Understanding ourselves, what we value and why we value it is a great starting point to understanding how we view and treat others. Understanding your worldview helps a person

understand their biases of thought, preconceived notions, and how they structure categories of people and things. A worldview is a set of assumptions we hold about the world (Sire, 1988). It is how an individual interprets and explains the world, and how the individual draws conclusions, and takes action based on their constructed understanding (Phillips & Brown, 1984). Our worldview is the model that guides how we will act in the world.

Worldviews are so pervasive we often fail to recognize them and how they impact us. Your taste in movies, television, music, magazines, newspapers, government, education, science, art, and every other way you experience life is affected by your worldview. Importantly, when movies and television are made, along with all other consequential human activity their creation is impacted by the creators' worldview. Ignoring the importance of worldviews is detrimental and potentially dangerous.

There is no right or wrong answer, or way to complete the assignment, but it must given attention to be completed properly. To get students started they are provided some questions that may help them discover their worldview! These questions are merely prompts and should be evaluated as such. For instance, religion or spirituality is vitally important to many people and is essential to understanding how they see the world. It is important to include prompts to help people complete the exercise more thoughtfully.

Some prompts might include:

1. Do you believe in a higher power, force or are you spiritual? Do you live a life dedicated to that belief, or is it something that makes you feel good when things aren't going well?
2. What are the most important things in life for you? How do you know whether you are or aren't successful?
3. What do you want from a relationship? How fast do you think a relationship should move? What's the point of having one?
4. What are your politics? What do you think governments should -- and shouldn't -- oversee and enforce? What do you the individual's rights are as far as things like privacy and criminal prosecution go?
5. What makes someone a hero to you? What are a person's obligations to society? To family?
6. What things give your life meaning? What couldn't you live with? What couldn't you live without?
7. What do you think makes a family? How should a family interact? What are the responsibilities of parents?
8. What is the role of work in your life? How will you measure success?
9. Do you care about education? What is education and why is it important?
10. What kind of person do you want to be? What kind of person are you becoming? Do your actions reflect your desires?

This is not intended to be an exhaustive list it is only intended to stimulate thinking. There is no right or wrong way to do this assignment, but the assignment will yield marginal benefits if it does thoughtlessly. This is assignment is intended to be a deep self-discovery and exploration. If the students are superficial they will get superficial results. Done right this is a difficult and time-consuming process.

Students will return at the end of the semester and redo their worldview. They are asked to do the assignment from scratch, and only after it is completed compare the two. As before, they will be asked to complete two versions – one to share and one for them. An integral part of completing each worldview is to complete a reflection on the process, difficulties and surprises associated with completing the assignment.

Students are asked to pay careful attention to the decisions about what they would and would not include in the worldview that was to be shared. They are also asked to discuss if they intentionally omitted anything from the version only to be shared with the professor. They are not asked to disclose what they omitted, only share that they omitted something. Students are provided some instruction on effective reflection to help ensure they can get the greatest benefit from the process.

THE PROPOSAL AND THE PITCH

In an entrepreneurship class it is appropriate that student should be required to act entrepreneurially. Allowing students to create and pitch a proposal for 40% of their course grade is real, timely and demands action. Students will do what they would do to develop and pitch and idea for a new business, but they will be pitching course work. They will be pitching to a panel of professors who are experts, and have the power to accept or reject their proposal. Students whose proposal is rejected are required to do an alternate assignment. The alternate assignment is deliberately unattractive to encourage students to do their best - it is also challenging to create real "stakes!!"

As with "real" entrepreneurship there are very few enumerated rules. Rules squash creativity and innovation and are not in keeping with the spirit of the project. The one element that must be contained in every proposal is a comprehensive reflection on the overall process. Students can work alone or in teams, but if working in teams each student prepares their own reflection. Students are also told that they can ask for their assignment to be for greater than 40% of the overall grade – this allows students to dial up the risk. The other artificial imposition is the time frames; students will have to adhere to a calendar created by the professor. The worldview and proposal and pitch are closely related and time has to be provided in the calendar to walk through all the steps of the process. The assignment allows students to develop their social capital and incentivizes students to grow and consequently harvest a greater educational outcome (Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011).

The students can select any topic and assignment type they prefer. There is no instruction in the types of assignments that might be suitable or the topics. College students are experts since they have been students for years. The problem is that students are not accustom to taking risk in this domain, but entrepreneurship, real entrepreneurship, involves risk. This will make students uncomfortable and that is the point – to try and get comfortable with discomfort. Experiential training grows and strengthens the connection between the belief prospective entrepreneurs have in their own skill and competencies, and the focus and commitment they have for opportunities they identify (Schenkel, D'Souza, & Braun, 2014).

If students are not willing to put the effort into a realistic simulation of what they might expect if they become entrepreneurs, it is appropriate to question their level of commitment to becoming an entrepreneur. Many students may take entrepreneurship classes never intending to be entrepreneurs, but everyone can benefit by training to become an entrepreneur. There are few downsides to challenging students to be and do their best. How busy students choose to allocate

their effort to courses is a critical concern because educational outcomes are dependent on students to harvest that opportunity (Love, Love & Northcraft, 2010).

To provide a forum for feedback and discussion students pitch their proposals to the class prior to pitching to the panel of professors. This allows students to get feedback to strengthen their ideas and presentation. Class members are required to provide brief written feedback on every proposal pitched - a note to help or encourage the presenters. Feedback is to be short and to the point because the class is moving quickly. It is helpful to prime students on providing useful feedback.

Table 1

Week	Activity	Deliverable
1	Course requirements are introduced and reviewed. Worldview is assigned and discussed.	Commitment Statement
2	Students encouraged to book one-on-one with professor to explore any concerns	One-on-Ones
3	Students broken into small groups to discuss and will take turns introducing each other to class	1st Private Worldview
4	Suggestions for giving good feedback are reviewed	1st Worldview Reflection
5	Etiquette expected for professor pitch is reviewed	Proposal and Pitch to Class
6	Proposal for pitch will be circulated to professor panel week prior to pitch	Proposal for Pitch to Professor Panel
7		Pitch to Professor Panel
8		Blank
9		Blank
10		Blank
11	Etiquette for assignment results presentation are reviewed	Project Delivered
12		Project & Results Presented
13	Class discussion on proposal and pitch with critical takeaways highlighted	Overall Project Reflection
14	Students rejoin small groups to discuss how their worldview impacted over course of semester	2nd Private Worldview (redo)
15		2nd Worldview Reflection

CONCLUSION

Practicing what we preach provides a pathway to make the classroom experience a "real" experience for students (and professors). Entrepreneurial education is efficacious, but whether we can teach students to be entrepreneurs remains in question. The intent of having students create an assignment proposal and pitch provides safe practice with a topic they know very well. Every college student is an expert student - knowledgeable in the varieties of assignments and familiar with all the options.

The process is clumsy and messy, but that is also vitally real. It is difficult for students to free ride and apply the minimum effort. This approach to entrepreneurship education is unapologetic about the demand that it puts on students to perform at a high level – students need to apply their best effort. Professors also need to bring their best effort. We get what we give.

REFEREENCES

Addams, L., Allred, A., Woodbury, D., & Jones, S. (2014). Student-operated companies: Entrepreneurial focus in an integrated business core. *Journal of Entrepreneurship Education*, 17: 1-11.

Armstrong, S.J., & Mahmud, A. (2008). Experiential leaning and the acquisition of managerial tacit knowledge. *Academy of Management Learning and Experience*, 7(2): 189-2008.

Aronsson, M. (2004). Education matters – But does entrepreneurship education? An interview with David Birch. *Academy of Management Learning & Education*, 3(3): 289-292.

Audretsch, D.B., Grilo, I., & Thurik, A.R. (2011). Globalization, entrepreneurship, and the region. In M. Fritsch (Ed.), *Handbook of Research on Entrepreneurship*, Edward Elgar, Cheltenham, 11-32.

Baldwin, T.T., Pierce, J.R., Joines, R.C., & Farouk, S. (2011). The elusiveness of applied managerial knowledge: A critical challenge for management educators. *Academy of Management Learning and Education*, 10: 583-605.

Baumard, P. (1999). *Tacit Knowledge in Organizations*. London: Sage.

Bliemel, M.J. (2014). Lessons learned from an inside-out flip in entrepreneurship education. *Small Enterprise Research*, 21: 117-128.

Bliemel, M.J. (2014). Getting entrepreneurship education out of the classroom and into students' heads. *Entrepreneurship Research Journal*, 4(2): 237-260.

Blood, M.R. (2006). Only you can create actionable knowledge. *Academy of Management Learning and Education*, 5(2): 209-212.

Bringle, R.G., & Hatcher, J.A. (1999). Reflection is service-learning: Making Meaning of experience. *Educational Horizons*, Summer:179-185.

Carrier, C. (2007). Seven strategies for teaching entrepreneurship: What else beyond lectures, case studies and business plans?, in Fayolle, A. (Ed.), *Handbook of Research in Entrepreneurship Education*, Vol. 1, Edward Elgar Publishing, Cheltenham, 143-159.

Church, A.H., & Roloto, C.T. (2013). How are top companies assessing their high-potentials and senior executives? A talent management benchmark study. *Consulting Psychology Journal: Practice and Research*, 65(3): 199-223.

Clegg, S.R. & Starbuck, W.H. (2009). Can we still fix management? The narrow path towards a brighter future in organizing practices. *M@n@gement*, 12: 332-359.

Devasagayam, R., Johns-Masten, K., & McCollum, J. (2012). Linking information literacy, experiential learning, and student characteristics: Pedagogical possibilities in business education. *Academy of Educational Leadership Education*, 16(4): 1-18.

Dewey, J. (1938). *Education and Experience*. New York: Simon and Schuster.

Duval-Couetil, N. 2013. Assessing the impact of entrepreneurship education programs: Challenges and approaches. *Journal of Small Business Management*, 51(3): 329-351.

Eyler, J.S., & Giles, D. E. (1999). *Where's the learning in service learning?* San Francisco, CA: Jossey-Bass.

Finkle, T.A., Kuratko, D.F., & Goldsby, M.G. (2006). An examination of entrepreneurship centers in the United States: A national survey. *Journal of Small Business Management*, 44(2): 184-206.

Gedeon, S.A. (2014). Application of best practices in university entrepreneurship education. *European Journal of Training and Development*, 38(3): 231-253.

Glenn, D. (2011). *The default major: Skating through B-school*. The New York Times, 4/14

Graen, G.B., Hui, C., & Taylor, E.A. (2006). Experience-based learning about LMX leadership and fairness in project teams: A dyadic directional approach. *Academy of Management Leaning and Education*, 5: 448-460.

Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: Can entrepreneurship be taught? Part II. *Education and Training*, 47(2/3): 158-169.

Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*. Newbury Park, CA:Sage Publishing.

Jassawalla, A., Sashittal, H., & Malshe, A. (2009). Students' perceptions of social loafing: Its antecedents and consequences in undergraduate business classroom teams. *Academy of Management Leaning and Education*, 8(1): 42-54.

Kaiser, R.B., & Kaplan, R.B. (2006). The deeper work of executive development: Outgrowing sensitivities. *Academy of Management Leaning and Education*, 5: 463-483.

Kennedy, E.J., Lawton, L., & Plumlee, E.P. (2002). Blissful ignorance: The problem of unrecognized incompetence and academic performance. *Journal of Marketing Education*, 24(3): 243-252.

Keys, B., & Wolfe, J. (1990). The role of management games and simulations in education and research. *Journal of Management*, 16(2): 307-336.

Kolb, A.Y., & Kolb, D. (2005). Learning styles and learning spaces: Enhancing experiential learning in Higher education. *Academy of Management Learning and Education*, 4(2): 193-212.

Kuratko, D.F. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship: Theory and Practice*, 29(5): 577-597.

Love, E.G., Love, D.W., & Northcraft, G.B. (2010). Is the end in sight? Student regulation of in-class and extra-credit effort in response to performance feedback. *Academy of Management Learning & Education*, 9(1): 81-97.

Lyons, D. (2002). Freer to be me: The development of executives at midlife. *Consulting Psychology Journal: Practice and Research*, 54: 12-17.

McDaniel, M.A., Schmidt, F.L., & Hunter, J.E. (1988). Job experience correlates of job performance. *Journal of Applied Psychology*, 73: 327-330.

Mintzberg, H., & Gosling, J. (2002). Educating managers beyond borders. *Academy of Management Learning & Education*, 1: 64-76.

Meyer, G.D. (2011). The reinvention of academic entrepreneurship. *Journal of Small Business Management*, 49(1): 1-8.

Neck, H., & Greene, P. (2011). Entrepreneurship education: Known worlds and new frontiers. *Journal of Small Business Management*, 49(1): 55-70.

Percival, J.C., Cozzarin, B.P., & Formaneck, S.D. (2013). Return on investment for workplace training: The Canadian experience. *International Journal of Training and Development*, 17(1): 20-32.

Peterson, S.J., Luthan, F., Avolio, B.J., Walumbwa, F.O., & Zhang, Z. (2011). Psychological capital and employee performance: A latent growth modeling approach. *Personnel Psychology*, (2011), 64:427-450.

Petriglieri, G., Wood, J.D., & Petriglieri, J.D. (2011). Up close and personal: Building foundations for leaders' development through the personalization of management learning. *Academy of Management Learning & Education*, 10(3):430-450.

Phillips, W.G., & Brown, W.E. (1991). *Making Sense of your World*. Chicago: Moody Press.

Quinones, M.A., Ford, J.K., & Teachout, M.A. (1995). The relationship between work experience and job performance: A conceptual and meta-analytic review. *Personnel Psychology*, 44: 321-322.

Rauch, A., & Hulsink, W. (2015). Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on the entrepreneurial behavior. *Academy of Management Learning & Education*, 14(2): 187-204.

Rideout, E.C., & Gray, D.O. (2013). Does entrepreneurship education really work? A review and methodological critique of the empirical literature on the effects of university-based entrepreneurship education. *Journal of Small Business Management*, 51(3): 329-351.

Robinson, P., & Josien, L. (2014). Entrepreneurial education: Using "the challenge" in theory and practice. *Journal of Entrepreneurial Education*, 17: 172-185.

Schenkel, M.T., D'Souza, R.R., & Braun, F.C. (2014). Entrepreneurial self-efficacy, intent, and intensity: Does experiential training enhance or inhibit predisposition? *Journal of Developmental Entrepreneurship*, 19(1): 1-21.

Sire, J.W. (1988). *The Universe Next Door*. Downers Grove, ILL: InterVarsity.

Solomon, G. (2007). An examination of entrepreneurship education in the United States. *Journal of Small Business and Enterprise Development*, 14(2): 168-182.

Starkey, K., & Tempest, S. (2009). The winter of our discontent: The design challenge for business schools. *Academy of Management Learning and Education*, 8: 576-586.

Sternberg, R., Forsythe, G., Hedlund, J., Horvath, J., Wagner, R., Williams, W., Snook, S., & Grigorenko, E. (2000). *Practical Intelligence in Everyday Life*. New York: Cambridge University Press.

Sturman, M.C. (2003). Searching for the inverted U-shaped relationship between time and performance: Meta-analyses of the experience/performance, tenure/performance, and age/performance relationships. *Journal of Management*, 29: 609-640.

Torbert, W., & Fisher, D. (1992). Autobiographical awareness as a catalyst for managerial and organizational development. *Management Learning*, 23: 184-198.

Tulgan, B. (2007). It's okay to be the boss. New York: HarperCollins.

Vanevenhoven, J. (2013). Advances and challenges in entrepreneurship education. *Journal of Small Business Management*, 51(3): 466-470.

Verzat, C., Byrne, J., & Fayolle, A. (2009). Tangling with spaghetti: Pedagogical lessons from games. *Academy of Management Leaning and Education*, 8(3): 356-369.

BUILDING INTELLECTUAL PROPERTY AND EQUITY OWNERSHIP POLICY FOR ENTREPRENEURSHIP PROGRAMS: THREE DIFFERENT APPROACHES

David Rahn, California State University
Chico Tammy Schakett, Ohio Northern University
David Tomczyk, Quinnipiac University

ABSTRACT

Intellectual property (IP) protection and co-ownership of student businesses is an issue every entrepreneurship program needs to address. However, there is little literature about how to do this. After reviewing the literature, we present three different approaches to such policies: a hands-off approach, an evolving approach, and a structured approach. For each, we describe the methods for student IP and co-ownership issues and the justification behind these approaches, offering insight for educators seeking to build their own programs. At the end we suggest factors to consider for developing a university policy or refining an existing one.

BACKGROUND

Many entrepreneurship classes and programs throughout the U.S. have students work in teams to develop ideas. Sometimes such exercises are just that—opportunities for students to practice skills taught in the class. Other times, they are serious efforts to help students launch businesses. Pedagogically, there are a variety of justifications for doing this, one of the key being that it offers hands-on and realistic experiences under the supervision of a faculty or staff mentor. Other schools have Tech Transfer Offices or otherwise offer students the opportunity to develop businesses based on other people's ideas under the supervision or with the involvement of the school. But as anyone who works with students can attest, not every student idea actually works out. For a variety of reasons, student teams may dissolve, fall apart, or just fade away.

The problem, though, is that as soon as two or more people work together on a business idea, they are legally partners in a business entity (Uniform Partnership Act §101). Many people are unaware of this law and how it connects to every student team. Even worse, many faculty and staff are unaware of the legal ramifications that may affect them as a result, potentially with significant legal or financial ramifications for all parties involved—which includes the instructor, other classmates, and even the school.

Three Scary Stories

At Quinnipiac University, two students formed a team to create interactive stories about current events for children. Over the course of the semester, they both worked incredibly hard and, with a shoestring budget, created a functional app—and a deep, abiding hatred of each other. When the semester ended, both students disagreed with who had the rights to the business. With no clear policy to guide them, they threatened to bring in lawyers. They both ended up pursuing other ideas before that final step.

At California State University, Chico, two students formed a team to create an early

version of a crowdsourcing platform for inventors. The pitch was compelling and believable and the students were encouraged by various mentors, family and friends. A significant amount of progress was made and meaningful milestones were accomplished. One student graduated and out of necessity had to move back home and find work. The other remained in school, where he was able to actively pursue the business idea. Shortly, the two began arguing over the lack of effort by the participant living remotely. The student who remained active argued that the other should give up all equity or reengage. That individual refused on the grounds that his early contributions were substantial. Several months later, after much arguing, talking with attorneys, and the realization that without costly legal action no further progress would be made - two very aggravated individuals both began to pursue other ideas and an opportunity was lost.

At Ohio Northern University, faculty and guests watched a senior capstone presentation given by a collaborative team of business and engineering students on the feasibility of an automated mower. A faculty member asked who owned the product. After some confusion the business students pointed at the engineering students who shrugged and said, "Yeah, we think it's ours." There was a minor uproar from the back of room as a third group; the original student team who had pitched the product in an elevator pitches competition, informed all present that it was their idea. All the students were upset as well as the faculty advisors over the confusion of ownership. With the intervention of a parent, who happened to be a patent attorney, and pizza, the issue was eventually resolved.

If these stories sound disconcerting, they should, and they happen every day on campuses worldwide. The purpose of this paper is to provide some basic guidance on how to solve these problems for colleges and universities the U.S. This is not meant to be legal advice. Each country has its own laws and regulations, so the solutions presented in this paper may not be applicable to faculty and staff in other countries.

The Inadvertent Partnership Problem

There has been a plethora of research into technology transfer policies on campuses primarily covering licensing agreements, joint research ventures, and the impact of policies on faculty and researchers (Siegal & Phon, 2005). This paradigm concentrates on the organizational level of entrepreneurial partnership activity on campuses between the universities, faculty, and businesses/government organizations (Siegal & Phon, 2005). Other researchers in this area concentrate on entrepreneurship pedagogy impact. For example, Silva, Henriques, and Carvalho (2008) examine entrepreneurial education for engineering students, citing the need for "intellectual property awareness" and how they teach this in an entrepreneurship course.

However, one of the biggest potential legal risks arising on campuses today comes out of student business plan teams, and in particular, the claim of co-ownership that might be raised by team members under traditional principles of partnership law. After extensive research, it was found that despite the potential problems that could arise, little literature has addressed this topic, and of the relevant topics, most were written by Professor Anthony Luppino, culminating in his most recent articles on the topic (Litton, Patterson & Little, 2014; Luppino, 2009, 2012). While Luppino has done an excellen job discussing the legal ramifications that arise from this challenge, the lack of literature indicates that the dangers of the inadvertent partnership—student teams that form legal business entities even without any formal acknowledgement or documentation—may not be adequately addressed by entrepreneurship programs and classes, leaving open the possibility of potential harm to students, professors, and schools alike.

When students work on a team, the potential for disputes regarding the intellectual

property rights that can be asserted by faculty, students, and the university can arise when innovation occurs at a university or with the use or assistance of university resources. Luppino (2009) identifies these issues as a potential impediment to university-based innovation and entrepreneurship. He also addresses the problem of what he calls the "accidental or ill-defined partnership." For this paper, we will refer to these as "inadvertent partnerships" as we believe this phrase captures both accidental and ill-defined partnerships.

Luppino specifically addresses the problem of a co-ownership claim arising out of student teamwork at universities including student team projects in traditional classroom settings and student team projects in business planning or idea/innovation competitions. With regard to a team project in a traditional joint course-work assignment, he explains:

Thus, it is possible that, if the assignment generates valuable property, claims to ownership or at least shares of proceeds from exploitation of that property might logically be made by every student on the team, course instructors or teaching assistants and perhaps the university itself (Luppino, 2009; pg. 414).

These concerns are exacerbated by the fact that there is a precedent for successful businesses arising from student work as part of a class (such as in the case of Fred Smith and FedEx), extracurricular activities or work (such as with Bill Gates and Microsoft), or from social interactions or experiences directly connected to the school (such as with Mark Zuckerberg and Facebook). Such high success businesses have financial and reputational impacts on the school, the professors, and the students who may have participated in the formation of a business (Herrington, 2010). This means that participants in the process have an incentive to pursue—possibly through legal channels—any windfalls. (Herrington 2010, 22) notes:

When those products are patentable, universities' and students' contributions often become mixed, which leads to legal consequences for both students and their universities. Not only students but also professors and administrators who work with them would benefit from clear assessments of their legal relationships before entering them.

The courts have ruled that schools are not entitled to any portion of the works (the business itself or intellectual property developed for it) or any results (financial, reputational, etc.) of student businesses unless the students were employed by the university or college and such stipulations were included in the employment contract and/or the students were utilizing resources and equipment exclusive to the school, such as a strain of bacteria only the school has access to. Similarly, a professor has no claims to the ideas or intellectual property developed in a class unless the professor acted beyond his or her capacity as an instructor and truly contributed to the business, such as substantive financial investment or assuming a key role in the business, and/or the development of its intellectual property, such as contributing substantively and creatively to the creation of the intellectual property (Luppino, 2009). However, this leaves open the dilemma of students working in a team in the class.

According to the Uniform Partnership Act §101 (1994) a partnership is "an association of two or more persons to carry on as co-owners a business for profit." While intent to form a co-ownership association for profit is necessary to create a partnership, the parties do not need to have expressly intended to form a "partnership." Partnership statutes generally include a list of factors that will help to determine the existence of a partnership relationship, but there is no bright line test for making this determination. This means it is left to the courts to determine the issue on a case-by-case basis. For students on a team, this means that they may have co-ownership claims on any and all intellectual property developed as a result of a class unless they have an alternative option to pursue for the class. Universities that have established policies

and/or professors who implement policies in their classrooms can help to mitigate any potential problems, but there is no perfect solution.

While Luppino concludes that "it seems unlikely a court would find all of the necessary elements of partnership in a typical course project," there is a stronger claim of co-ownership in a course structured as a business planning class (Luppino, 2009; pg. 415). While by itself this can create long-term problems, such classes often face short-term dilemmas as well as the classes may be connected to competitions, either as part of the class itself or encourages students and student teams to participate in external competitions. These competitions usually have financial and in-kind rewards in addition to the notoriety of placing in the competition. The addition of these external prizes that go beyond a grade mean that the students must wrestle with the ownership issues such as dividing "profit" (the winnings from the competition) and reputational considerations like titles in the business and dealing with publicity for their business (Luppino, 2009).

Litton, Patterson & Little (2014) note, "the average undergraduate business student has no appreciation for the realities of the business organizations they may have formed." Professor Luppino's advice to universities is clear: "First and foremost, a university should inform students of what is at stake when they create innovations in course projects, advise them that significant rights and obligations may be involved from the outset and explain to them that they would be well served to get the advice of their own legal counsel in sorting through these matters" (Luppino, 2009; pg. 417). Luppino further recommends that students be given disclosures about the legal ramifications of their actions and decisions. They should be given information on how to find and engage legal counsel, particularly lawyers with relevant specialties and who may offer their services for free or at discounted rates.

Additionally, Litton, Patterson & Little (2014) suggest that universities consider four factors when forming students teams; 1) voluntariness; 2) profitability; 3) intent; and 4) timing. Voluntariness refers to whether students formed teams or the instructor formed the teams. Partnership formation requires voluntary formation; however, even if students are placed together, if they choose to work on an idea and pursue it beyond a class assignment, such an action indicates an agreement to voluntarily enter into a partnership with their teammates. Profitability is determined by the purpose of the course and the team. If the course requirement is completion of an assignment and not pursuit of profit, then for all of the teams in the class, most likely a partnership is not formed. However, intent refers to what students hope to accomplish. Again, if the goal of the team is the pursuit of a grade, then generally a partnership is not formed, but if the team seeks to earn profit, whether for a grade or for business, partnership status applies. Timing refers to when the project changes into actual pursuit for profit and the intent of the team. While these factors need to be considered, every university has differing policies and local, state, and federal laws could potentially impact this issue. As a result, no one approach seems to fit every situation.

The Three Approaches

There is not necessarily one "right" way to create IP and ownership policies. Rather, there are multiple ways that are dependent upon many factors. These approaches can range from putting the responsibility for co-ownership on the students (a hands-off approach) to having a detailed and involved approach to cover all legal bases (a structured approach). However, these are two endpoints of a continuum, and many schools, based on their comfort with entrepreneurship, concern about legal ramifications, the comfort level of the professors, and the

culture of the school and students, among other considerations, may fall somewhere in-between.

Presented are three approaches that three universities, Quinnipiac University, California State University, Chico, and Ohio Northern University use: one from each end of the continuum and one from the middle. Each approach was developed to meet the needs of our students while matching the culture of the entrepreneurship programs we have built. These are examples of how schools can approach building their own policies, explaining the justification the decisions made by the three universities so that others may understand the thinking and use these as a basis for crafting their own policies. Provided below is a summary of the three approaches, followed by an in-depth look at each school to better explain the reasoning behind it, the environment in which it has been applied, and any drawbacks to the approach.

A Hands-Off Approach: Quinnipiac University

At Quinnipiac University, when approaching how we wanted to address the topic of inadvertent partnerships (students working on a team together to build a business), we considered the following:

1. We did not want our students to focus so much on this topic that it would become a barrier to them sharing ideas. At the same time, we wanted them to understand the full legal implications of their actions in and out of class.
2. We wanted students to use ideas that they were serious about starting, rather than using fictional ideas. Passion leads to greater learning outcomes, and we wanted to facilitate this.
3. We wanted to encourage collaboration not only between students on a team, but also across teams. Ideas formed in isolation are rarely as high quality as those developed with input from other people.
4. Any document or policy we developed needed to be fair to all people involved: the student(s) who had the idea, any that helped develop the idea, and the professor of the class or staff member mentoring the team.
5. Asking people to sign non-disclosure agreements is not an effective way to protect an idea. First and foremost, they are incredibly difficult to enforce. Students are bound to discuss interesting ideas outside the classroom, which may include the team's ideas and the ideas of other teams. In addition, we have designed our program to encourage people to actively test and validate their assumptions about their business models, including verifying with their target market that they are in fact interested. This leads to further dissemination of the idea and additional people who would need to sign the document. Moreover, at least one class has a competition open to the public at the end of the semester with the ideas presented to a panel of judges and the public, while others encourage students to be involved in entrepreneurship events and competitions outside the school.
6. We wanted to avoid a Facebook-like scandal of people arguing that their contributions to a successful business were not given credit as a situation like that would be detrimental to the Entrepreneurship program, the University as a whole, the professor or staff member in charge, and team members acting in good faith.
7. Entrepreneurship professors and most staff members mentoring teams are rarely experts in legal matters or intellectual property, and asking professors to guide students through the complexities of the law and intellectual property regulations is doing both the professors and the students a disservice.

Our solution to these problems was two-fold. First, we developed a disclosure statement. This statement alerts the students to the challenge of who owns an idea in a team, using an abstracted example of a team of four students who develop a business idea in the class. After the class ends, one of the students continues to pursue the idea, developing it into a successful business. The other team members find out and, after complimenting their peer, note how the business was all of their idea, followed by asking about when they might see the profit from "their" idea.

After presenting the students with this scenario, we then offer them alternatives to sharing their idea in class if they are concerned that such a scenario might happen to them. The first option is that the student may choose to be a "free agent," a person who helps someone else develop his or her idea. The second option is that the student could develop a business they designed specifically for the course rather than sharing an idea they have been working on independently or as part of an independent team.

We conclude the disclosure statement with a notice to the student that the University supports and encourages students to work collaboratively. We point them to relevant University policies (of which Quinnipiac University has few). Finally, we note that this disclosure statement is not legal advice and that students are encouraged to seek their own legal counsel if they have questions or concerns.

During the first week of any class in which the students are creating a business, we introduce the students to the disclosure statement and have them read it as assigned reading. Students are encouraged to discuss the course policy and the disclosure statement with their teams and work out an arrangement that best suits them.

Students are also informed that no one will sign NDA or confidentiality agreements as part neither of the class nor in any outside events connected to the class such as business plan competitions or events, even ones run as part of the class.

Non-Exclusive Right to Pursue Ideas

In an entrepreneurship class, the students will inevitably hear the other teams' ideas, some of which have the potential to be highly successful ideas. However, once the class is over, the instructor has little to no ability to follow up with every single student for the foreseeable future (much less the indefinite future) to ensure that only those people who worked on an idea from the class are pursuing it. In addition, someone pursuing an idea usually further refines and evolves it, combines it with other ideas, or modifies it in some other way. We, as academics, instructors, and mentors, do not want to assume a policing role, having to determine whether or not an idea is sufficiently changed to be considered a "separate" idea, determining where an idea came from since a person may be exposed to an idea from multiple sources, and having to continually follow up with people to check whether or not they are following the class policy. In addition, this more closely maps to the U.S. patent system that allows—and indeed encourages—people to build upon the ideas of others.

To date, no student over the past five years, to our knowledge, has intentionally or unintentionally used another person or group's idea. What we have found, and many of our colleagues have also found, is that there are two major barriers to students starting businesses around ideas other people have created. The first is that students tend to view the amount of work and effort another team invested into a business as a huge obstacle to pursuing the idea themselves. The original team has already invested a semester of their time at a minimum, which includes meetings with experts, planning sessions, and countless discussions and debates over the span of months. To have to recreate even a portion of that is daunting.

The second barrier is that students are rarely as passionate about another team's ideas as they are about ideas they create themselves. The end result is that, no matter how interesting the idea appears to be, students are rarely motivated to claim that idea for themselves. The prospect of working on someone else's idea is a bit too similar to having to work for a company for those who are truly entrepreneurial, while at the same time needing to launch a business is too entrepreneurial for people who are more entrepreneurs. The end result is that students may talk

about what a great idea someone has, but rarely do they go any further than the conversation.

Equal Ownership of an Idea

By law, all people in a team who contribute to the development of a business idea and/or intellectual property (whether a patentable idea, copyrightable code, or some other protected material) are equal owners with non-exclusionary rights to pursue and use the idea. To reinforce this, we specifically choose to remain independent of any determination of who the originator of an idea was and what contribution each person made to it. Not only is such determination incredibly difficult, we also have no legal right to say that one person's contributions to the group were or were not significant and thereby affects ownership of the idea. For example, while one person may have an idea coming into the class, that idea gets shaped by the team over the course of the semester, sometimes radically. Determining who contributed which part of an idea is difficult enough; accounting for the fact that one or more ideas that were not included in the final design led to those ideas makes the situation even more complicated. As we want students to focus on contributing to the business's development rather than on documenting each individual's contributions, having a default policy of equal ownership makes the most sense.

Letting the students determine how they wish to divide ownership of a business or intellectual property at a pace of their choosing also reflects that the teams rarely know up front who will want to continue pursuing the idea after the end of the class, who will be in which leadership positions, who will contribute money, resources, knowledge, expertise, and time to the project, among many other considerations that could affect ownership. By freeing the students from determining this at the beginning when their idea is barely formed or requiring it at the end, we allow them to actively focus on the business and discuss the topic in a time and manner when it best suits their needs.

Ability to Adjust Ownership of an Idea

Not every team works on an idea created for the class; some work on an idea one or more people had and have worked on prior to the class. Not every team has everyone contribute equally, even if some or all of the people are going to continue working on the business after the class ends. For these instances among others, we allow teams to create their own ownership distributions without locking them into one fixed agreement. For example, we had one team with a person who had been working on his idea over the summer, doing an independent study even to help develop the idea. When he recruited his team, he added four individuals, but he was clear that he wanted to continue pursuing this idea as *his* idea, that the four other individuals would not have equity in the business. The four people were amenable to this, they put the agreement in writing, and the team had no issues relating to ownership. Another team revisited their ownership split halfway through the class when they realized that not all of the team was committed to pursuing the idea after the class finished. All of this was done independently of their instructors. Our students appreciate the flexibility and being treated as young professionals, and we as educators can direct them to experts when they have questions.

No Confidentiality Agreements/NDAs

Students are informed that they should be sharing their ideas with other people, but that they need to be smart about what they share. Such documents are near impossible to enforce,

which means that having people sign them without proper follow-up could leave the instructor or mentor in a tough situation where s/he must attempt to unravel whether or not a breach of the agreement has happened, and if so, how and to what extent, often based solely on hearsay. It may also leave the instructor legally liable if the instructor is issuing and requiring the completion of the forms. We point our students to such documents and we discuss when such documents are appropriate, and we also discuss appropriate sharing of their ideas, encouraging discussion with legal expertise if students seek more information.

Drawbacks

While the hands-off approach has many advantages, there are several downsides to the approach. The first is the onus it places on the instructor or mentor to ensure that teams are educated about potential legal implications to their businesses and have access to or are pointed in the direction of adequate legal counsel. This approach requires an active involvement of the faculty and staff up front, which means planned interactions early in the students' academic careers and/or classes to convey the necessary information.

One other challenge for this approach is that some students may be uncomfortable with the necessary conversations they must have with their teammates about how the wish to structure the equity in their idea. Without a clear policy in place, such students may not have the structure they need to make the best decisions possible for themselves or their businesses. This approach depends on students having the maturity and drive to seek their own guidance. At the other end, students gave the freedom to discuss co-ownership on their own time sometimes focus on the issue at inappropriate times, such as when the team is first forming. This can result in friction as the business develops and can detract attention from other more important components of the business. In addition, if the conversation happens when an instructor or mentor is not around, it is a lost opportunity for a teaching moment.

Hands-Off Approach Conclusion

By removing ourselves from the legal decisions relating to co-ownership and referring our students to subject matter experts, we prevent the faculty from being put in a position where, well-intended or not, they may be giving bad legal advice. Students get to experience the real-world decisions of forming teams and creating intellectual property and businesses with oversight, but they never feel locked into a position. In addition, faculties are not required to assume additional responsibilities as "idea police," allowing them to focus on working with the students and their ideas. This comes at the sacrifice of control over the conversations—both in when and how they occur.

An Evolving Approach: California State University, Chico

This narrative speaks to the approach of a single course and incubator program and does not represent a University or program-wide policy, except where noted, or the approaches of other instructors in the Entrepreneurship program. The course and incubator programs described are intended to support students who would like to understand what a real attempt to launch a business requires; given that intention, it is especially appropriate for this course and related incubator program to concern itself with these issues. This write-up identifies the approach as it exists at the time of this writing.

At California State University, Chico, our e-Incubator program's goal is to launch businesses online as directly and efficiently as possible, and there is a corresponding course which allows students to earn credit for learning similar materials. The e-Incubator program is available to students across the university and expects students to launch a business, the course is an elective in the entrepreneurship program and teaches students what is entailed in the process, offering them an opportunity to launch or not.

The nature of the e-Incubator and course is a focus on the "Lean Start-Up" approach, which favors a rapid launch to test business models. Our approach is, "Test the business model using customer development techniques, and adjust as needed." We determined that for many student businesses, students themselves are potential customers, and so the course was ideal for a "mastermind" format where students from the whole class give significant feedback to all other student projects in the class. Students would sit in the "Founder's Chair" and get peppered politely with questions by their peers. Right from the first instance of this course, students identified the mastermind approach as a very valuable element of the course.

Given the fast-paced nature of the course and the highly collaborative culture, several guiding principles emerged to ensure the program provides an effective experiential exercise to students and teams working toward launching businesses and testing business models. The following guiding principles emerged:

1. Acknowledge that there is an actual potential for ownership/partnership issues and take steps to avoid these issues by taking reasonable precautions using our best available understanding.
2. Encourage students to understand the implications associated with corporate structure, IP protection, and team structure reasonably early.
3. Encourage students to begin participating in the "mastermind" approach to sharing as early as possible; students should feel generally safe and secure while sharing; a feeling of camaraderie should emerge from the safety of the environment.
4. Impart a sense of seriousness about trying as many ideas as possible that students feel are good. In other words, if possible, don't hold back your best idea—bring out your best stuff and go for it.
5. Recommend that students invest in legal advice as appropriate. Our experience indicates that students who pay for legal advice actually feel more committed, and thus by having some "skin in the game," seem to have a sense of commitment and this translates into higher engagement.

As students encounter this program, they immediately recognize that the notions of collaborating and safeguarding IP appear to be at odds, and naturally raise these as issues. This further opens the door to additional concerns. These concerns can be summarized as:

The University Policy on student IP and how it affects student businesses and ideas; Protecting ideas in a collaborative class;
Handling equity (splitting, retaining, getting it back) while working on a team; Dealing with a desire to change ideas partway through the class;
Incorporating as a legal entity; and
Preparing for a pitch to the Accelerator Fund.

These concerns came up with regularity in each class and over the course of several semesters a common framework has emerged:

1. Present a set of overarching recommendations to provide context for the course;
2. Clarify the University Policy on student IP;
3. Clarify the classroom IP policy for intra-class understanding and agreement; and

4. Clarify the inter-student IP policy for managing teams and IP and encourage early understanding and decision making while remaining as flexible as possible.

OVERARCHING COURSE RECOMMENDATIONS

First and foremost, students are encouraged to decide what they want to get out of this course. Students are encouraged to develop ideas they are passionate about. Most students arrive with one or more ideas they are passionate about and want to pursue. There are other students who come in without an idea they are passionate about, but instead have a desire to learn the techniques for anticipated use at a later time. There are also students who have one or more ideas but still prefer to learn the techniques now and apply them later. The point is to encourage them to understand what they want to accomplish, what the ramifications are related to that purpose, and what they need to understand so they can take the appropriate steps. For example, a student who comes into the course without an idea and wants to join another student or team should be ready to accept that he or she is working on the project as a course effort, not as a business partner.

Students in the course have been exposed to corporate forms in a previous required course. We encourage students to immediately review materials covered in the prerequisite course since different corporate forms have different ownership, profit distribution and tax implications. This is a key area for hiring an attorney given its importance and level of complexity. Information, but not advice, is provided on the topic. Students should be able to get to the point where they can articulate and defend, in their own words, reasons for choosing a specific corporate form as a strategic element of their business model.

University Student IP Policy

For our students, one of the central concerns is not the equity split, but rather the ownership of IP generated during the formation process. We thus focus much of our co-ownership discussions around IP and provide two sources of information on this topic. First, students are directed to the actual university executive memorandum. Then, in class, a brief discussion covers important highlights.

In any ordinary class or function in which students enroll or participate, students are creating intellectual property they own. The value of this IP is undetermined and may of course be negligible. The primary means our university uses to establish an agreement relating to ownership of student IP is termed "extraordinary support." This level of support "is normally agreed upon in advance and set forth in a contract." The memorandum indicates that in the absence of a contract with the university, it is likely that extraordinary support does not exist. Students are told that if there are questions in their mind about ownership, they have an obligation to themselves and their team to resolve this to everyone's satisfaction. Students are responsible for clarifying the ownership question with a private attorney or university attorney dealing in such matters.

Classroom IP Policy

The course syllabus contains a few important statements. Neither has been tested in any legal process, but they do seem to give students a general sense that everyone intends to play fair. The first is a "No Partnership" statement, and the second is a 'Confidentiality'

statement. The "No Partnership" clause states that students come into the class and agree that while they will provide feedback on many other students' ideas presented in class, they agree that there is no implied partnership. The language is more expressive than that, but essentially they are relinquishing all rights to their contributions to other teams, much the way an independent contractor does in a professional client-contractor relationship. Given that they themselves receive feedback on their own project, there does seem to exist valuable consideration, which may be important when considering the enforceability of the language.

The "Confidentiality" clause is simply intended to put all students on notice that only the creators and/or owners of projects are free to discuss them outside of class. This clause is intended to ease students' minds rather than provide legal protection; indeed many students participate in competitions, surveying and interviewing of potential customers at some point in the semester, and at that point, the ideas are exposed to the general public. The clause specifies that we as a class respect that we are privileged in that we are receiving confidential information on other students' projects.

Neither of these approaches has been tested legally, so there is no precedent upon which to assume these are enforceable. However, they do serve to initiate the spirit of collegiality and support that we are trying to impart into the classroom, so they are important from that perspective. While the status of syllabi as legal contracts has been brought under scrutiny from time to time, it seems more prudent to include them than to omit them.

Inter-Student IP Policy

Over the course of a semester, interest in and expectations of the business idea can change dramatically. There are a few approaches that have been used here, and they are flexible so they can cover a range of situations. One approach is the use of a standard contract, another is the use of a "class project" contract, and the last is a new approach (or rather a new take on an existing concept of dynamic equity splits) we are experimenting with that allocates "potential" equity based on agreed upon factors and measured contribution.

In a case where student teams come into the class, have already agreed upon an equity Split, and completed some development on the project, they are encouraged to formalize the agreement by putting it into writing via a standard contract. Despite how straightforward this appears on the surface, problems with these occur fairly often. The main problem that occurs is that one member decides he is not interested in the project anymore at some point, for example when the semester ends and the project has not yet taken off. Early project enthusiasm can lead to somewhat irrational thinking, and in retrospect, students may indicate they 'over-shared' equity and wish they had been more thoughtful about the division.

A "class project" contract is basically used by founders when they enter the class unwilling to give an equity sharing deal due to the amount of work they have already done on the project. Some students turn out to be very willing to join projects like this. They acknowledge that they are joining a project that a student has worked on previously, and that equity is not being offered. This approach has been used several times. In each case, the participants have decided that a modest monetary stipend was appropriate and subsequently was offered, negotiated and settled upon. The reason a monetary stipend was offered was based on suggestions by an attorney that a contract should provide value to each party and that some amount of money would demonstrate this was done. In two cases, an equity position was offered at the end of the semester to one or more of those who originally joined without an equity position.

Finally, there are many cases where students are unsure of how to structure a deal and want maximum flexibility, having team members earn equity. For this situation, , under the direction of legal counsel, students consider several approaches, one popular one being based on the ideas outlined by Mike Moyers in his book Slicing Pie. In this arrangement, different types of contributions are defined and categorized, and valuations are assigned. Contributions in the category of work like accounting and marketing are typically given hourly dollar valuations, which students can figure out fairly easily, along with multiplier values based on whether payment is made or not. Contributions in the form of cash, property, or other tangible goods are given agreed upon values. For example, the group may decide that early cash contributions are actually worth 4X the amount of the original contribution to account for risk. These valuations can be negotiated and agreed upon ahead of time. Then, as the team moves ahead, it tracks the investments for various contributions. In this approach, each individual is earning future equity.

Drawbacks

Whereas the hands-off approach allows great flexibility in who can be on a team and how roles may be structured, this more structured approach needs things to be better defined in order to ensure that the proper IP and co-ownership policies are applied to the team. This goes beyond just knowing whether or not the team was pre-formed or if the team will accept other people as employees rather than co-founders. Outside members joining a team may impose additional policies to come into play; for example, a professor or staff member joining a team may cause certain clauses of the university policy to apply with regards to IP and revenue sharing with the university, and these would need to be identified prior to the business being worked on in the class or program.

In addition, as discussed in the hands-off approach, getting students to sign confidentiality clauses or including such in the syllabus may give students a false sense of security or put the instructor or mentor in a difficult situation if a student seeks for it to be enforced. As noted, the legality of such documentation has not yet been tested, and the legal implications to the school are thus not fully understood.

Finally, dynamic equity splits are difficult to master and tedious to track, and because these are students who typically have relatively little work experience or business knowledge – it is challenging for them to establish what constitutes good value to a startup. Education and mentoring cannot completely mitigate the biases and naivety they may bring to the discussions, possibly resulting in unbalanced weighting of contributions.

Evolving Approach Conclusion

This semi-structured approach allows students to join an existing idea if their goal is to learn the process of entrepreneurship rather than launching their own business. The approach also enables a student to continue to retain ownership if they bring the idea to the class and prefer this approach. Dynamic equity splits encourage students to discuss with their teams how they wish to handle co-ownership through the use of quantitative measures so that equity is not an "either you're in or you're out" approach. This enables teams to move ahead with flexibility and it addresses shortcomings of a formal equity split, and associated challenges that may arise.

A Structured Approach: Ohio Northern University

Ohio Northern University has developed its entrepreneurship program with the goal of embedding the entrepreneurial mindset (EM) in all students across campus. EM includes effective collaboration in a team setting; applying critical and creative thinking to ambiguous problems; constructing a customer- appropriate value proposition; persisting through and learning from failure; and effectively managing projects. EM is embedded in all business core courses and the Principles of Entrepreneurship (POE) course is required for engineering and pharmacy students with an increasing number of Arts & Science programs.

One of the primary methods of operationalizing these outcomes is ONU's version of an elevator pitch competition held each semester. POE and other courses require students to participate. These teams can choose to submit their product ideas for consideration by the Business and Engineering colleges to become year-long senior capstone projects and seniors are encouraged to launch these products to market. POE students approached faculty with regards to ownership of the ideas after hearing that several of the senior capstone projects were successfully launched. Inadvertently, ONU failed to consider ownership of the ideas by the original teams that developed them. Additionally, clear ownership was not established with the senior teams.

Complicating the matter was the need to negotiate ownership of the business when the original teams merged with the senior teams, which could be comprised of just engineering students, just business students, or an interdisciplinary team. This could take a partnership from the original five student team up to potentially seventeen student teams.

Faculty Concerns

1. The faculty needed to address the following concerns while maintaining EM outcomes:
2. Students needed to understand the legal issues of entrepreneurship without impeding creativity and innovation that is so vital to the entrepreneurial mindset.
3. Students needed to negotiate issues with others in ambiguous situations where the outcomes are not black and white and not all negotiations are successful.
4. Students needed to pursue taking their ideas to market knowing that there is a personal risk to the endeavor and that not all ideas are feasible or successful.
5. Encourage teamwork and communication skills with students within their disciplines as well as across disciplines.
6. Establish clear lines of ownership for the original teams to protect their ideas while allowing them to be open to new possible partnerships that might address their team weaknesses.
7. Avoid any legal complications due to public disclosure issues and equity positions among the teams. There needed to be frank and open discussions about ownership rights and the amount of equity position in the partnerships based on perceived contributions of the original or new team members.
8. Attempt to keep this as simple as possible given that the faculty members do not have the necessary legal backgrounds to address the many issues that might occur.

Student Concerns

In the POE sections, students prepare for an elevator pitch competition over a five-week period. They are required to develop a product idea that is creative, unique, innovative, feasible, and marketable. The excitement leading up to the competition encourages them to be motivated and committed to being successful beyond the need for a passing grade. This is particularly important for the non-Business students who have not considered the opportunities provided by an entrepreneurial career. Their passion and sense of ownership becomes even more evident as

they work through the process of taking a product to market and it dawns on them that there is potential for profits while understanding the risks and potential for failure. Discussions within the team move from "Is the idea creative, unique, innovative, feasible, and marketable?" to "How do we protect our assets?" They express concern about how much to pitch—whether they want to submit their idea for consideration as a senior capstone project or maintain it solely as their own. They inevitably move from perceiving this event as a mere class assignment to the true entrepreneurial potential it can become for them.

Handling Ownership and Disclosure

Given all of the concerns, ONU developed a non-disclosure form and a simple one-page ownership equity form (OEF). The non-disclosure form is employed only during the elevator pitch competition and signed by the judges. The form provides protection for the students' product ideas from basic public disclosure issues. It is explained to the judges that students may be taking their ideas to market and request that they do not ask questions that may impede patentability.

Leading up to the competition, IP and public disclosure issues are discussed with students in class. As teams, they explore the US Patent Office web site for prior art and complete internet searches to ensure that their idea is sufficiently unique from similar products to patent. Additionally, students are coached by faculty not to disclose any specifics that may impede patentability with other students or with the judges during the competition. While they are encouraged to produce prototypes, ONU discourages the use of CAD drawings or other detailed material, discussing the impact of this decision on their ability to patent their ideas.

The OEF was developed by a POE faculty who is a practicing attorney in the state of Ohio. Currently, it is only used in the POE course sections. It is very basic and written so that students understand what they are signing. The form consists of two options: Option 1 allows students to maintain all ownership rights to the product idea; and Option 2 allows students to relinquish all ownership rights. It is assumed that ownership is divided equitably among each team member unless agreed upon by the team differently.

Each team member is required to sign the form either maintaining or relinquishing their ownership rights. The form is distributed to the teams during class following a discussion on business formats, including what should be included in partnership agreements and basic articles of incorporation. Students are given time in class to negotiate with their team members about who wants to maintain or relinquish ownership, and, in some instances, they will negotiate equity positions. Recognizing that many of our students may not understand the ramifications of signing the form, we give the students additional time so that they may discuss the options with their parents/guardians.

If product ideas are considered for senior capstone projects, then the senior teams enter into negotiations with the original team that chose Option 1. The teams have two choices: one, negotiate a new partnership agreement with new equity positions established; or two, the senior teams can simply be considered as consultants. Negotiation for reimbursement of services if the original team takes the product to market then becomes necessary. It is also understood that not all students in the competition are interested in pursuing their ideas to market for any number of reasons and choose Option 2. However, some of these ideas are marketable and could still be considered for senior capstone projects. Option 2 allows the senior teams to pursue these opportunities unimpeded and under no obligation to the original team members.

Drawbacks

As noted before, one of the challenges with legal documents in a classroom or academic environment relating to co-ownership (including IP protection) issues is that they have not been tested in the courts. To what extent such documents would hold up, the university might be held liable, or the extent of language that must be provided is uncertain. That being said, the documents for ONU follow the structure of documents that would be provided to any person looking to start a business, so it seems reasonable to expect that the documents would be accepted in court.

At ONU, students are offered the option to decide whether they will retain or relinquish all ownership rights of their idea at the end of the POE class. Extrapolating this larger, structured approach encourages students to make the determination to what extent they wish to remain involved in the future of their business. However, students may not be equipped to handle such a decision at that point depending on their own personal process for making big decisions and whether or not they truly understand what they are being asked to decide. Even knowing that this decision is coming and given a week to consider the document, some students may feel rushed in their decision. Others may not like the binary states, instead preferring to have the option to leave, stay, or re-join the business later at their choosing.

Structured Approach Conclusion

Since instituting the use of the forms, ONU has not had any issues, but the form is untested and is continuing to be update to address new issues as they arise. Faculty appreciates the clear guidance, and many student teams are satisfied with the level of IP protection and clarity relating to co-ownership of the business that the forms provide. By treating the student teams essentially like newly forming businesses right from the start, ONU creates a professional environment and immerses them in the decisions businesses face. This comes at the expense of flexibility for the students and teams—decisions need to be made when the documents are offered to ensure that all teams are covered by the policy.

Factors to Consider When Building or Refining a University Policy

Each approach is different and comprehensive, and a person or group looking to implement or change their current co-ownership policy may be uncertain where to start when seeking to change their own university, program, or class's policy. Below, we outline the process all three schools used to change or create the policies discussed above.

At the university level, you first need to determine whether your university has a policy and whether students and faculty know about it. If there is a policy already in place, it needs to be actively disseminated to the students, faculty, and staff. Changes may be made after people are aware of the full extent of the policy as understanding the baseline is key to ensuring that any modifications are consistent with an approach fostering entrepreneurship, protecting the university, faculty, staff, and students, and staying true to Federal law. If there isn't a policy, all relevant stakeholders should discuss whether a policy should be developed at the university level and what it should cover. This process should then be repeated for increasingly smaller groups, such as for a School of Business, a major, and programs within the major. It is possible that several levels will not have a policy. At Quinnipiac, for example, there is little policy at the

university level and none at the school or program level. The policy is currently applied throughout the major and is being considered for raising it up to the university level.

Once a policy (or policies) is in place, each class's syllabus should reflect the policy and direct students to where the policy can be found. If the language is dense or beyond the scope of the students' current understanding, class time or materials need to be made available to help the students understand the policy. Students should be notified what the classroom policy is prior to having to disclose any information about their ideas and before any teams are formed. Instructors should consider how they wish to handle non-disclosure agreements, if at all, if such are not covered in the policy.

As a result of the policy, students should have a default process or state for their business. That is, the policy should not leave students in a void. At ONU and California State University, Chico, this is accomplished through the documents the students develop and sign. At Quinnipiac University, there is a blanket policy that clearly identifies students' relationships to their businesses in the event that the students do not create some other document. Thus, for any given group of students, students should negotiate a team contract or accept the default policy of the class. Prior to choosing an approach, they need to discuss how to handle under-, non-, and over-performers; equity ownership; and patent, trademark, and copyright ownership. Mentoring and class lessons can be provided to help facilitate this process.

CONCLUSION

Students gain academic value from collaborating with others in experiential learning activities in the classroom and extracurricular activities that may or may not create future intellectual property, such as patentable products (Herrington, 2010). But as discussed, it is important that students, faculty, staff, and the administration at universities have a clear understanding of the potential pitfalls. "When all parties to collaborative interactions are aware of the legal implications of their choices and make decisions that are consistent with the outcomes they desire, collaborative work can be beneficial to all" (Herrington, 2010, 49).

We have discussed here three different approaches: a hands-off approach that leaves the responsibility for ownership and IP protection in the hands of the students; an evolving approach that continually attempts to adapt to the co-ownership needs of its student teams; and a more structured approach with clear guidelines about establishing ownership of business ideas. All three approaches include education about ownership and IP protection issues, and all three allow students to make informed decisions about these topics. In addition, each approach also incorporates students receiving expert legal advice, through encouraging them to seek it out, through having such experts provide input into the design of the program, or both.

So far, none of the three approaches has been tested in a court of law, and indeed, that may very well be a sign that they are effective. Each approach attempts to prevent students from reaching the point where they feel that pursuing a lawsuit is the best (or only) option regarding their business idea. This is relatively uncharted territory since no major lawsuits have been filed against a school yet. However, the key word there is "yet"; with the growth of entrepreneurship programs across the country, there will come a time when such issues will arise. A school unprepared for that day may very well find itself implementing a set of policies that could quash the innovativeness and openness needed for a robust entrepreneurial community in its school. The goal of this paper is to begin a larger discussion of handling the legal side of entrepreneurship at all schools, allowing educators to create the best experiences for students and faculty alike.

REFERENCES

Herrington, T. 2010. *Student rights in their intellectual products. Intellectual property on campus: Students' rights and responsibilities. Southern* Illinois University Press.

Herrington, T. 2010. Legal effects of student collaborative efforts. *Intellectual property on campus: Students' rights and responsibilities***.** Southern Illinois University Press.

Litton, J., Patterson, R., & Little, A. (2014). Business organization legal issues arising from ideas generated by university students. *Southern Law Journal. Fall2014; 24*(2)267-280.

Luppino, A. 2009. *Fixin A Hole: Eliminating Ownership Uncertainties To Facilitate University Generated Innovation*, 78 UMKCLR 367

Luppino, A. 2012. *Some Approaches to Clarifying Ownership Issues for Student Inventors & Student Entrepreneurs*. Workshop presented at the United States Association for Small Business and Entrepreneurship, January 2012. Moyer, Mike, 2012. *Slicing Pie: Funding Your Company Without Funds. Version 2.3*. Kindle Edition. Retrieved from Amazon.

National Conference of Commissioners on Uniform State Laws. Uniform Partnership Act (1997). Copy right 1994, 1996, 1997 by National Conference of Commissioners on Uniform State Laws.

Siegel, D.S. & Phan, P. 2005. 'Analyzing the effectiveness of university technology transfer: Implication for entrepreneurship education', in Liebcap, G (Ed.), *Advances in the study of entrepreneurship, Innovation, and Economic Growth, Amsterdam*: Elsevier Science/JAI Press, pp. 1-38.

Silva, A., Henriques, E., & Caevalho, A. (2009). Creativity enhancement in a product development course through entrepreneurship learning and intellectual property awareness. *European Journal of Engineering Education, 34*(1), 63-75.

RELATIONSHIP BETWEEN STUDENTS' FAMILY REASONS AND THEIR INTENTION FOR ENTREPRENEURSHIP

Narendra C. Bhandari, Pace University

ABSTRACT

This paper studies if there is a relationship between (a) the students' rating of the three family related variables as important or unimportant and (b) their intention to start their own business; or their intention to work for someone else; after they have completed their undergraduate education, whether or not they have completed work for a degree.

Statistical testing of various responses using eighteen hypotheses found no such relationships.

The first nine statistical tests found no relationship between the students' rating of the three family related variables as important and unimportant (Q. 16, 17, and 18) and their intention to start their own business (Q15ab) once they have completed their undergraduate studies whether they have obtained a degree or not—data classified by male, female, and total components.

Similarly, the remaining nine statistical tests also found no relationship between the students' rating of the three family related variables as important and unimportant (Q. 16, 17, and 18) and their intention to work for someone else (Q15c) once they have completed their undergraduate studies whether they have obtained a degree or not—data classified by male, female, and total components.

This article is one of a kind in two particular ways. One, it presents (a) students' intention for starting a business and (b) students' intention for working for someone else in the same writing; and two, it is based on the data that were collected about ten years ago which has its own historical significance for comparison for future studies. Suggestions for improvement would be highly appreciated.

INTRODUCTION

Joseph Schumpeter (1934) was one of those few who pioneered and encouraged research into the various areas of entrepreneurship. Researching the role of one's family in starting and building a business was one of those fields that scholars and practitioners continue to investigate.

According to Bird et al. (2002), family business clearly played a critical role in the global prominence of the industrial age.

Parents are naturally motivated to build a business that they can pass on to their children. What a heritage to leave for their children!

The family experience in business has regularly helped new business creation and development process (e.g., Hundley 2006; Katz 1992; Krueger 1993; Matthews and Moser 1995, 1996). (Cited in Dyer, et al (2014).

A study by Robinson and Stubberud (2012) examines the proportions of men and women in a variety of 'European countries whose motivation for starting a business was based on a

family tradition for self-employment. The results show that, in several countries, more women than men state that this tradition was a motive for entrepreneurship.

Based on his empirical research, Hundley (2006) concluded that men with self-employed fathers and higher parental incomes are more likely to be self-employed. (cited in Dyer, et al (2014) Text is partly mine. See original articles.

A family often provides various kinds of critical support in the establishment and enhancement of a business. Family capital consists of human, social, and financial resources (Danes et al. 2009; Nahapiet & Ghoshal, 1998; Dyer 2006; cited in Dyer, et al.).

According to Fairlie and Robb (2008), cited by Dyer, et al. (2014), children of self-employed parents are three times more likely to become self-employed than children whose parents are not self-employed.

According to Sirmon and Hitt (2003), the collective financial capital, the "survivability capital," that a family can provide a new firm can empower it with a competitive advantage over those firms which don't have such an access. (Cited in Dyer, et al (2014).

Clearly, the role of family in entrepreneurship continues to be researched regularly and extensively. However, much more needs to be done in this important area.

PURPOSE OF RESEARCH

Purpose of Overall Research

The overall purpose of this research is to find if there is a statistical relationship between a number of independent variable and the Lubin School of Business students' intention to become entrepreneurs after they have completed their undergraduate education, whether or not they have completed education for a degree.

Two academic journal articles have already been published based on these data; in addition to an article in conference proceedings.

Purpose of this Particular Article

The objective of this particular article is limited to analyzing the selected variables included in the questionnaire that related to the "Relationship between students' family reasons and their intention for starting a business" (entrepreneurship). In particular, it studies the role of the following three micro variables in students' intention to start a new business; or to work for someone else; after they have completed their education; whether or not they have obtained a degree. These three variables are: (1) "family tradition," (2) "family encouragement," and (3) "family can provide monetary support." An extensive survey of literature did not reveal any such study done in the past that examined the duality of these intentions in the same investigation.

The relationship of these three micro variables to the students' intention for entrepreneurship, or to work for someone else, has been studied by testing a total of eighteen hypotheses as stated later in the article.

Limitations of Study: Nature of Student Population

This is a study of the Lubin students who were taking undergraduate business courses (accounting, information system, management, or marketing) at different class levels (first, second, third, or fourth year) during the study period. The 366 students chosen for the study were

all different individuals. This is not a study of the same individuals as they progressed from their first year of study through to their fourth year.

Limitations of Study: Statistical Testing Tool

Several statistical techniques, such as chi-square, regression analysis, and t-test, are available to test the validity of a set of data. All the same, only the chi-square technique has been used to test the validity of data used in this research, because the data gathered amply satisfy the following four primary assumptions of the Pearson's chi-squared test: (a) Independence of observations, (b) large enough expected cell counts, (c) randomness of data, and (d) sufficient sample size (Yates, Moore & McCabe, 1999).

Significance of the Study

This article is one of a kind that deals with students' family reasons both (a) To intend to become entrepreneurs and (b) To intend to work for someone else at the same time. Literature is replete with the studies that deal with the students' intention to become entrepreneurs. However, an extensive survey of literature has shown that not much has been written on the students' intention to work for someone else. Research articles dealing with both at the same time were found to be non-existent.

This article is based on the data that were collected about ten years ago. Its findings, therefore, may have their own temporal historical significance for scholars doing micro research in this important area.

Possible areas of improvement

While the research reported in this article is unique in its own way, the author, based on the reviewers' suggestions, if needed, would be glad to enhance its contents in the areas such as follows:

1. Additional computations and/or statistical tests.
2. Depth and breadth of survey of literature.
3. Additional analysis of data, such as breakdown of the total responses by individual class years (first year, second year, third year, and fourth year).

RESEARCH METHODOLOGY

Questionnaire

A 6-page questionnaire containing 91 questions (variables) was designed for this study for distribution among selected undergraduate students at the Lubin School of Business, Pace University New York during December 2004 – December 2005 period. The 91 variables were classified into the following eight groups:

1. Personal data: Gender, age group, marital status, father's employment, father's income, mother's employment, mother's income, (questions 1-7)
2. Educational data: Current student status, current year of study, degree program, major area of study in the broad discipline of business, grade point average, (questions 8-12)
3. Respondent's employment status, respondent's income, (questions 13-14)

4. Respondent's intention to start own business, work for a family business, work for someone else (Question 15)
5. Reasons for starting your own business (Table 1, questions 16-34; or 19 questions)
6. Reasons for not working for someone else (Table 2, questions 35-53; or 19 questions)
7. Reasons for not starting your own business (Table 3, questions 54-72; or 19 questions)
8. Reasons for working for someone else (Table 4, questions 73-91; or 19 questions)

I. Of the four tables included in the questionnaire, the students were asked to answer only two of them: Either, answer Tables 1 and 2, or, answer Tables 3 and 4. A note to this effect appeared at the bottom of each table. Thus in effect, it was only a 53-questions questionnaire (15+19+19).

II. Each of the 19 questions included in each table had 1-5 possible answers: (a) Unimportant, (b) Important-somewhat (c) Important-average, (d) Important-above average, and (e) Very important. Note: describe how they were grouped.

Collection and Selection of Data

Copies of the questionnaire were sent to the author's faculty colleagues who agreed to allow their students to participate in the study. The number of students' responses varied. Not every student who participated in the study answered all the 53 questions (total 91 questions minus 38 questions that had to be ignored because of the nature of the questionnaire).

A total of 435 questionnaires were returned by the students. Of these, 366 questionnaires were found usable for this particular article. The remaining 69 questionnaires were withdrawn for this study for the reasons such as follows:

1. Did not answer the question about class level.
2. Did not answer any question included in the four tables.
3. Answered only a single table or a combination of the tables inconsistent with the guidelines provided.

Exhibits Included

For readers' information and convenience, a total of seven exhibits are included in this article. Exhibit 1 presents a list of questions related to students' gender, class year, intention, and rating of family reasons as presented in the questionnaire. The other six exhibits deal with the students' rating of family variables and their intention to start their own business, or to work for someone else.

Exhibit 1: List of Questions

- Related to Students' Gender, Class Year, Intention, and Rating of Family Reasons; As Presented in the Research Questionnaire (With their Original Question Numbers)

Exhibit 2: Summary of Null Hypotheses Testing and Decisions

- Relationship between Students' rating of the "Family tradition" as important and unimportant (Q16) and their intention to start their own business (Q 15ab); Broken down by totals and gender

Exhibit 3: Summary of Null Hypotheses Testing and Decisions

- Relationship between Students' rating of the "Family encouragement" as important and unimportant (Q17) and their intention to start their own business (Q 15ab); Broken down by totals and gender

Exhibit 4: Summary of Null Hypotheses Testing and Decisions

- Relationship between Students' rating of the "Family can provide monetary support" as important and unimportant (Q18); and their intention to start their own business (Q 15ab); Broken down by totals and gender

Exhibit 5: Summary of Null Hypotheses Testing and Decisions

- Relationship between Student's rating of the "Family tradition" as important and unimportant (Q16) and their intention to work for someone else (Q 15c); Broken down by totals and gender

Exhibit 6: Summary of Null Hypotheses Testing and Decisions

- Relationship between Student's rating of the "Family encouragement" as important and unimportant (Q17) and their intention to work for someone else (Q 15c); Broken down by totals and gender

Exhibit 7: Summary of Null Hypotheses Testing and Decisions

- Relationship between Student's rating of the "Family can provide monetary support" as important and unimportant (Q18) and their intention to work for someone else (Q 15c); Broken down by totals and gender

NULL HYPOTHESES TESTING AND DECISIONS
HYPOTHESES 1-9
FAMILY VARIABLES & INTENTION FOR ENTREPRENEURSHIP

Hypotheses 1-3: Relationship between "Family Tradition" and Intention for Entrepreneurship

Null Hypothesis 1: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their Intention to start their own business (Q15ab).
(For the total of all males and females)

- Alternate hypothesis 1: There is such a statistical difference.

Null Hypothesis 2: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their Intention to start their own business (Q15ab).
(For the total of all males)

- Alternate hypothesis 2: There is such a statistical difference.

Null Hypothesis 3: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their Intention to start their own business (Q15ab).
(For the total of all Females)

- Alternate hypothesis 3: There is such a statistical difference.

Findings: Hypotheses 1, 2, and 3

A summary of the statistical analysis of data related to the three hypotheses stated above is presented in Exhibit 2. It also shows the decisions reached based on this analysis.

It accepts the Null Hypothesis 1 which states that (for the total of all males and females) there is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their intention to start their own business (Q15ab) once they have completed their undergraduate studies whether they have obtained a degree or not. It is so because the calculated value of X2, 0.7496, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Likewise it also accepts the Null Hypothesis 2 that deals with only the male component of the students. In this case the calculated value of X2, 0.2255, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Similarly, it also accepts the Null Hypothesis 3 that deals only with only the female component of the students In this case the calculated value of X2, 0.6649, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Hypotheses 4-6: Relationship between "Family Encouragement" and Intention for Entrepreneurship

Null Hypothesis 4: There is no relationship between Students' rating of the "family encouragement" as important or unimportant (Q 17) and their Intention to start their own business (Q15ab).
(For the total of all males and females)

- Alternate hypothesis 4: There is such a statistical difference.

Null Hypothesis 5: There is no relationship between Students' rating of the "family encouragement" as important or unimportant (Q 17) and their Intention to start their own business (Q15ab).
(For the total of all Males)

- Alternate hypothesis 5: There is such a statistical difference.

Null Hypothesis 6: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 17) and their Intention to start their own business (Q15ab). (For the total of all Females)

- Alternate hypothesis 6: There is such a statistical difference.

Findings: Hypotheses 4, 5, and 6

A summary of the statistical analysis of data related to the three hypotheses stated above is presented in Exhibit 3. It also shows the decisions reached based on this analysis

It accepts the Null Hypothesis 4 which states that (for the total of all males and females) there is no relationship between Students' rating of the "family encouragement" as important or unimportant (Q 17) and their intention to start their own business (Q15ab) once they have completed their undergraduate studies whether they have obtained a degree or not. It is so because the calculated value of X2, 0.7496, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Likewise it also accepts the Null Hypothesis 5 that deals with only the male component of the students. In this case the calculated value of X2, 0.0082, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Similarly, it also accepts the Null Hypothesis 6 that deals with only the female component of the students In this case the calculated value of X2, 0.0272, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Hypotheses 7-9: Relationship Between "Family Can Provide Monetary Support" and Intention for Entrepreneurship

Null Hypothesis 7: There is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their Intention to start their own business (Q15ab).
(For the total of all males and females)

- Alternate hypothesis 7: There is such a statistical difference.

Null Hypothesis 8: There is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their Intention to start their own business (Q15ab).
(For the total of all males)

- Alternate hypothesis 8: There is such a statistical difference.

Null Hypothesis 9: There is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their Intention to start their own business (Q15ab).
(For the total of all females)

- Alternate hypothesis 9: There is such a statistical difference.

Findings: Hypotheses 7, 8, and 9

A summary of the statistical analysis of data related to the three hypotheses stated above is presented in Exhibit 4. It also shows the decisions reached based on this analysis.

It accepts the Null Hypothesis 7 which states that (for the total of all males and females) there is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their intention to start their own business (Q15ab) once they have completed their undergraduate studies whether they have obtained a degree or not. It is so because the calculated value of X2, 0.4866, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Likewise it also accepts the Null Hypothesis 8 that deals with only the male component of the students. In this case the calculated value of X2, 1.2509, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Similarly, it also accepts the Null Hypothesis 9 that deals only with only the female component of the students In this case the calculated value of X2, 0.0636, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Summary of Statistical Findings (Q. 16, 17, and 18 vs. Q. 15ab)

All nine statistical tests found no relationship between the students' rating of the three family related variables as important and unimportant (Q. 16, 17, and 18) and their intention to start their own business (Q15ab) once they have completed their undergraduate studies whether they have obtained a degree or not—data classified by male, female, and total components.

NULL HYPOTHESES TESTING AND DECISIONS
HYPOTHESES 10-18
FAMILY VARIABLES & INTENTION TO WORK FOR SOMEONE ELSE

Hypotheses 10, 11, and12: Relationship between Family Tradition and Intention to Work for Someone Else

Null Hypothesis 10: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their Intention to work for someone else (Q15c).
(For the total of all males and females)

- Alternate hypothesis 10: There is such a statistical difference.

Null Hypothesis 11: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their Intention to work for someone else (Q15c).
(For the total of all Males)

- Alternate hypothesis 11: There is such a statistical difference.

Null Hypothesis 3: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their Intention to work for someone else (Q15c).
(For the total of all Females)

- Alternate hypothesis 12: There is such a statistical difference.

Findings: Hypotheses 10, 11, and 12

A summary of the statistical analysis of data related to the three hypotheses stated above is presented in Exhibit 5. It also shows the decisions reached based on this analysis.

It accepts the Null Hypothesis 10 which states that (for the total of all males and females) there is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 16) and their intention to work for someone else (Q15c) once they have completed their undergraduate studies whether they have obtained a degree or not. It is so because the calculated value of X2, 1.3090, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Likewise it also accepts the Null Hypothesis 11 that deals with only the male component

of the students. In this case the calculated value of X2, 0.4221, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Similarly, it also accepts the Null Hypothesis 12 that deals only with only the female component of the students. In this case the calculated value of X2, 1.0449, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Hypotheses 13, 14, 15: Relationship between Family Encouragement and Intention to Work for Someone Else

Null Hypothesis 13: There is no relationship between Students' rating of the "family encouragement" as important or unimportant (Q 17) and their Intention to work for someone else (Q15c).
(For the total of all males and females)

- Alternate hypothesis 13: There is such a statistical difference.

Null Hypothesis 14: There is no relationship between Students' rating of the "family encouragement" as important or unimportant (Q 17) and their Intention to work for someone else (Q15c).
(For the total of all Males)

- Alternate hypothesis 14: There is such a statistical difference.

Null Hypothesis 15: There is no relationship between Students' rating of the "family tradition" as important or unimportant (Q 17) and their Intention to work for someone else (Q15c).
(For the total of all Females)

- Alternate hypothesis 15: There is such a statistical difference.

Findings: Hypotheses 13, 14, and 15

A summary of the statistical analysis of data related to the three hypotheses stated above is presented in Exhibit 6. It also shows the decisions reached based on this analysis.

It accepts the Null Hypothesis 13 which states that (for the total of all males and females) there is no relationship between students' rating of the "family encouragement" as important or unimportant (Q 17) and their intention to work for someone else (Q15c) once they have completed their undergraduate studies whether they have obtained a degree or not. It is so because the calculated value of X2, 0.0539, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Likewise it also accepts the Null Hypothesis 14 that deals with only the male component of the students. In this case the calculated value of X2, 0.0154, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Similarly, it also accepts the Null Hypothesis 15 that deals with only the female component of the students In this case the calculated value of X2, 0.0456, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Hypotheses 16, 17, 18: Relationship Between "Family Can Provide Monetary Support" and Intention to Work for Someone Else

Null Hypothesis 16: There is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their Intention to work for someone else (Q15c).
(For the total of all males and females)

- Alternate hypothesis 16: There is such a statistical difference.

Null Hypothesis 17: There is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their Intention to work for someone else (Q15c).
(For the total of all males)

- Alternate hypothesis 17: There is such a statistical difference.

Null Hypothesis 18: There is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their Intention to work for someone else (Q15c).
(For the total of all females)

- Alternate hypothesis 18: There is such a statistical difference.

Findings: Hypotheses 16, 17, and 18

A summary of the statistical analysis of data related to the three hypotheses stated above is presented in Exhibit 7. It also shows the decisions reached based on this analysis.

It accepts the Null Hypothesis 16 which states that (for the total of all males and females) there is no relationship between Students' rating of the "family can provide monetary support" as important or unimportant (Q 18) and their intention to work for someone else (Q15c) once they have completed their undergraduate studies whether they have obtained a degree or not. It is so because the calculated value of X2, 0.8497, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Likewise it also accepts the Null Hypothesis 17 that deals with only the male component of the students. In this case the calculated value of X2, 2.3415, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Similarly, it also accepts the Null Hypothesis 18 that deals with only the female component of the students In this case the calculated value of X2, 0.0999, is smaller than the critical (tabulated) value of X2, 3.8410, with 1 degree of freedom, alpha=.05.

Summary of Statistical Findings (Q. 16, 17, and 18 vs. Q. 15c)

All nine statistical tests found no relationship between the students' rating of the three family related variables as important and unimportant (Q. 16, 17, and 18) and their intention to work for someone else (Q15c) once they have completed their undergraduate studies whether they have obtained a degree or not—data classified by male, female, and total components.

SURVEY OF LITERATURE

Several articles have been written about the role of family in entrepreneurial intention. Many of them are encourage such intention. While some other studies are not as supportive. Some of them even reflect negatively on the family experience.

Many students chose to work for someone else after completing their education; instead of choosing to become entrepreneurs. An extensive survey of literature using sources such as EBSCO did not turn up any previous studies concluding that any particular family variables were instrumental for people not to become entrepreneurs. It, however, can be surmised that if starting a business requires good amount of money, then the family not having such money may discourage its members not even think of starting a business.

On the other hand, several studies were found which directly dealt with why students and others want to work for someone else, instead of starting a business.

A survey of literature reflecting on these areas is presented below.

Family Role: Contributory to Entrepreneurship

In a study of university students from 14 countries, Engle, Schlaegel, and Delanoe (2011) concluded, among other things, that each of the three individual factors which comprise Ajzen's (1991) social norms significantly contribute to entrepreneurial intent across all countries: parental experience, culture, and gender egalitarianism.

A business with a family name and relationship generates more trust and respect among various stakeholders. Such advantages are often not available to businesses which don't have a family connection. (Seidel, Polzer, & Stewart, 2000; Stuart, Ha, and Hybels 1999; cited in Dyer, et al. (2014)).

The family capital has been quite successful in promoting the spread and enhancement of the Chinese family businesses (Fukuyama, 1995; Light 1972; Light and Gold 2008). (Cited in Dyer, et al (2014).

A survey of 180 undergraduate business school students, by Zampetakis, Gotsi, Andriopoulos, and Moustakis (2011), shows that the more creative young people consider themselves to be, the higher are their entrepreneurial intentions. Students' creativity also fully mediates the effect of family support for creativity on their entrepreneurial intention. Support for creativity in the university is found to have no effect on their creativity or on their entrepreneurial intention. Entrepreneurship course attendance moderates the effect of individual creativity on entrepreneurial intention. Done. Recheck first name, last name.

Qureshi, Naveed Ahmed, and Sarfraz (2011) studied a sample of 300 students of higher education institutes of Punjab. The results indicate that males and people having families with business exposure are more inclined to start their own business enterprise than females and students not having family business exposure. In addition, environmental factors do not significantly affect the entrepreneurial intentions among the business students of higher education institutes of Punjab.

Siqueira (2007) analyzed 2000 Census data relating to the Brazilian immigrants in the United States to examine the extent to which the human capital and the family social capital theories explain the probability of owning a business. She observed, among other things, that the presence of a co-habiting spouse, treated as an indicator of family social capital, enhances the probability that immigrants will own their own establishment.

In this study, Yeng Keat and Shuhymee (2012) examine motivators, challenges, etc. faced by 153 Universiti Utara Malaysia's undergraduate students to start up their new ventures.

They found, among others that gender and birth order affect one's entrepreneurial intention significantly. They also found that motivators such as extrinsic rewards and government assistance play a significant role in promoting entrepreneurship. On the other hand, financial and operational problems seemingly impede their effort to launch a new venture.

A survey of 180 undergraduate business school students, by Zampetakis, Gotsi, Andriopoulos, and Moustakis (2011), shows that the more creative young people consider themselves to be, the higher are their entrepreneurial intentions. Students' creativity also fully mediates the effect of family support for creativity on their entrepreneurial intention. Support for creativity in the university is found to have no effect on their creativity or on their entrepreneurial intention. Entrepreneurship course attendance moderates the effect of individual creativity on entrepreneurial intention.

A study of 447 undergraduate business students from three South African Universities done by Farrington, Venter, and Louw (2012) shows that the demographic variables, university attended, level of study, and ethnicity have a significant influence on the intentions of respondents to start their own businesses.

Family Role: No Effect on Entrepreneurship

The study by Göksel and Aydintan (2011) aims to reveal the effects of personality traits such as proactivity, internal locus of control, and the need for achievement as well as gender, business education, and family entrepreneurship, if any, on an individual's propensity to entrepreneurship, and the power of these effects. Carried out on 175 business administration students in Turkey, Ankara, the study has found, among other things, that personality traits do increase entrepreneurial intentions, which are affected more by internal locus of control than any other factor, but that gender, family business, and business education make no difference on an individual's propensity to entrepreneurship.

Kolvereid (1996) research applied the theory of planned behavior to predict employment status choice, defined as the intention to enter an occupation as a wage or salaried individual or as a self-employed one. The role of family background, sex, and prior self-employment experience was also investigated.

Using a sample of 128 Norwegian undergraduate business students, the findings strongly support the theory of planned behavior as applied to employment status choice intentions. Moreover, demographic characteristics were found to influence employment status choice intentions only indirectly through their effect on attitude, subjective norm, and perceived behavioral control.

Using a sample of 51 students belonging to second module postgraduate diploma in management (All India Management Association) program at Dayananda Sagar Institutions (DSI) campus, Bangalore, India, Kumara and Sahasranam (2009) found that the student's academic marks and father/ guardian's occupation have little influence on their entrepreneurial characteristics.

Akanbi and Ofoegbu (2011) examined the influence of some selected situational factors (perceived feasibility, perceived desirability, future unemployment, future family commitments and subjective norms) on entrepreneurial intentions among 392 undergraduate students in a private university in Oyo, Oyo State, Nigeria. The study revealed that the situational factors can have a significant effect or impact on an individual's entrepreneurial intentions.

In as study of undergraduate students at an American university, Bhandari's (2012) research rejected its first three hypotheses: (a) That there is no statistical difference between these students' fathers' employment--and these students' intention to starting a business; (b) That there is no statistical difference between these students' mothers' employment--and these students' intention to starting a business; (c) That there is no statistical difference between students' own employment--and their intention to starting a business. However, the study accepted the fourth hypothesis; that there is no statistical difference between students' gender--and their intention to starting a business once they have completed their education, whether or not they obtained a degree.

Family Role: Negative Effect on Entrepreneurship

Kets de Vries (1977, 1985) found that certain entrepreneurs may have problems developing positive relationships with family members; thus making it difficult for them to have access to family resources. As such, entrepreneurs often come from family backgrounds where neglect, desertion, poverty, and death are common themes. (Cited in Dyer, et al (2014).

Fatoki and Chmdoga (2011) investigated obstacles to youth entrepreneurial intention in South Africa. The results indicate that youths perceive lack of capital, lack of skill, lack of support, lack of market opportunities and risk as the main obstacles to entrepreneurial intention.

Fatoki (2010) investigates the entrepreneurial intention of South African graduates as well as the motivators and obstacles to entrepreneurial intention. 701 students in their final year of study participated in the survey. The results indicate that the entrepreneurial intention of South African students is very weak. In addition, the study identified five motivators of entrepreneurial intention. These are employment, autonomy, creativity, economic and capital. The obstacles to entrepreneurial intention of South African graduates are capital, skill, support, risk, economy and crime.

Factors Discouraging Entrepreneurship

Here are some of the studies that dealt with topics such as follows: (a) Why some people don't want to become entrepreneurs and (b) Why some people want to work for someone else. However, an extensive survey of literature did not produce any study that directly dealt with any specific family reasons for not starting a new business. While there are many studies that concluded that that the lack of capital prevented people from becoming entrepreneurs. But, they did not argue that it was the family's responsibility to provide such capital.

Based on a study of students at the University of Cordoba (Spain), Cañizares and García's (2010) suggest, among other things, that women are less prone to initiate entrepreneurial activity and that fear of failure is a major obstacle to setting up a company.

Ekore, and Okekeocha (2012) examined the role of psychological factors, especially fear of failure as an entrepreneur, among university graduates in Nigeria. Their findings confirmed core self-evaluation as influencing fear of entrepreneurship. Also, pre-entrepreneurial intention, attitude, and capacity significantly predicted fear of entrepreneurship.

Farsi, Arabiun, and Moradi (2012) present a study of entrepreneurial intentions among 56 nursing students in Zanjan Azad University. Their study found very low effect of entrepreneurial training program (ETP) on entrepreneurial intentions of nursing students. This might be due to factors such as greater chance of nursing students to be employed after graduation.

Kristiansen and Indarti (2004) conducted a study of Indonesian and Norwegian students. They found that the individual perceptions of self-efficacy and instrumental readiness are the variables that affect entrepreneurial intention most significantly. Age, gender and educational background have no statistically significant impact. Generally, the level of entrepreneurial intention is higher among Indonesian students. The lower level of entrepreneurial intention among Norwegian students is explained by the social status and economic remuneration of entrepreneurs in comparison with those enjoyed by employees in the Norwegian context.

Tkachev and Kolvereid (1999) investigated employment status choice intentions, defined as the decision to enter an occupation as a waged or salaried individual as opposed to a self-employed one. Hypotheses based on tracking models and the theory of planned behavior was tested on a sample of 512 Russian students from three different universities in St. Petersburg. The results showed that the theory of planned behavior, not tracking models or demographics, determined employment status choice intentions.

SUGGESTIONS FOR FUTURE RESEARCH

There is need for "simultaneous research" in the following areas of students' intention to become entrepreneurs:

1. Why students intend to become entrepreneurs; why they want to work for someone else, instead?
2. What family reasons discourage students to intend to become entrepreneurs, such as lack of mutual love and trust in the family; although the family has financial resources?

Exhibit 1: List of Questions

Related to Students' Gender, Class Year, Intention, and Rating of Family Reasons; As Presented in the Research Questionnaire (With their Original Question Numbers)

Q. 1: Sex (check one): (a) Male _____ (b) Female _____
Q. 9: What is your current year of education (check one):
(a) 1st year of undergraduate study _____; (b) 2nd year of undergraduate study _____;
(c) 3rd year of undergraduate study _____; (d) 4th year of undergraduate study _____;
(e) 1st year of graduate study _____; (f) 2nd year of graduate study_____
Q. 15: After you have finished your education (whether you have attained a degree or not), what do you **intend** to do (check one):
a. Start my own business _____;
b. Work for a business owned by an immediate family member (spouse, parent, brother and/or sister) _____;
c. Work for someone else _____
Q. 16, 17, and 18: Students' Rating of the Family Reasons as Unimportant or Important for their intention for starting their business.

Table 1

	Un-important (a)	Important (somewhat) (b)	Important (average) (c)	Important (above average) (d)	Very Important (e)
Family Reasons for starting a Business					
16. Family tradition	_____	_____	_____	_____	_____
17. Family encouragement	_____	_____	_____	_____	_____
18. Family can provide monetary support	_____	_____	_____	_____	_____

Exhibit 2: Summary of Null Hypotheses Testing and Decisions

Relationship between Students' rating of the "Family tradition" as important and unimportant (Q16) and their intention to start their own business (Q 15ab); Broken down by totals and gender

Table 2

Null Hypothesis	Total No. of Respondents	Respondents who want to be Entrepreneurs	X^2 Calculated Value	X^2 Critical Value	Degree of Freedom, a=.05	Decision on Null Hypothesis
Null Hypothesis : There is no relationship between Students' rating of the "Family tradition" as important or unimportant (Q 16) and their Intention to start their own business (Q15ab) (Total of all)	184	117	0.7496	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family tradition" as important or unimportant (Q 16) and their Intention to start their own business (Q15ab) (Total of all Males)	112	73	0.2255	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family tradition" as important or unimportant (Q 16) and their Intention to start their own business (Q15ab) (Total of all Females)	72	44	0.6649	3.8410	1	Accept

Exhibit 3: Summary of Null Hypotheses Testing and Decisions

Relationship between Students' rating of the "Family encouragement" as important and unimportant (Q17) and their intention to start their own business (Q 15ab); Broken down by totals and gender

Table 3

Null Hypothesis	Total No. of Respondents	Respondents who want to be Entrepreneurs	X^2 Calculated Value	X^2 Critical Value	Degree of Freedom, a=.05	Decision on Null Hypothesis
Null Hypothesis : There is no relationship between Students' rating of the "Family encouragement" as important or unimportant (Q 17) and their Intention to start their own business (Q15ab) (Total of all)	187	120	0.7496	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family encouragement" as important or unimportant (Q 17) and their Intention to start their own business (Q15ab) (Total of all Males)	112	73	0.0082	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family encouragement" as important or unimportant (Q 17) and their Intention to start their own business (Q15ab) (Total of all Females)	75	47	0.0272	3.8410	1	Accept

Exhibit 4: Summary of Null Hypotheses Testing and Decisions

Relationship between Students' rating of the "Family can provide monetary support" as important and unimportant (Q18); and their intention to start their own business (Q 15ab); Broken down by totals and gender

Table 4

Null Hypothesis	Total No. of Respondents	Respondents who want to be Entrepreneurs	X^2 Calculated Value	X^2 Critical Value	Degree of Freedom, a=.01	Decision on Null Hypothesis
Null Hypothesis : There is no relationship between Students' rating of the "Family can provide monetary support" as important or unimportant (Q 18) and their Intention to start their own business (Q15ab) (Total of all)	184	117	0.4866	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family can provide monetary support" as important or unimportant (Q 18) and their Intention to start their own business (Q15ab) (Total of all Males)	112	73	1.2509	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family can provide monetary support" as important or unimportant (Q 18) and their Intention to start their own business (Q15ab) (Total of all Females)	72	44	0.0636	3.8410	1	Accept

Exhibit 5: Summary of Null Hypotheses Testing and Decisions

Relationship between Student's rating of the "Family tradition" as important and unimportant (Q16) and their intention to work for someone else (Q 15c); Broken down by totals and gender

Table 5

Null Hypothesis	Total No. of Respondents	Respondents who want to be Entrepreneurs	X^2 Calculated Value	X^2 Critical Value	Degree of Freedom, a=.05	Decision on Null Hypothesis
Null Hypothesis : There is no relationship between Students' rating of the "Family tradition" as important or unimportant (Q 16) and their Intention to work for someone else (Q15c) (Total of all)	184	67	1.3090	3.8410	1	Accept

Null Hypothesis : There is no relationship between Students' rating of the "Family tradition" as important or unimportant (Q 16) and their Intention to work for someone else (Q15c) (Total of all Males)	112	39	0.4221	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family tradition" as important or unimportant (Q 16) and their Intention to work for someone else (Q15c) (Total of all Females)	72	28	1.0449	3.8410	1	Accept

Exhibit 6: Summary of Null Hypotheses Testing and Decisions

Relationship between Student's rating of the "Family encouragement" as important and unimportant (Q17) and their intention to work for someone else (Q 15c); Broken down by totals and gender

Table 6

Null Hypothesis	Total No. of Respondents	Respondents who want to be Entrepreneurs	X^2 Calculated Value	X^2 Critical Value	Degree of Freedom, a=.05	Decision on Null Hypothesis
Null Hypothesis : There is no relationship between Students' rating of the "Family encouragement" as important or unimportant (Q 17) and their Intention to work for someone else (Q15c) (Total of all)	187	67	0.0539	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family encouragement" as important or unimportant (Q 17) and their Intention to work for someone else (Q15c) (Total of all Males)	112	39	0.0154	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family encouragement" as important or unimportant (Q 17) and their Intention to work for someone else (Q15c) (Total of all Females)	75	28	0.0456	3.8410	1	Accept

Exhibit 7: Summary of Null Hypotheses Testing and Decisions

Relationship between Student's rating of the "Family can provide monetary support" as important and unimportant (Q18) and their intention to work for someone else (Q 15c); Broken down by totals and gender

Table 7

Null Hypothesis	Total No. of Respondents	Respondents who want to be Entrepreneurs	X^2 Calculated Value	X^2 Critical Value	Degree of Freedom, a=.01	Decision on Null Hypothesis
Null Hypothesis : There is no relationship between Students' rating of the "Family can provide monetary support" as important or unimportant (Q 18) and their Intention to work for someone else (Q15c) (Total of all)	184	67	0.8497	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family can provide monetary support" as important or unimportant (Q 18) and their Intention to work for someone else (Q15c) (Total of all Males)	112	39	2.3415	3.8410	1	Accept
Null Hypothesis : There is no relationship between Students' rating of the "Family can provide monetary support" as important or unimportant (Q 18) and their Intention to work for someone else (Q15c) (Total of all Females)	72	28	0.0999	3.8410	1	Accept

ACKNOWLEDGEMENTS

The author is very thankful to his faculty colleagues who helped collect students' responses for this research; to Dr. Vasantha Kumar Bhat, Professor of Management Science, Pace University, who helped in designing this questionnaire and tabulating the data collected; and to Prof. Janice K. Winch, Professor of Management Science, Pace University, who helped in the statistical testing of these data. Author is very thankful to Ms. Anjali Jain, Mr. Sungsik Choi, and Mr. Alex Rodriguez for their for his research assistance; and to Pace University for making their services available to the author. The author appreciates the anonymous reviewers of this article for their suggestions to help improve its contents and quality.

While citing other scholars' writings in this article, care has been taken to present their findings as accurately as possible by often using their own words—subject to the limitations of this article.

REFERENCES

Akanbi, Paul Ayobamil; Ofoegbu, Onyema E. (2011). "An Examination of the Influence of Some Selected Situational Factors on Entrepreneurial Intentions in Nigeria," *International Business & Management*, 2011, Vol. 3 Issue 1, pp.189-196. 8p.

Aslam, Tahseen Mahmood; Awan, Ahmed Sher; Khan, Tariq Mahmood. "An Empirical study of Family back ground and Entrepreneurship as Career selection among University Students of Turkey and Pakistan," *International Journal of Business & Social Science*, August 2012, Vol. 3 Issue 15, pp. 118-123, 6p.

Bhandari, Narendra C. (2012). "Relationship between Students' Gender, Their Own Employment, Their Parents' Employment, and the Students' Intention For Entrepreneurship," *Journal of Entrepreneurship Education*, 2012, Vol. 15, pp. 133-144. 12p.

Boissin, Jean-Pierre; Branchet, Bénédicte; Emin, Sandrine; Herbert, James I.(2009). "Students and Entrepreneurship: A Comparative Study of France and the United States," *Journal of Small Business & Entrepreneurship*, 2009, Vol. 22 Issue 2, pp. 101-122. 22p.

Brown, Justin T.; Kant, Andrew C. (2009). "Creating bioentrepreneurs: How graduate student organisations foster science entrepreneurship," *Journal of Commercial Biotechnology*, April 2009, Vol. 15 Issue 2, pp. 125-135. 11p.

Brown, III, Ulysses J.; Beale, Ruby L.; White-Johnson, Sharon (2011). "Perceptions Of Entrepreneurial Intentions & Risk Propensity: Self Reliance And Self Efficacy In College Students To Encourage Knowledge," *Review of Business Research*, 2011, Vol. 11 Issue 5, pp. 169-177. 9p.

Brush, Candida G.; Duhaime, Irene M.; Gartner, William B.; Stewart, Alex; Katz, Jerome A.; Hitt, Michael A.; Alvarez, Sharon A.; Meyer, G. Dale; Venkataraman, S. (2003). "Doctoral Education in the Field of Entrepreneurship," *Journal of Management*, June 2003, Vol. 29 Issue 3, pp. 309-331. 23p.

Cañizares, Sandra Ma Sánchez; García, Fernando J. Fuentes (2010). "Gender differences in entrepreneurial attitudes," *Equality, Diversity & Inclusion*, 2010, Vol. 29 Issue 8, pp. 766-786. 21p.

Cristian A. Muñoz; Mosey, Simon; Binks, Martin (2011). "Developing Opportunity-Identification Capabilities in the Classroom: Visual Evidence for Changing Mental Frames," *Academy of Management Learning & Education*, June 2011, Vol. 10 Issue 2, pp. 277-295. 19p.

De Jorge-Moreno, Justo; Castillo, Leopoldo Laborda; Triguero, María Sanz (2012). "The effect of business and economics education programs on students' entrepreneurial intention," *European Journal of Training & Development*, 2012, Vol. 36 Issue 4, pp. 409-425. 17p.

Ekore, John O.; Okekeocha, Ogochukwu C. (2012). "Fear of Entrepreneurship among University Graduates: A Psychological Analysis," *International Journal of Management*, June 2012, Vol. 29 Issue 2, pp. 515-524. 10p.

Ellen, A. Drost (2010). "Entrepreneurial Intentions of Business Students in Finland: Implications for Education," *Advances in Management*, July 2010, Vol. 3 Issue 7, pp. 28-35. 8p.

Engle, Robert L.; Schlaegel, Christopher; Delanoe, Servane (2011). "The Role of Social Influence, Culture, and Gender on Entrepreneurial Intent," *Journal of Small Business & Entrepreneurship*, 2011, Vol. 24 Issue 4, pp. 471-492. 22p.

Engle, Robert L.; Schlaegel, Christopher; Dimitriadi, Nikolay (2011). "Institutions And Entrepreneurial Intent:: A Cross-Country Study," *Journal of Developmental Entrepreneurship*, June 2011, Vol. 16 Issue 2, pp. 227-250. 24p.

Farrington, S. M.; Venter, D. J. L.; Louw, M. J. (2012). "Entrepreneurial intentions: Demographic perspectives of South African business students," *South African Journal of Business Management*, September 2012, Vol. 43 Issue 3, pp. 41-49. 9p.

Farsi, Jahangir Yadollahi; Arabiun, Abolghasem; Moradi, Mahmood (2012). "The Impact of Opportunity Recognition Skills Training on Entrepreneurial Intention of Female Nursing Students," *Journal of Knowledge Management, Economics & Information Technology*, August 2012, Vol. 2 Issue 4, p108-123. 17p.

Fatoki, Olawale; Chmdoga, Lynety (2011). "An Investigation into the Obstacles to Youth Entrepreneurship in South Africa," *International Business Research*, April 2011, Vol. 4 Issue 2, pp. 161-169. 9p.

Fatoki, Olawale Olufunso (2010). "Graduate Entrepreneurial Intention in South Africa: Motivations and Obstacles," *International Journal of Business & Management*, September 2010, Vol. 5 Issue 9, pp. 87-98. 12p.

Fayolle, Alain; Gailly, Benoît; Lassas-Clerc, Narjisse (2006). "Effect and Counter-effect of Entrepreneurship Education and Social Context on Student's Intentions," Estudios de Economía Aplicada. August 2006, Vol. 24 Issue 2, pp. 509-523. 15p.

Göksel, Aykut; Aydintan, Belsin (2011). "Gender, Business Education, Family Background and Personal Traits; a Multi-Dimensional Analysis of Their Effects on Entrepreneurial Propensity: Findings from Turkey," *International Journal of Business & Social Science*, 2011, Vol. 2 Issue 13, pp. 35-48. 14p.

Hmieleski, Keith M.; Corbett, Andrew C. (2006). "Proclivity for Improvisation as a Predictor of Entrepreneurial Intentions," *Journal of Small Business Management*, January 2006, Vol. 44 Issue 1, pp. 45-63. 19p.

Kolvereid, Lars. (1996). "Prediction of employment status choice intentions," Entrepreneurship Theory & Practice. Fall 1996, Vol. 21 Issue 1, p47-57.

Krueger Jr., Norris F.; Reilly, Michael D. Journal of Business Venturing. Sep-Nov2000, Vol. 15 Issue 5/6, p411. 22p.

Kumara, S. A. Vasantha; Sahasranam (2009). "Entrepreneurial Characteristics Among Business Management Students: An Empirical Study," C. *ICFAI Journal of Management Research*, June 2009, Vol. 8 Issue 6, pp. 7-29. 23p.

Samantha Kumara (2012). "Undergraduates' Intention Towards Entrepreneurship:: Empirical Evidence From Sri Lanka," *P. A. P. Journal of Enterprising Culture*, March 2012, Vol. 20 Issue 1, pp. 105-118. 14p. First name, last name?

Kristiansen, Stein; Indarti, Nurul (2004). "Entrepreneurial Intention Among Indonesian And Norwegian Students," *Journal of Enterprising Culture*, March 2004, Vol. 12 Issue 1, pp.55-78. 24p.

Kuehn, Kermit W. (2008). "Entrepreneurial Intentions Research: Implications For Entrepreneurship Education," *Journal of Entrepreneurship Education*, 2008, Vol. 11, pp. 87-98. 12p.

Kumara, S. A. Vasantha; Kumar, Y. Vijaya (2011). "Entrepreneurial Propensity and Its Relation to Self-Employment Intentions Among Engineering and Business Students: A Comparative Case Study," *IUP Journal of Entrepreneurship Development*, September 2011, Vol. 8 Issue 3, pp. 60-76. 17p.

Kwok-Yiu Leung; Choi-Tung Lo; Hongyi Sun; Kam-Fai Wong (2012). "Factors Influencing Engineering Students' Intention To Participate In On-Campus Entrepreneurial Activities," *Journal of Entrepreneurship Education*, 2012, Vol. 15, pp.1-19. 19p.

Lazear, Edward P (2004). "Balanced Skills and Entrepreneurship," *American Economic Review*, May 2004, Vol. 94 Issue 2, pp. 208-211. 4p.

Leppel, Karen (1984). "The Academic Performance of Returning and Continuing College Students: An Economic Analysis," Journal of Economic Education. Winter84, Vol. 15 Issue 1, p46-54. 9p.

Levenburg, Nancy M.; Lane, Paul M.; Schwarz, Thomas V. (2006). "Interdisciplinary Dimensions in Entrepreneurship," *Journal of Education for Business*, May/June 2006, Vol. 81 Issue 5, pp. 275-281. 7p.

Liñán, Francisco; Chen, Yi-Wen (2009). "Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions," Entrepreneurship: Theory & Practice. May2009, Vol. 33 Issue 3, p593-617. 25p.

Linan, Francisco; Urbano, David; Guerrero, Maribel (2011). "Regional variations in entrepreneurial cognitions: Start-up intentions of university students in Spain," *Entrepreneurship & Regional Development*, April 2011, Vol. 23 Issue 3/4, pp. 187-215. 29p.

Lüthje, C.; Franke, N. (2003). "The 'making' of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT," *R&D Management*, March 2003, Vol. 33 Issue 2, p. 135. 13p.

Moriano, Juan A.; Gorgievski, Marjan; Laguna, Mariola; Stephan, Ute; Zarafshani, Kiumars (2012). "A Cross-Cultural Approach to Understanding Entrepreneurial Intention," *Journal of Career Development* (Sage Publications Inc.), March 2012, Vol. 39 Issue 2, pp.162-185. 24p.

Müller, Susan (2008). "Encouraging Future Entrepreneurs: The Effect of Entrepreneurship Course Characteristics on Entrepreneurial Intention," University of St. Gallen, Business Dissertations. 2008, pp. 1-291. 289p.

Muofhe, Nnditsheni J.; du Toit, Willem F. (2011). "Entrepreneurial education's and entrepreneurial role models' influence on career choice," *South African Journal of Human Resource Management*, March 2011, Vol. 9 Issue 1, pp. 243-257. 15p.

Nunn, Leslie E.; Ehlen, Craig R. (2001). "Developing Curricula With A Major Emphasis In Entrepreneurship - An Accounting Perspective," *Journal of Applied Business Research*, Fall 2001, Vol. 17 Issue 4, p. 1.

Peterman, Nicole E.; Kennedy, Jessica (2003). "Enterprise Education: Influencing Students' Perceptions of Entrepreneurship," *Entrepreneurship: Theory & Practice*, Winter 2003, Vol. 28 Issue 2, pp. 129-144. 16p.

Prieto, Leon C. (2011). "The Influence of Proactive Personality On Social Entrepreneurial Intentions Among African-American And Hispanic Undergraduate Students: The Moderating Role Of Hope," *Academy of Entrepreneurship Journal*, 2011, Vol. 17 Issue 2, pp. 77-96. 20p.

Emmeline de Pillis; Kathleen K. Reardon (2007). "The influence of personality traits and persuasive messages on entrepreneurial intention: A cross-cultural comparison," Career Development International, 2007, Vol. 12, Issue 4, p382-396. 15p.

Qureshi, Muhammad Jawad Hasan; Naveed Ahmed; Khan, M. Sarfraz (2011). "Entrepreneurial Intentions Among the Business Students of Higher Education Institutes of Punjab," *Interdisciplinary Journal of Contemporary Research in Business*, January 2011, Vol. 2 Issue 9, pp. 206-220. 15p.

Rasli, Amran Md; Khan, Saif ur Rehman; Malekifar, Shaghayegh; Jabeen, Samrena (2013). "Factors Affecting Entrepreneurial Intention Among Graduate Students of Universiti Teknologi Malaysia," *International Journal of Business & Social Science*, February 2013, Vol. 4 Issue 2, pp. 182-188. 7p.

Ramayah, T.; Ahmad, Noor Hazlina; Char Fei, Theresa Ho. (2012). "Entrepreneur Education: Does Prior Experience Matter?" *Journal of Entrepreneurship Education*, 2012, Vol. 15, pp. 65-81. 17p.

Sánchez, José C. (2013). "The Impact of an Entrepreneurship Education Program on Entrepreneurial Competencies and Intention," *Journal of Small Business Management*, July 2013, Vol. 51 Issue 3, pp. 447-465. 19p.

Schlaegel, Christopher; He, Xiaohong; Engle, Robert L. (2013). "The Direct and Indirect Influences of National Culture on Entrepreneurial Intentions: A Fourteen Nation Study," *International Journal of Management*, June 2013 Part 2, Vol. 31 Issue 2, pp. 597-609. 13p.

Siqueira, Ana Cristina O. (2007). "Entrepreneurship and Ethnicity: The Role Of Human Capital and Family Social Capital," *Journal of Developmental Entrepreneurship*, March 2007, Vol. 12 Issue 1, pp. 31-46. 16p.

Soetanto, D. P.; Pribadi, H.; Widyadana, G. A. (2010). "Determinant Factors of Entrepreneurial Intention Among University Students," *IUP Journal of Entrepreneurship Development*, March 2010, Vol. 7 Issue 1/2, pp. 23-37. 15p.

Souitaris, Vangelis; Zerbinati, Stefania; Al-Laham, Andreas (2007). "Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources," *Journal of Business Venturing*, July 2007, Vol. 22 Issue 4, pp. 566-591. 26p.

Swinney, Jane L.; Runyan, Rodney C.; Huddleston, Patricia (2006). "Differences In Reported Firm Performance By Gender: Does Industry Matter?" *Journal of Developmental Entrepreneurship*, June 2006, Vol. 11 Issue 2, pp. 99-115. 17p.

Van der Sluis, Justin; van Praag, Mirjam; Vijverberg, Wim (2002). "Education And Entrepreneurship Selection And Performance: A Review Of The Empirical Literature," *Journal of Economic Surveys*, December 2008, Vol. 22 Issue 5, pp. 795-841. 47p.

Shepherd, Dean A 2004). "Educating Entrepreneurship Students About Emotion and Learning From Failure," Academy of Management Learning & Education. Sep2004, Vol. 3 Issue 3, p274-287. 14p.

Tegtmeier, Silke (2006). "Explaining individual entrepreneurial intentions: The theory of planned behavior as a social- psychological model in the context of entrepreneurship," NeuroPsychoEconomics Conference Proceedings. 2006, Vol. 1 Issue 1, p22-22. 1p.

Tegtmeier, Silke 2012). "Empirical Implications For Promoting Students' Entrepreneurial Intentions," *Journal of Enterprising Culture*, June 2012, Vol. 20 Issue 2, pp. 151-169. 19p.

Tkachev, Alexei; Kolvereid, Lars (1999). "Self-employment intentions among Russian students," *Entrepreneurship & Regional Development*, July-September 1999, Vol. 11 Issue 3, pp. 269-280. 12p.

Uddin, Md Reaz; Kanti Bose, Tarun (2012). "Determinants of Entrepreneurial Intention of Business Students in Bangladesh," *International Journal of Business & Management*, December 2012, Vol. 7 Issue 24, pp. 128-137. 10p.

Venesaar, Urve; Kolbre, Ene; Piliste, Toomas (2006). "Students' Attitudes and Intentions toward Entrepreneurship at Tallinn University of Technology," Working Papers in Economics, 2006, Vol. 21 Issue 149-154, pp. 97-114. 18p.

Volery, Thierry; Müller, Susan; Oser, Fritz; Naepflin, Catherine; Rey, Nuria (2013). "The Impact of Entrepreneurship Education on Human Capital at Upper-Secondary Level," *Journal of Small Business Management*, July 2013, Vol. 51 Issue 3, pp. 429-446. 18p.

Walter, Sascha G.; Dohse, Dirk (2012). "Why mode and regional context matter for entrepreneurship education," *Entrepreneurship & Regional Development*, December 2012, Vol. 24 Issue 9/10, pp. 807-835. 29p.

Wilson, Fiona; Kickul, Jill; Marlino, Deborah (2007). "Gender, Entrepreneurial Self-Efficacy, and Entrepreneurial Career Intentions: Implications for Entrepreneurship Education," *Entrepreneurship: Theory & Practice*, May 2007, Vol. 31 Issue 3, pp. 387-406. 20p.

Wilson, Fiona; Kickul, Jill; Marlino, Deborah; Barbosa, Saulo D.; Griffiths, Mark D. (2009). "An Analysis of the Role of Gender and Self-Efficacy in Developing Female Entrepreneurial Interest and Behavior," *Journal of Developmental Entrepreneurship*, June 2009, Vol. 14 Issue 2, pp.105-119. 15p.

Yeng Keat, Ooi; Shuhymee, Ahmad (2012). "A Study among University Students in Business Start-Ups in Malaysia: Motivations and Obstacles to Become Entrepreneurs," *International Journal of Business & Social Science*, October 2012, Vol. 3 Issue 19, pp. 181-192. 12p.

Zampetakis, Leonidas; Manto Gotsi; Constantine Andriopoulos; Vassilis Moustakis (2011). "Creativity and entrepreneurial intention in young people: Empirical insights from business school students," *International Journal of Entrepreneurship & Innovation*, August 2011, Vol. 12 Issue 3, pp. 189-199. 11p.

Zarafshani, Kiumars; Rajabi, Somayeh (2011). "Effects of Personality Traits on Entrepreneurial Intentions: An Empirical Study in Iran," *International Journal of Management*, September 2011, Vol. 28 Issue 3, pp. 630-641. 12p.

WHERE'S WALDO? THE SEARCH FOR ENTREPRENEURIAL ROLE MODELS

Lynnette Claire, University of Puget Sound
Alexa A. Perryman, Perryman Consultation

ABSTRACT

Entrepreneurship is a critical component for growth in the US economy. Exposing college students to the field, while they are finalizing their career aspirations, helps students turn vague intentions of starting businesses into realities. Based on inquires at three college campuses we found students to be largely unaware of the entrepreneurs in their own campuses and communities. We posit that this is based on a lack of realistic, rather than aspirational, role models and the need to broaden how entrepreneurship is presented both in and out of the classroom. We offer suggestions for both curriculum and community efforts.

INTRODUCTION

Waldo, a seemingly ageless man with neutral features and atypical fashion sense, is the focal character in a series of children's books by British illustrator Martin Handford. The pages of the books depict dozens of colorful characters and landscapes. Readers are given the challenge of finding Waldo in his signature red and white striped shirt and round glasses amidst crowds and lush backgrounds. Waldo is both iconic and elusive. He isn't hiding; in fact, he's in plain sight. However, to find him you have to be willing to pause for a moment, look closely, and see the details. Many of us began our search for Waldo in 1986 and can continue the hunt even today as Waldo recently celebrated his 25th anniversary with a new book for new and old readers to experience where he is now.

We use Waldo, fashion sense not withstanding, as a metaphor for the everyday entrepreneur. Entrepreneurs are ubiquitous, yet they can be difficult to find by virtue of blending into the general business landscape. Unlike Waldo, they do not have a signature ensemble, which means those hoping to find them amongst the crowd will need different criteria for their search. Although many individuals at different stages of life may profit from locating entrepreneurs, we focus on two groups: college students and college professors. We feel these groups would benefit most from being able to recognize and find the everyday entrepreneur rather than possess awareness solely of high profile entrepreneurial success stories. In the following sections, we focus on these groups individually to better assess their needs and subsequently offer prescriptive recommendations for locating this latest incarnation of Waldo.

THE PROBLEM AMONGST STUDENTS: A LACK OF AWARENESS

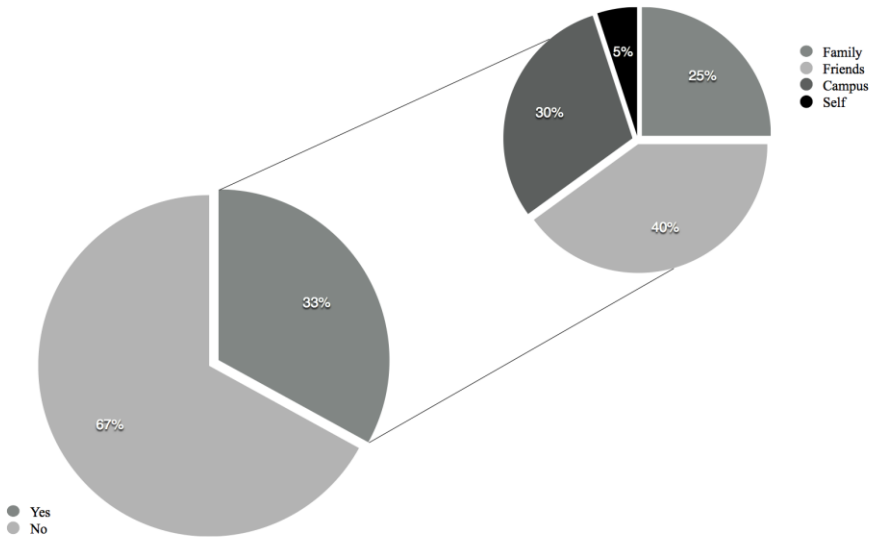
We begin our quest to aid in the search for entrepreneurial Waldo by starting with college students. Research suggests that nearly 75% of college students report they have thought, at least vaguely, of starting their own businesses, but only 17% envision careers in their own businesses (Shinnar, Pruett, & Toney, 2009); These numbers increase to 76% and 35%, respectively, when business majors are examined in isolation. The disparity between vague intention and reality is vast and of concern given the importance of entrepreneurship to our economy and level of

innovation. Nearly all, new, net job growth in the US is attributable to business startups, which demonstrate striking resilience even during recessions (Haltiwanger, Jarmin, & Javier, 2013). Small businesses have added nearly 40 million jobs to the US economy over the last 30 years (Pitman, 2013). In addition to the direct effects of small firms, entrepreneurship stimulates innovation in large, established firms thus increasing our national competitiveness (Kuckertz, 2013), making it important to continually grow entrepreneurs.

If college is where students form career aspirations (Blau & Snell, 2013), they need to be aware of entrepreneurship as a career option. Although not all college students will, or should, become entrepreneurs during their lifetimes, entrepreneurship will likely affect them and vice versa, whether it is through their relationships as suppliers, customers, or constituents (Bassi, Morton, & Williams, 2011). Exposing college students to entrepreneurship, if only through an awareness of entrepreneurship around them, are an important building block to their careers and society as a whole. As such, college is arguably a viable place to plant the seed of entrepreneurial intentions and to see if any have taken root.

Students on three college campuses in the Pacific Northwest (*n*=305) were asked one simple, direct question: Do you know any entrepreneurs? The response: 67% said no. For the 33% percent that did know an entrepreneur, a second question was asked: Who are they? For many, family was the most likely source at 40%, whereas classifying themselves was the least likely at 5%. See Figure 1 for a graphical presentation of responses.

Figure 1
DO YOU KNOW AN ENTREPRENEUR? IF SO, WHO?



In terms of the demographics driving the sample, the three schools were of similar size (avg = 3,271), with two being private universities and the remaining one public. The response rate between the schools also was of statistically similar sizes. In turn, almost all of the respondents (98%), regardless of university, classified themselves as full-time students with representation equally split between the classes (i.e., freshman, sophomores, juniors, and seniors). Lastly, the majority of responses (83%) were in the age bracket of 18-22, 9% were in the 23-29 age range, and the remaining 8% were 30 years or older.

On the surface, a negative response of 67% seems high. One explanation is that these students aren't very entrepreneurial and/or interested in entrepreneurship. Although plausible, each campus polled has some form of entrepreneurship activities available to students, be it a business plan competition, a formal course, a club, or other undertaking. Moreover, statistically significant differences were not found to exist between respondents by campus. In terms of national estimates, surveys by the Global Entrepreneurship Monitor state that entrepreneurial intentions doubled in 2009 during the recession and total entrepreneurial activity in 2012 was at 13%, the highest recorded level in the US since the survey's beginning in 1999 (Global Entrepreneurship Monitor, 2013).

A second explanation is that this sample is highly atypical with regard to how many people college students know on some relational level. College students, on average, have 587 Facebook friends and even if all these "friends" are not highly developed relationships, research suggests that students and non-students alike known even more people then those they are connected to on social media (Thompson & Lougheed, 2012). This suggests that the number of individuals an average college student knows, at least in passing, may very well exceed 600.

Perhaps, there is a third option. In public opinion research, how a question is framed matters. It is possible that the results instead suggest that students are not aware of the entrepreneurs around them. Let's consider Waldo for a moment. What if he was called something else? In the US and Canada his name is Waldo. In the UK it's Wally. He's known as Walter in Germany, Charlie in France, and Vallu in Finland. There is something to a name. The word entrepreneur tends to bring a specific image to mind. For many, it's the gods of tech start-ups; guys in jeans with hoodies underneath their blazers. It's people with an above-average tolerance for risk. It's business, engineering, or computer science majors. The title of entrepreneur often is reserved for big names, such as Jobs and Zuckerberg.

This presentation of entrepreneurs is reinforced in both popular media and current events. HBO's new show Silicon Valley reinforces this message in its first episode with an eccentric billionaire offering $100,000 to anyone who drops out of college in order to bring an innovative idea to life. The character (Peter Gregory) calls college a cruel and expensive joke on the poor and the middle class while citing that Jobs and other tech giants either never attended college or dropped out before completion. This television portrayal mimics current events in that Peter Thiel, PayPal co-founder, via the Theil Foundation recently offered 24 students (under the age of 20) $100,000 in grant money and mentorship to start a tech company in exchange for dropping out of school (Miller, 2011).

In contrast, there's the title of small business owner. Despite both founding businesses and many being small in size by economic definition of employee numbers, entrepreneurs and small business owners have be painted to be at opposite ends of the spectrum. Many definitions play up the grand vision and problem solving capabilities of the entrepreneur, the same skills all business owners need for survival—and success. Yes, the title of small business owner remains unglamorous at best and undesirable at worst. The term small business owner often conjures up images of shops and stores about to be taken over by the large conglomerate: The going out of business signs thanking customers for 10+ years that can be seen in many small towns. The words small business owner is not synonymous with modern technology, large profits, or sleek offices.

Thus perhaps it is time the titles of entrepreneur and small business owner got a combined makeover. In their book title *Rework* authors Fried and Hansson (2010) suggest the term starters. It's not as mysterious as being an entrepreneur, as but more exciting than small

business owner. It is easier and shorter to spell. And, perhaps, those are all good things. Starters suggest action. Our advice to students is to stop viewing entrepreneurship as an exclusive club that only certain types of people can be involved and instead see it as an opportunity to start something; make something; do something. It can be something as small as a YouTube video to as large as a organizing a community event. It doesn't mean dropping out of school, quitting a steady job, or revolutionizing the world – unless you want it to. It means doing something you are interested in that can turn into something others will pay for.

In light of these three potential explanations, we posit that entrepreneurship does exist on these college campuses, but that the students have not been adequately exposed to the full extent of what entrepreneurship can entail and who can be classified as an entrepreneur. Thus we offer two propositions:

P1 *Increasing students' exposure to relevant role models will increase their awareness of entrepreneurs, particularly in their local area, and entrepreneurship in general.*

P2 *An increase in students' awareness of entrepreneurship will lead to an increase in entrepreneurship as a potential career path.*

PAINTING A BETTER PICTURE: PRESENTING ENTREPRENEURSHIP TO COLLEGE STUDENTS

College graduates are more successful in entrepreneurial pursuits than non-college students (Van der Sluis, Van Praag, & Vijverberg, 2008), so, societally, it behooves us to expose college students to the subject, as well as educate them about entrepreneurial thinking. Working under the hypothesis that students may not have a complete picture of what entrepreneurship can entail, college professors are at the forefront for changing student perceptions as they have the most direct access to students on a consistent basis. Thus it is suggested that how businesses get started and who starts them can directly be influenced by how entrepreneurship is presented in the classroom. Most educators' and practitioners' view of entrepreneurship has evolved from the perspective that entrepreneurs are (solely) born rather than developed. Drucker (1985) comments that the "entrepreneurial mystique" is not magic, mysterious or genetic, but that it's a discipline that can be learned. For entrepreneurship, the question has now changed from "Can this be taught?" to "How should it be taught?" (Kuratko, 2005).

In that vein, entrepreneurship education has grown exponentially: from 250 courses in 1985 to more than 5,000 today (Ewing Marion Kaufmann Foundation, 2013); this includes degree and certificate programs as well as campus-wide efforts. Entrepreneurship is present in higher education curricula in specific ways (e.g., a major in entrepreneurship), as part of general education in cross-disciplinary efforts, or as part of non-business disciplines (e.g., information technology). Current research suggests two directions for entrepreneurship education: 1) educating better entrepreneurs and 2) improving attitudes towards entrepreneurship (Kuckertz, 2013; Fretschner & Weber, 2013).

The first, educating better entrepreneurs, focuses on teaching skills and competencies that would help a person who is already attracted to an entrepreneurial career. This includes, but is not limited to, creating a marketing plan, developing pro forma budgets, and perfecting an elevator pitch. However, where work is needed is on the latter path, improving entrepreneurial attitudes. Efforts in this direction involve focusing on individuals without an innate interest in or awareness of the topic. To encourage such individuals, this path focuses on developing

entrepreneurial characteristics, showing different aspects of entrepreneurship in varying environments, and applied project-based learning (Kuckertz, 2013). It focuses on individuals such as Jeff … a 21-year-old junior, majoring in English. When asked who he knows who is an entrepreneur, he reports that his Uncle Jim is building an app with his friends after work hours, his neighbor at home runs her own accounting firm, his freshman roommate's mom owns a bakery, and he saw a poster about a student he knew who graduated last year who is now starting some sort of tech startup, but he's fuzzy on the details aside from the fact she was a business major he met at a party. He doesn't know any others. He's also not interested in entrepreneurship. How could he be an entrepreneur, he asks, he's an English major after all.

Despite media stories that publicize tech startups, the technology sector makes up a small part of where many new businesses are started. Instead, many new business owners choose retail or service industries – areas with numerous competitors and high failure rates. Typically people open businesses in industries they have prior experience in, such as chefs opening restaurants or hairdressers opening their own salons. Education can play a pivotal role in helping individuals choose more profitable and/or better-suited sectors for new businesses by focusing on customer needs and the role of competition.

By first understanding what entrepreneurship is and what it can entail, academics and practitioners alike have become quite knowledgeable and skilled at teaching entrepreneurial know-how to students interested in the subject (Kuckertz, 2013), but seemingly lack skill in reaching those without an innate interest in or awareness of the topic. We suggest that raising awareness via role models is a solid starting ground. Using the data as a starting point, students reported knowing less than one entrepreneur on campus. Given that a university campus provides a captive audience and, for this study, an average campus size of 3,271 students suggests that there should be almost 500 student entrepreneurs on each campus (15% of students on these campuses self-reported as entrepreneurs. 15% of 3,271 equals 490.65 student entrepreneurs). Thus promoting student entrepreneurs as potential role models and bringing entrepreneurs to campus may be promising first steps towards increasing overall awareness.

PUTTING THE ROLE IN ROLE MODEL

Theories of career development underscore the importance of role models. Role models provide context and vicarious learning that directly affect and influence career choice (Lent et al., 1994). Empirical research has found links between role models and career: maturity (Flouri & Buchanan, 2002), aspirations (Nauta, Epperson, & Kahn, 1998), choice (DeSantis & Quimby, 2004), salience, and attitudes toward nontraditional careers (Nauta & Kokaly, 2001), with the effectiveness of role models holding when other moderating factors are controlled. Role models also have been shown to positively influence self-efficacy (Bandura, 1999, 2000), which leads to higher entrepreneurial intentions (Chen, Green, & Crick, 1998). Prior research thus lends support to the case for role models; however, for entrepreneurship in particular, the type of role model may be of even greater importance.

Krueger and Brazeal (1994) found that non-credible role models actually reduce self-efficacy, which lowers potential entrepreneurs' intentions to start businesses. As a result, role models students can directly relate to are far more likely to influence career decisions (Kukertz, 2013). For example, recent graduates are more salient role models than graduates from 15 years ago. Providing a variety of role models in terms of gender, ethnic backgrounds, and personal resource bases also increase salience. To be effective in increasing entrepreneurial intentions, the role models must affect attitudes, increasing both perceived desirability and feasibility (Krueger,

1993). In entrepreneurship in particular this suggests decreasing the emphasis on overly successful entrepreneurs who are too far away from the average students' experience to have a direct, rather than aspirational, influence (Kuckertz, 2013). If the focus is only on examples of famous entrepreneurs, prospective student entrepreneurs often do not perceive such accomplishments as personally feasible. A sole focus on the aspirational may discourage the most promising students from exploring entrepreneurship more deeply and miss the opportunity to use resources that are readily accessible on campuses.

While high-growth, successful entrepreneurs are worthy of celebration, the everyday entrepreneurs are important to building students' entrepreneurial intentions because of the contagiousness of entrepreneurship and self-efficacy (Kuckertz, 2013; Casson, 1995). A recent study by the Kauffman Foundation (2013) suggests that entrepreneurship may be contagious in that knowing entrepreneurs will increase the odds that you yourself will be (or are) an entrepreneur. That said, entrepreneurship might be harder to "catch" if you are female. In the Kauffman Foundation's (2013) sample (n = 2,000), men were more likely to know entrepreneurs than women. This difference worsened when entrepreneur type was taken into account, with women even less likely to know entrepreneurs in high-growth businesses. Our inquiry mimicked these results in that individuals who self-identified as entrepreneurs knew significantly more entrepreneurs, with this result holding regardless of categorization (i.e., among friends, acquaintances, family members, on campus, etc.). In turn, 23% of the males in our sample identified themselves as entrepreneurs vs. only 10% of the female respondents. Women also reported knowing fewer entrepreneurs, despite the total sample being somewhat biased towards female respondents. Thus, finding realistic role models may be even more important for female students to view entrepreneurship as a career path that they too can attain.

STEPS IN THE RIGHT DIRECTION: CURRICULUM AND BEYOND

If the goal is to increase entrepreneurial skills, a skills-based approach to education through the curriculum, particularly in business schools, can be effective for those already pre-disposed to entrepreneurial careers. However, we suggest the primary goal should be to increase entrepreneurial awareness among those who know little about entrepreneurship or do not think it is an option for them. And to do so, it is essential to both adjust and broaden the definition of what defines entrepreneurship and who can be one.

In, Yet Out, of the Classroom

One common area of concern for those considering starting a business is capital. One way to assuage those fears is by providing a small startup loan. Microfinancing has existed in various forms since the mid-1700s. The process involves giving very small loan amounts to those with no, or very poor, credit history at lower interest rates than alternative credit sources. The process also relies on other mechanisms, such as social embeddedness to ensure repayment. It gained widespread recognition when the Grameen Bank, a Bangladesh community bank, and its co-founder Muhammad Yunus jointly won the Nobel Peace Prize in 1998. Since then microloans have been brought into the mainstream by companies such as Kiva, a nonprofit organization that lets individuals take loans out for as little as $25 to help businesses get off the ground, and, in turn, eliminate poverty in areas where access to traditional financing are limited.

Microloans also have slowly started to take root in the US via companies such as Grameen America. Yunus felt that the same principles used at Grameen Bank in Bangladesh

could be used to help America's urban poor. Grameen America specifically focuses on women in households below the poverty line. Its programs work to help establish credit and increase household income, with a maximum first-time loan award amount of $1,500 put into a no-fee savings account.

Although the worth of such programs should not be undervalued, the process of climbing out of poverty is not quick or easy; it will likely take a generation to fully see results. In that spirit, One Hen Inc. focuses its efforts on children. This non-profit provides educational resources for 3rd thru 7th grade to encourage social entrepreneurship in children by teaching them 4 concepts: personal initiative, financial literacy, global awareness, and giving back.

At the college level, micro lending can occur in the classroom by giving students small loans and then requiring them to start businesses, from three-day ventures to term-long endeavors. Professors have the flexibility to require capital repayment regardless of financial outcomes, as a percentage of total sales, or to view the outlay as a grant rather than a loan. In a 10-week quarter at the University of Oregon a team of 4 students started a yard maintenance company with a $100 loan from the business school. The team repaid their $100 startup capital and earned an additional $500 during the term. The student who led the team continued the business for the next 3 years to pay for his undergraduate and graduate education (Claire, 2009).

Likewise, Peterson and Albertson (2006) describe an 8-week version of the exercise, which has been successfully duplicated at other institutions over varying time frames. In this variation each student received a $20 microloan and was given the opportunity to combine funds with other students. Tracking students over 4 years, the students realized a 390% return on investment while simultaneously donating 20% of their gross profits to charity. At the individual level, profits ranged from -$16 to $465, with a 100% loan repayment rate. Here, entrepreneurial endeavors ranged from dog walking and selling baked goods to music and sports lessons, cleaning services, and t-shirt sales. Students reported feeling everything, from fear to excitement, as well as gaining self-efficacy and appreciation for having the opportunity to make mistakes on a small scale. More importantly, most students reported that the exercise was influential in helping them understand entrepreneurship and discern whether this was an appropriate career path for them.

If finding the resources to fund in-class microloans is out of reach, another means to broaden the view of entrepreneurship is to send students out into the streets – literally. With this method students are asked to find a local entrepreneur (a Waldo of their own) to job shadow and create a short documentary about him or her. The students are not given a list of entrepreneurs to choose from and instead must apply class lessons to identify entrepreneurs. At times, the star of the film is equally surprised as he or she often identifies primarily with the craft or area of expertise, rather than the more general title of entrepreneur. The primary grading criterion of the assignment is if the film demonstrates that the focal person is an entrepreneur. The films are shown in a public setting, with invitations extended to those outside of just the classroom (see examples in the archive at http://soundideas.pugetsound.edu/entrepreneurshipfilmfestival/). Students report this project to be an effective means to more deeply understand who an entrepreneur is as well as gain awareness through identification and experiential learning, which links to the concept of deep learning (Cooper & Lucas, 2006; Kreber, 2001).

Deep learning is a teaching approach by which students are asked to extract meaning and build understanding by a combination of course material and experiences rather than a surface or rote understanding of general concepts (Cooper & Lucas, 2006). Documentaries help facilitate such an understanding by allowing students to vicariously experience entrepreneurship through

job shadowing and then relive the experience in the editing and storytelling processes. The written reflections required seek to further aid in processing the experience via a sense-making approach and considering, without negative consequences, if the experience is the right fit for them. One student's final reflection highlights this by noting that, "… there is no 'entrepreneurial profile.' All entrepreneurs are different and they all have different personalities. Also, entrepreneurs can be any age. The other important lesson I learned is that there are entrepreneurial opportunities in all professions" (Claire, 2009, p. 360).

Lastly, and perhaps the most common mechanism for sparking interest is forming a club and hosting guest speakers. Entrepreneurship club members plan and participate in activities related to new venture creation that range from meetings where students simply sit and talk to BuyCotts where students patronize a local entrepreneurial business en masse to pitch nights where students pitch new venture ideas for feedback. While under-studied as a phenomenon, clubs have been found to raise "awareness, aspirations and knowledge about entrepreneurial activity" by connecting students with entrepreneurs, among other important outcomes (Pittaway et al., 2010, p. 40).

In turn, opening up classroom and club events that feature guest speakers to the university, or even the community at large, raises awareness beyond a single department and can serve as a tool for building a database of local entrepreneurs. Consider the success of the 1 Million Cups Program. The name is derived from the numerous cups of coffee poured and drank on Wednesday mornings while two early-stage startups present their pitch for 6 minutes, followed by 20 minutes of audience Q&A, and end with founder feedback via audience survey and local organizers. The weekly event is an experiential learning opportunity for all involved (see www.1millioncups.com for more details and availability in your city).

When bringing guest speakers into your own classroom, consider both the demographics and psychographics of your students. If your class is mostly men in their 50s, reaching out to your school's business advisory committee for referrals may be an excellent starting point. If your class has great diversity, you will need to get more creative. One starting point would be to contact your local alumni office to identify individuals who have started ventures within the last 10 years. Another path would be to see if your local business press or Chamber of Commerce selects an annual 40 under 40 and contact those who are undertaking or supportive of entrepreneurship. Lastly, you may also want to keep in mind the family backgrounds, work histories, and sexual orientations of your students in order for guest speakers to be salient and resonate with your class. It is important to realize that relatable role models may accomplish the goals of increasing self-efficacy better than the very successful entrepreneurs many of us often seek to bring into our classrooms (Casson, 1995; Krueger and Brazeal, 1994; Kuckertz, 2013).

Finding a Larger Audience On and Off Campus via Competitions

Business plan competitions are a staple of entrepreneurship centers and most competitions are designed to appeal to a variety of majors (Russell, Atchison & Brooks, 2008). Typically the goal of these competitions is to foster local ventures (Friar & Meyer, 2003). Broadening the focus of the competition beyond purely financial outcomes may increase the relevance of the competition to many students, such as those from the arts or social sciences. Entrepreneurial competitions that focus on social and environmental entrepreneurship have proven more popular to broad audiences than the traditional model, which suggests that one way to expand interest and exposure beyond tech startups is to create categories and awards for plans

that solve environmental, social, or specific community problems (Souitaris, Zerbinati, & Al-Laham, 2007).

Business plan competitions are increasingly emerging at the community level. Russell et al. (2008) remind us that, "business plan competitions around the world have been established to provide a stimulus for new venture creation and for capturing the ideas, talents and potential in the community" (p.124). In the US, nine states report statewide business plan competitions, with only two of these competitions launched before 2005 (Hurley, 2010). In addition to helping the best new ventures gain support, the competitions highlight the exciting ideas and efforts in a given locale, one of the important building blocks of an entrepreneurially healthy region (National Commission on Entrepreneurship, 2000).

According to the National Commission on Entrepreneurship's 2000 study, entrepreneurially healthy regions share five key qualities:1) diversity in sources of capital; 2) supportive infrastructure; 3) an entrepreneur-friendly government; 4) an enabling culture; and 5) strong local networks. The last three qualities relate strongly to raising awareness of entrepreneurship by politicians, entrepreneurs who have come before, and with each other. The effects of a strong local entrepreneurial culture will have positive effects for both students on college campuses and the local community. Thus, raising awareness of the entrepreneurs around all of us is a multi-dimensional process that will draw on resources from both the ivy halls and our business communities.

One such example is the University of Texas at El Paso (UTEP), which recently received funding to collect and codify the oral histories of prominent first-generation Hispanic entrepreneurs in their region. Students were trained in gathering oral histories by the university's Institute of Oral History. The stories are being used as part of the UTEP curriculum and are available online (https://academics.utep.edu/Default.aspx?tabid=20000). UTEP was not limited by academic boundaries as the *El Paso Times* featured one of the 36 entrepreneurs each Sunday. The Smithsonian Institution is featuring this collection as part of its new permanent "American Enterprise" exhibition at the American History Museum in early July of 2015 (Torrance, 2013). This project will raise awareness of these entrepreneurs at a scope far beyond the local level.

CONCLUSIONS AND IMPLICATIONS: GETTING BACK TO BUSINESS

One key factor in encouraging entrepreneurship is making sure individuals are aware of the entrepreneurs around them, and the results of this inquiry suggest that students are decidedly unaware of their local entrepreneurial community. This lack of awareness has meaning, particularly for college students, because of the vital function credible role models have in the process of forming career aspirations. As such, this paper and initial tri-campus inquiry are but a first step towards students and educators working together to increase awareness of entrepreneurial activity so that more individuals can find Waldo. This means there is work to be done on both sides of the equation.

Starting with students, they must be willing to see entrepreneurship in a new light – one that is not exclusive to tech start-ups and business students. They must be willing to look for Waldo in unconventional places. For educators, they must champion this change and promote a new vision of who Waldo is and where he (or she) can be found. If educators can interest students in entrepreneurship in college, they are more likely to take advantage of both curricular and co-curricular opportunities to learn about entrepreneurship, thus empowering them not only to more deeply consider starting businesses of their own, but also to be supportive of local businesses in the future. Professors should work to design assignments to help students uncover

nearby and relatable entrepreneurial role models. Moreover, educators must seek to highlight and celebrate local entrepreneurial efforts, rather than focusing on "imported" entrepreneurs. We must not buy in to the philosophy that someone is an expert solely because they have flown into a city.

Local business owners, particularly those in small businesses, need to equally embrace the title of entrepreneur and the responsibilities that come with the title. This includes, but is not limited to, being open to questions from students about the highs and lows of their own experiences and a willingness to share their stories. Such individuals can form the basis of credible role models as well as empower students to not only consider more deeply the possibility of starting businesses of their own, but also to be more supportive of local businesses in the future.

In closing, at no point in recent history has it become more culturally acceptable to become or aspire to be an entrepreneur. Entrepreneurship is portrayed in realty TV shows, such as Shark Tank, and crowd sourced funding is openly available on websites, such as Kickstarter.com. It is one of the best times to grow and celebrate entrepreneurs – at all levels and sizes of business. And what about Jeff, the English major? He ended up with a career in journalism that led to starting a small magazine. That magazine experienced extraordinary early growth in both readership and advertising, which caught the eye of a large conglomerate that eventually acquired the company. In other words, majors of any field can find themselves on a path to entrepreneurship, or, to put it another way, as Waldo.

REFERENCES

Aronsson, M. (2004). Education matters – but does entrepreneurship education? An interview with David Birch. *Academy of Management Learning and Education, 3*(3), 289–292.

Bandura, A. (1999). Social cognitive theory of personality. In L. Pervin & O. John (Eds.), *Handbook of personality* (2nd ed., pp. 154-196). New York; Guilford Press.

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science, 9*(3), 75-78.

Bassi, A, R.B. Morton & K.C. Williams (2011). The effects of identities, incentives, and information on voting. *The Journal of Politics, 73*(2), 558-571.

Blau, G, & C.M. Snell (2013). Understanding undergraduate professional development engagement and its impact. *College Student Journal, 47*(4), 689-702.

Casson, M. (1995). *Entrepreneurship and Business Culture: Studies in the Economics of Trust (Vol. 1).* Edward Elgar, Aldershot.

Chen, C.C., P.G. Greene & A. Crick (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing, 13*(4), 295–316.

Claire, L. (2009). Lights, camera, and action: Advancing liberal arts values…entrepreneurially. In G.P. West III, E.J. Gatewood & K.G. Shaver (Eds.), *Handbook of University-wide Entrepreneurship Education* (pp.166-175). Northampton, MA: Edward Elgar.

Cooper, S.Y., & W.A. Lucas (2006). Developing self-efficacy for innovation and entrepreneurship: An educational approach. *International Journal of Entrepreneurship Education, 4*, 1-14.

DeSantis, A. M., & J.L. Quimby (2004). Self-efficacy as a mediator between contextual variables and career choice. In *Poster session presented at the 113th Annual Convention of the American Psychological Association, Washington, DC.*

Drucker, P.F. (1985). *Innovation and entrepreneurship*. New York: Harper & Row.

Ewing Marion Kauffman Foundation (2013). *Entrepreneurship Education Comes of Age on Campus. Ewing Marion Kauffman Foundation.* Retrieved March 27, 2014 from http://www.kauffman.org/~/media/kauffman_org/research%20reports%20and%20covers/2013/08/eshipedcomesofage_report.pdf

Flouri, E., & A. Buchanan (2002). The role of work-related skills and career role models in adolescent career maturity. *The Career Development Quarterly, 51*(1), 36-43.

Fretschner, M. & S. Weber (2013). Measuring and understanding the effects of entrepreneurial awareness education. *Journal of Small Business Management, 51*(3), 410-428.

Friar, J.H., & M.H. Meyer (2003). Entrepreneurship and start-ups in the Boston region: Factors differentiating high-growth ventures from micro-ventures. *Small Business Economics, 21*(2), 145-152.

Haltiwanger, J.C., R.S. Jarmin & J. Miranda (2010). Who creates jobs? Small versus large versus young. *Review of Economics and Statistics*, *95*(2), 347-361.

Hurley, J. (2010, April 13). Statewide entrepreneurship competitions on the rise. BizPlanCompetitions.com. Retrieved from http://www.bizplancompetitions.com/2010/04/statewide-entrepreneurship-competitions-on-the-rise/

Kelley, D.J., A. Ali, C. Brush, A.C. Corbett, M. Majbouri & E.G. Rogoff (2012). United States Report. *Babson College, & Baruch College (Eds.), Global Entrepreneurship Monitor*.

Kreber, C. (2001). Learning experientially through case studies? A conceptual analysis. *Teaching in Higher Education, 6*(2), 217-228.

Krueger, N.F. (1993). The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship Theory and Practice, 18*(1), 5-21.

Krueger, N.F., & D.V. Brazeal (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*, *18*(3), 91-104.

Kuckertz, A. (2013). Entrepreneurship education: Status quo and prospective developments. *Journal of Entrepreneurship Education, 6*, 9-71.

Kuratko, D.F. (2005). The emergence of entrepreneurship education: development, trends, and challenges." *Entrepreneurship Theory and Practice*, *29*(5), 577-598.

Lent, R.W., S.D. Brown & G. Hackett (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, *45*(1), 79-122.

Liñán, F. (2007). The role of entrepreneurship education in the entrepreneurial process. In A. Fayolle (Ed.), *Handbook of Research in Entrepreneurship Education* (pp. 230–247). Cheltenham, U.K.: Edward Elgar.

Mayeda, K. (2013, December 10). Entrepreneur University. Washington Technology Industries Association. Retreived from http://www.washingtontechnology.org/entrepreneur-university/

Miller, C.C. (2011, May 25). Want success in Silicon Valley? Drop out of school. *The New York Times.* Retrieved from http://bits.blogs.nytimes.com/2011/05/25/want-success-in-silicon-valley-drop-out-of-school/?_php=true&_type=blogs&_r=0

National Commission on Entrepreneurship (2000). Building companies, building communities: Entrepreneurs in the new economy. Retrieved from www.zeromillion.com/files/entrepreneurs-in-new-economy.pdf

Nauta, M.M., D.L. Epperson & J.H. Kahn (1998). A multiple group analysis of predictors of career aspirations among women in science and engineering. *Journal of Counseling Psychology, 45,* 483-496.

Nauta, M.M., & M.L. Kokaly (2001). Assessing role model influence on students' academic and vocational decisions. *Journal of Career Assessment, 9,* 81-99.

Peterson, R.M., & D.E. Albertson (2006). Running a micro business in marketing class: Experiential learning right out of the gate. *Marketing Education Review, 16*(1): 105-109.

Pitman, A. (2013, May 25). Unemployed? Why now is the best time to be an entrepreneur. Retrieved from http://www.huffingtonpost.com/aaron-pitman/small-business-job-creation_b_3333199.html

Pittaway, L., E. Rodriguez-Falcon, O. Aiyegbavo & A. King (2011). The role of entrepreneurship clubs and societies in entrepreneurial learning. *International Small Business Journal, 29*(1): 37-57.

Russell, R., M. Atchison & R. Brooks (2008). Business plan competitions in tertiary institutions: Encouraging entrepreneurship education. *Journal of Higher Education Policy & Management*, *30*(2): 123-138.

Schlee, P.R., R. Stewart & D. Summers (2013). Training students for entrepreneurial activities: Lessons from a social venture plan competition. *Journal of Entrepreneurship Education, 16,* 125-138.

Shinnar, R., M. Pruett & B. Toney (2009). Entrepreneurship education: Attitudes across campus. *Journal of Education for Business, 84*(3), 151-159.

Steinmetz, G., & O.E. Wright (1989). The fall and rise of the petty bourgeoisie: Changing patterns of self-employment in the postwar United States. *American Journal of Sociology, 94*(5), 973-1018.

Thompson, S.H., & E. Lougheed (2012). Frazzled by Facebook? An exploratory study of gender differences in social network communication among undergraduate men and women. *College Student Journal, 46(*1), 88-98.

Torrance, W.E.F. (2013). Entrepreneurial campuses: Action, impact, and lessons learned from the Kauffman Campus Initiative. *Ewing Marion Kauffman Foundation Research Paper.*

Van der Sluis, J., M. Van Praag & W. Vijverberg (2008). Education and entrepreneurship selection and performance: A review of the empirical literature. *Journal of Economic Surveys*, *22*(5), 795-841.

INSPIRATION, SELF-AWARENESS AND ENTREPRENEURIAL INTENTIONS: A MIXED-METHOD CASE STUDY OF POSTGRADUATE ENGINEERING STUDENTS IN THE UAE

Anne Van Ewijk, Abu Dhabi University
Raid Al-Aomar, Abu Dhabi University

ABSTRACT

This exploratory pilot case study consists of a cohort of engineering students following an intensive entrepreneurship course in the United Arab Emirates. In the UAE, entrepreneurship is considered by the government to be one of the main means to transform the oil-based economy into a knowledge-based economy. However, research on entrepreneurship education in this country is still extremely rare.

The paper proposes an innovative theoretical perspective on entrepreneurship education; investigating how entrepreneurship education works through possible relations between entrepreneurial intentions, self-awareness and inspiration. The study shows that the impact of entrepreneurship education has to be analyzed on the individual student level. On that level, almost all hypotheses were tentatively confirmed. Most noticeable was that the impact of entrepreneurship education appeared to be heavily influenced by gender as intermediating variable. Other new insights pointed to the potential importance of the duration of the course and specific course content related to self-awareness. Limitations of the study were that all hypotheses still need to be tested on a larger scale and the quality of data would likely improve when respondents receive more prior explanation of the concepts of self-awareness and inspiration.

To test these new hypotheses and build additional hypotheses, the paper outlines a mixed-method design. Quantitative and qualitative methods are combined to optimize within-study triangulation. It includes a longitudinal pre-post student survey with closed and open-ended questions as well as interviews with the instructors. To comply with the scientific criteria for non-parametric (small sample) data analysis, quantitative data is subjected to qualitative screening (making use of reversed scored statements) to ensure valid results. This is a high-quality research feature that is very rare in the field of entrepreneurship education.

INTRODUCTION

Entrepreneurship is generally associated with many positive economic and social effects. Innovative high-growth entrepreneurship is even seen as the potential source of solutions to intricate global challenges, such as climate change, migration, and terrorism (Naudé, 2011). Many academic studies also support the link between entrepreneurial activity and positive economic outcomes (Sheshinski et al., 2007; Van Praag & Versloot, 2007), although they do emphasize the importance of taking into account contextual factors that could influence the impact and indicate difficulties in defining and measuring the real impact.

In the United Arab Emirates (UAE), entrepreneurship is also increasingly considered as an important means and valuable additional strategy for job creation and economic independence

of young people, as part of the process of transforming the oil-based economy to a knowledge-based economy (Khalifa Fund, 2015). UAE citizens have benefited from the growth based on the discovery of oil through supportive government policies, no-tax regime, high public sector salaries, education allowance and other government welfare schemes. However, key challenges for the government include high unemployment levels (14%) amongst UAE nationals and low involvement of UAE nationals in the private sector (more than 90% of the employed UAE nationals work in the public sector). This is so, while the private sector flourishes, providing work for expatriate workers from many nationalities, who now make up 80% of the resident population (National Bureau of Statistics, 2009). More widespread high-quality entrepreneurship education is seen as one of several crucial approaches to solve these problems. Additional measures focus on other aspects of a favorable eco-system for entrepreneurship such as policies, regulatory reforms, business support and infrastructure, and mentoring (Khalifa Fund, 2015).

As such, the UAE joins the worldwide trend of an increasing prominence of entrepreneurship education (Kaltenecker et al, 2015). This trend is supported by two widely shared theoretical assumptions. First, having entrepreneurial intentions increases the likelihood of entrepreneurial behavior in the future: see, for example, Ajzen´s theory on planned behavior (Azjen &Fishbein, 2008) and the Shapero-Krueger model (Krueger et al., 2000). Second, entrepreneurship education increases students' entrepreneurial intentions (Krueger et al., 2000; Souitaris et al., 2007; Liñán et al., 2011).

However, as illustrated further in the literature review, it can be argued that neither of these assumptions has been convincingly confirmed by academic research (Rideout & Gray, 2013). In fact, the literature review in the following section demonstrates that the academic field of entrepreneurship education in general contains several important gaps, which are just as prominent in the context of the UAE. Thus, this paper contributes to the field of entrepreneurship education research, with a focus on the UAE, by designing and conducting an explorative case study for postgraduate engineering students in an internationally accredited private university in the UAE. The ultimate objective is to facilitate new theory-building. This case study is part of an ongoing international research project that investigates the relation between self-awareness, inspiration and entrepreneurial intentions, as well as how this relation is influenced by differences in pedagogy and course content and differences in culture and student age, gender and personality. The case study includes a longitudinal pre-post student survey combined with two in-depth interviews on pedagogy and the (anonymized) results of the student survey with the entrepreneurship course instructors. Specific research questions for this case study include: (1) How does participation in an entrepreneurship course impact the entrepreneurial intentions of engineering students in the UAE? (2) What intermediary role do self-awareness and inspiration play in this relation? (3) Do differences in personal characteristics of the students (such as nationality, age and gender) lead to different outcomes?

Section 1 presents a review of related literature and identifies research gaps. Section 2 illustrates the research methodology, study design (including hypotheses), and the selection criteria for the case. Section 3 offers an overview of the study results. Section 4 presents the results analyses and findings. Finally, the findings are summarized in the conclusion and directions are set for future research.

LITERATURE REVIEW AND RESEARCH GAPS

A literature review of entrepreneurship education studies indicates three important research gaps that are even more prominent when focusing on the context of the UAE. The first

two are primarily related to the content of previous studies and the latter is related to the utilized research methodology in existing research.

First, there is an issue regarding the often assumed relationship between entrepreneurship education and entrepreneurial intentions. Most studies confirm the positive relation between entrepreneurship education and entrepreneurial intentions, although it is often stated to be an indirect one: entrepreneurship education is an intermediate factor with a positive mediation effect on entrepreneurial intentions through its impact on other factors such as malleable personality traits and self-efficacy (Obschonka et al., 2010; Ertuna &Gurel, 2011). However, as Rideout &Gray (2103) argue, this one-directional positive relation between entrepreneurship education and entrepreneurial intentions has not been empirically validated. In fact, there have been some methodologically solid empirical studies that indicate a negative relation (Oosterbeek et al., 2010; Von Graevenitz et al., 2010). Based on these results, Von Graevenitz et al. (2010) propose a more nuanced relation; entrepreneurship education has a diverging effect on entrepreneurial intentions through self-awareness (in the sense of self-knowledge). In other words, since students learn about entrepreneurship and themselves, entrepreneurship education leads to more variance in entrepreneurial intentions (higher and lower scores). This two-fold effect is confirmed by Sieger et al. (2014). Furthermore, Assudani and Kilbourne (2015) emphasize the importance of students' self-awareness in entrepreneurship education and even strongly recommend a pedagogical shift from a technical-functional approach to a conversational, dialogical approach to stimulate students to critically analyze and develop their self-awareness. However, no study ever since has taken this assumption as the base for further research.

Second, there is an issue regarding the role of inspiration in entrepreneurship education and the impact of inspiration on entrepreneurial intentions. Many studies (such as Kaltenecker, 2015) take three conceptually independent determinants of intention, as defined by Azjen (1991): Subjective Norm, Attitude, and Perceived Behavioral Control. The importance of 'inspiration' as determinant of intention is commonly recognized in more recent studies, but this concept has received scant explicit exposure in empirical research. A rare exception is the study by Souitaris et al. (2007), who use a single-item construct of inspiration alongside many other concepts related to the content of entrepreneurship education, and conclude that this is likely the most important topic to investigate further. They also indicate that a valid and reliable multi-item scale would be useful for future empirical tests. Such a construct already exists as it has been developed and proven highly valid and reliable over a decade ago in the area of psychology (Thrash & Elliot, 2003; Thrash & Elliot, 2004). Applying this in the area of entrepreneurship education, therefore, seems promising.

Third, several concerning observations can be made about the methodology utilized in previous studies on the impact of entrepreneurship education. To start with, there is but a small amount of studies on the impact of entrepreneurship education that is longitudinal (pre-post) and includes a control group (Rideout & Gray, 2013). Also, there is a lack of case studies that propose and test new theory at the same time (Baptista & Naia, 2015; Naia et al, 2015). Finally, none of the reviewed studies included both quantitative and qualitative methods of data-gathering and data-analysis, which would enable within-study triangulation, allowing researchers to identify potential important aspects more accurately by approaching it from different vantage points. This seems particularly helpful in the context of entrepreneurship education, where sample sizes (classes of students) are typically small.

These three identified gaps are even more prominent in the context of the UAE. Academic research on entrepreneurship education in the Middle East in general and the UAE in

particular is scarce, while this region has a particularly strong strategic interest in developing the entrepreneurial mindset of its residents (Khalifa fund, 2015). Studies on entrepreneurship education in the Middle East and the Arab countries include, for example, Salamzadeh et al. (2013), Farid et al. (2011), and Kirby and Ibrahim (2011). Within the UAE context, studies on entrepreneurship education are even rarer. For example, Wiseman and Anderson (2014) studied a UAE university as case to identify the ways that internal ideas, processes, and techniques can be developed in youth through mass education systems based on ICT. They gave particular attention to the ways that youth are prepared to participate in the knowledge economy by becoming information innovators and knowledge entrepreneurs. Biju and Vardhan (2011) analyzed the entrepreneurial motivations and their drivers amongst Indian expatriate students in the UAE. They analyzed perception regarding the entrepreneurial competencies, attitudes, aspirations and role of higher education in general (not only entrepreneurial education). They also investigated qualitatively the levels of awareness regarding their entrepreneurial goals. By means of conclusion, they confirm that entrepreneurial research is still in its infancy in this region as most studies have been conducted about Western university students. Finally, some studies within the UAE context focused on demographic factors and legislations that impact entrepreneurship education. For example, Majumdar and Varadarajan (2013) studied the impact of gender on students' attitude towards entrepreneurship in UAE, while Goby and Erogul (2011) studied the impact of legislative encouragements and cultural constraints on female entrepreneurship in the UAE.

In sum, there is a limited research on entrepreneurship education in the Middle East and UAE. Evidently, there is no research dedicated to analyzing the role of inspiration and self-awareness in UAE entrepreneurship education. Furthermore, none of the reviewed studies used a longitudinal study design to empirically identify the real drivers of entrepreneurship education. Such research gaps need further attention from scholars given the growing interest in entrepreneurship education within UAE universities. This paper contributes to existing literature by addressing these research gaps in the context of UAE entrepreneurship education.

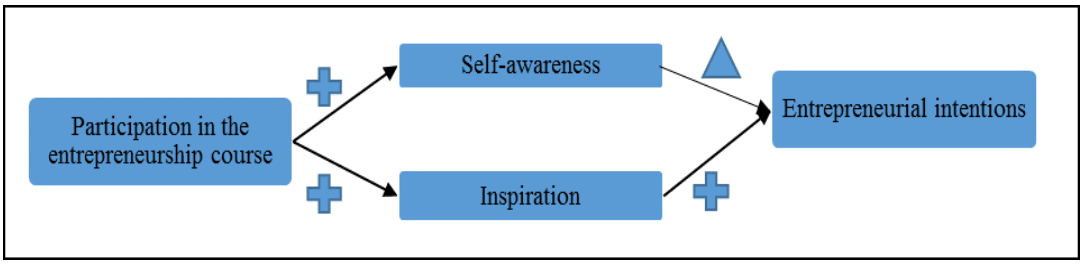
RESEARCH METHODOLOGY

To answer the research questions posed in the introduction, an explorative case study is developed to assess the entrepreneurship education in the context of the UAE. The study contains quantitative and qualitative methods for data collection and analysis, including a pre-post student survey and instructor interviews. As a part of this, qualitative analyses of the quantitative data are used to eliminate non-valid answers from the sample. As such, this study is based on a mixed methods design.

Hypotheses and Research Plan

The methodology originates from a global research project on entrepreneurship education and its results will be combined in a later stage with those of other case studies. As such, this case study can be considered as a pilot. Based on the literature review, a research model with hypotheses was developed and the model is applied to the UAE case study. Figure 1 presents the research model with hypotheses.

Figure 1
RESEARCH MODEL WITH HYPOTHESES



As displayed in Figure 1, the research model proposes a relation between participation in an entrepreneurship course on the entrepreneurial intentions of students through two intermediary factors, which are self-awareness and inspiration. More specifically, the research model contains the following hypotheses:

H1 *Participation in an entrepreneurship course is positively related to self-awareness*

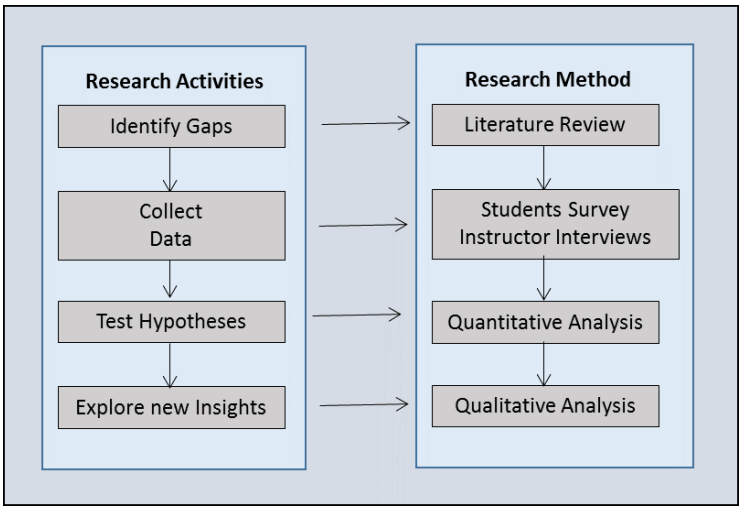
H2 *Participation in an entrepreneurship course is positively related to inspiration*

H3 *Inspiration is positively related to entrepreneurial intentions*

H4 *Self-awareness is positively related to variance in entrepreneurial intentions (e.g. as students become more self-aware they will score significantly higher or lower on entrepreneurial intentions than at the start of the course)*

To provide insights with respect to the outlined hypotheses in the context of the UAE and to create insights on possible new hypotheses, a pilot study research plan is developed. The plan is based on a mixed method research plan that integrates quantitative and qualitative research tools and methods. The adopted research plan is presented in Figure 2.

Figure 2
PILOT STUDY RESEARCH PLAN



Section 1 has already outlined the research gaps identified from the literature review. The following subsections will shed light on the remaining elements of the research plan: the case selection and description (section 2.2), the survey design (section 2.3) and the interview design (section 2.4). Afterwards, section 3 displays the research results and section 4 outlines the quantitative and qualitative analyses.

Case Selection and Description

The explorative study research is carried out within the UAE context given the growing need to cultivate the entrepreneurship culture within UAE universities and organizations. This may result in insights that are potentially valid for the Middle East as a larger context that shares similar traits as well as contribute to the global research on entrepreneurship education. The other selection criteria for the context of the case study were as follows. First, we selected a private university in the UAE to increase the probability of students from different nationalities. As opposed to the public universities that traditionally have almost exclusively UAE national students. Also, we selected engineering students due to the large potential contribution of high-tech-high-growth entrepreneurship to the UAE economy. As Duval-Couetil et al. (2012) confirm, the engineering context is particularly relevant to innovation and entrepreneurship related to technology. Finally, we selected the postgraduate level to be able to take into account possible gender differences: education in the UAE at the undergraduate level is generally gender-segregated.

The study includes engineering students following the postgraduate course titled "Innovation and Entrepreneurship". The course focuses on topics related to managing technological innovations of products and services, developing business plans, and creating successful organizations. It provides rich exposure to the students in applications related to manufacturing, services, and information technologies. It also explains how to become an entrepreneurial leader by defining and developing opportunities and bringing together the resources and capabilities needed to commercialize products and services. The knowledge and skills acquired in this course are applied in a term project that includes, as an essential component of the project, the ethical issues related to intellectual properties of innovative ideas. Learning outcomes are assessed using individual assignments, surveys of individual and organizational innovation, entrepreneurial project, and a final exam. This course was co-taught, which means that there were two instructors: a professor from the College of Engineering and the manager of the Innovation and Entrepreneurship Center at the same university. The group consists of 19 students, of which 7 male and 12 female, aged between 22 and 35. All students are working in areas related to engineering and technology, either in the public sector (government entities) or in the private sector. Their educational background is a Bachelor in Engineering or Technology. Despite of the private nature of the university, the majority of students are UAE nationals (16 out of 19).

The objectives of the study were briefly introduced during class, after which students received an invitation to fill in an online survey. This took place in the beginning of the course and right after the course ended. The course ran for 5 consecutive weeks, with three classes of three hours per week. The content of the survey is outlined hereafter.

Survey design

The quantitative aspect of the pilot study consists of an online survey designed to capture the concepts of self-awareness, inspiration and entrepreneurial intentions, and collect data on some potentially relevant personal characteristics (e.g. gender, age, culture). The survey contains 39 items for the begin measurement (pre) and 43 items for the end measurement (post). The questionnaire has been distributed in English. As this is a second language for almost all UAE students, the face validity of the questionnaire has been tested by 3 academic fellows and 4 respondents with a university degree (of which one graduate student, who was not part of the sample or control group). All were proficient in English, but originally from different linguistic backgrounds (Arabic, Dutch, German, Spanish, and Urdu). They checked the quality of the design and whether all questions were understood well and in a similar way. To guarantee construct equivalency, items in the questionnaire are based on earlier studies as much as possible. Appendix 1 presents the main sections of the designed survey.

The survey is programmed in SurveyMonkey (www.surveymonkey.com). Both instructors received a brief slide pack to introduce the study in class and provided students with a link to the survey. A different link was created for each measurement (2 in total). This survey was the result of a careful integration of the considerations and sources below. A qualitative analysis of the answers for this case study afterwards has determined whether specific items needed to be excluded.

Personal information

These questions were all related to contingency factors that earlier empirical studies on entrepreneurial intentions found to be positively or negatively related to differences in entrepreneurial intentions, or they found that they were unrelated to differences in entrepreneurial intentions but nevertheless important to control for. Examples are nationality, age and gender.

Self-awareness

The items in this construct are drawn from various publications in the area of psychology (e.g. Ghorbani et al., 2008). An important consideration is that individuals apparently offer more insightful and thus more valid self-reports of the absence rather than the presence of self-awareness (Brown & Ryan, 2003). In line with regular social studies, a 5-points scale is used. The statements include negative items that have to be reverse scored, by means of control mechanism (are answers of respondents consistent, in other words, are they paying attention to the content of the questions).

Inspiration

This is an exact replica of the ‘Inspiration Scale’ as developed, tested and proven valid in research with students by Thrash and Elliot (2003; 2004). This is a 7-points scale.

Entrepreneurial intentions

The items in this construct are drawn from various publications in the area of entrepreneurship studies (e.g. Krueger et al., 2000; Liñán & Rodriguez-Cohard, 2008;

Obschonka, et al., 2010). As with self-awareness, a 5-points scale is used and statements include negative items that have to be reverse scored, by means of control mechanism.

Interview Design

Pedagogy, or how teachers are perceived by students, has a significant impact on learning outcomes in entrepreneurship education (Fiet, 2001). As this case study is not based on any particular hypotheses regarding pedagogy, interviews with the two instructors of the entrepreneurship course about their teaching methods are included, with the aim to explore whether analyzing the results from this perspective might lead to new insights. Also, the results from the survey were shared with these instructors. The objective here was to tap into their experience and explore whether they might provide additional insights or confirm the analyses and conclusions already outlined. As the interviews were designed to probe for information and to give respondents maximum flexibility in structuring their responses, these consisted of a limited number of open-ended questions. Table 1 present the interview questions.

Table 1
ENTREPRENEURSHIP EDUCATION IN THE UAE
INTERVIEW QUESTIONS COURSE INSTRUCTORS

Interview questions about pedagogy	With respect to the course, what percentage of class time did you use for 1) lectures, 2) exercises and 3) interaction? (the total should be 100%) What did you do during this course when a student had a question about what you just explained in the lecture? Would you describe your teaching style for this course as more traditional or more innovative? Why? How did students respond to your teaching style in this course? (please elaborate your answer)
Interview questions about the results of the student survey	What do think of these results? How would you explain these results?

Both interviews took place one month after the entrepreneurship course had finished to avoid influencing their behavior in class and to be able to provide them with the results of the preliminary analyses.

Methodological Strengths and Limitations

As outlined in above, our pilot study has clearly recognizable characteristics of a quantitative study as well as qualitative aspects. Quantitative and qualitative data is collected through a standardized online survey and descriptive statistics are used to display the results. However, as the study includes a small sample case study, the quantitative data is analyzed by means of a qualitative approach. This makes it a mixed method study design of a dominantly qualitative nature. As Henry and Foss (2014) argue, this is a welcome alternative study design to the positivist methods that are traditionally dominant in the field of entrepreneurship research as that prevents the field to move past functionalist paradigms. This approach of bridging quantitative and qualitative logics (Shah & Corley, 2006) is a high-quality research feature that is very rare in the field of entrepreneurship education.

To evaluate the robustness of the findings, it is necessary to subject published research to critical scrutiny. However, the criteria used in this evaluation have to be appropriate for the research paradigm. For example, quantitative conceptualizations of reliability and validity are

unsuitable for evaluation of qualitative research as they were not devised for this purpose (Popay et al., 1998). Doing so might erroneously lead to the impression that the qualitative design is not academically rigorous, as unfortunately appears to occur frequently in the field of entrepreneurship (Henry & Foss, 2014). As such, we will comment on four criteria for judging the soundness of qualitative research, as outlined by Guba and Lincoln (1982, 1994) from a mixed method perspective: internal validity (credibility), external validity (generalizability or transferability), reliability (dependability) and objectivity (confirmability or empirical falsifiability or testability).

Internal validity from a qualitative perspective is called credibility: it has to be established that the results of qualitative research are credible or believable from the perspective of participants in the research. This criterion is often satisfied by presenting the preliminary results, without interpretations, to both instructors and asking them about their impressions. From a more quantitative perspective, the fact that we include triangulation of sources increases the likelihood that inferences from the data are accurate.

External validity refers to the extent to which results can be generalized and is often based on the robustness of the sample. As Popay et al. (1998) state, in qualitative work, randomness and representativeness are of less concern than relevance. The selection criteria should therefore be clearly motivated, which is done in section 3.2. Also, the aim of these type of studies is to make logical generalizations to potential new theory about a similar class of phenomena instead of probabilistic generalization to a whole population. In other words, the results of this study are limited in the sense that we cannot claim they are valid for all entrepreneurship students, but then again, that was never the aim.

Reliability is concerned with the quality and replicability of the measurement instrument. Using multiple testers from different linguistic backgrounds and by making use of measurement tools tested in earlier research to guarantee construct equivalency certainly has enhanced the reliability of the survey. This is reinforced by the fact that all research steps and all decisions in the data analyses are clearly outlined. A limitation is that it could be tested further. However, what is more important in qualitative research is whether the study explicitly indicates all possible contextual factors that could have influenced the results. Therefore, an elaborate case description is included and the interviews in which instructors could react to the results also served as a double check.

Objectivity, also denominated as conformability, refers to the degree to which the results could be confirmed or corroborated by others. Researcher objectivity was enforced by including two researchers to study the data and by the discussion of results with the instructors. Also, after the data analyses, we have conducted a data audit, examines the data collection and analysis procedures and makes judgments about the potential for bias or distortion by looking at potential beta and gamma change (see section 4.2). Finally, to optimize the objectivity of the data itself, qualitative content analyses of the quantitative data was executed to ensure that only valid answers were selected for further analyses. Only those students who did the survey in the beginning and at the end of the course were included in the results analysis. This allows for a longitudinal comparison with explicit group equivalency. Then, the survey items with reversed scoring (e.g. “A career as an entrepreneur is totally unattractive to me”) and an initial analyses of the scores were used for a qualitative validation process, which led to the disqualification of several more respondents or answers. The disadvantage, a lower response rate, is marginal, as the quality of the answers is more important than the quantity in a theory-building case study with a small sample.

The qualitative validation process included several steps. First, all students who gave continuous extremely high scores and did not demonstrate attention for the content of the questions (as they gave equally high scores to the reversed statements) was removed. However, some respondents did not pay attention to the questions regarding self-awareness in the first measurement, but they did pay attention to the questions regarding entrepreneurial intentions in that same measurement and also to all the questions in the second measurement. In this case, only their answers on the questions regarding self-awareness were not included in the analyses. Similar cases were treated in the same way. Finally, the first two reverse statements for self-awareness for the second measurement have been removed as these appeared to have caused confusion among respondents: many students gave very illogical scores to these statements.

In sum, despite of the small sample size and qualitative nature of this mixed method case study, the study design complies with most of the quantitative and/or qualitative criteria for solid research and as such is an example of a strong and innovative approach towards doing research in the area of entrepreneurship education.

RESEARCH RESULTS SUMMARY

This section provides an overview of the results obtained from the student survey and the instructor interviews. As indicated earlier, this is a mixed-methods case study that uses quantitative and qualitative data collection and generation.

Quantitative data was generated in the form of a student survey with closed questions. As the number of respondents is too low to do causal regression analyses, the results are displayed as descriptive statistics. These offer an indication of whether the general hypotheses would be confirmed or not by the collected data. As such, they provide directions for possible adjustment in the general hypotheses or for the formulation of new hypotheses.

Qualitative data was generated by including several questions in the student survey that require open answers. These open-ended questions examine students' perceptions on what particular aspects of the course (content or pedagogy) are positively or negatively related to their self-awareness and inspiration. Also, qualitative data was generated through the interviews with the entrepreneurship course instructors, focusing on their teaching style and discussing the (anonymized) results of the student survey with them. All of these aspects of the case study aim to identify possible new hypotheses.

Quantitative Results of the Student Survey (Closed Questions)

This section presents a summary of the results obtained from the survey related to the three main concepts in the general hypotheses: self-awareness, inspiration, and entrepreneurial intentions. Survey outputs for all respondents were exported to a spreadsheet for result summary and analysis. Initial response rate was 18 out of 19 (begin) and 17 out of 19 (end). As a result of the qualitative validation process (see above), 11 respondents are included in the final analyses. The obtained results are summarized in both tabular and graphical formats.

First, the results are displayed based on the main research concepts in the general hypotheses (self-awareness, inspiration, and entrepreneurial intentions), distinguishing between study timing (begin: at the start of the course / end: at the end of the course) and gender (male / female). Other differences in personal characteristics were not distributed over the respondents in such a degree that they could be taken into account as well. These results are summarized in Table 2.

Table 2
ENTREPRENEURSHIP EDUCATION IN THE UAE
RESULTS SUMMARY PER EACH EXPLORED ASPECT OF ENTREPRENEURSHIP

	SELF-AWARENESS			INSPIRATION			ENTREPRENEURIAL INTENTIONS		
	BEGIN	END	Difference	BEGIN	END	Difference	BEGIN	END	Difference
Female	4.25	4.38	0.13	6.63	6.38	-0.25	5.00	4.71	-0.29
Female	4.25	4.88	0.63	5.75	6.00	0.25	3.86	4.57	0.71
Female	3.75	4.50	0.75	4.25	6.00	1.75	3.00	3.43	0.43
Female	3.63	3.75	0.13	4.88	5.88	1.00	4.29	4.71	0.43
Female	4.50	3.63	-0.88	6.38	4.50	-1.88	4.14	3.00	-1.14
Male	3.50	3.63	0.13	4.88	4.13	-0.75	3.29	3.86	0.57
Male	4.88	4.38	-0.50	6.50	6.13	-0.38	4.71	4.29	-0.43
Male	4.00	4.00	0.00	6.63	6.50	-0.13	4.14	5.00	0.86
Male	4.00	3.88	-0.13	5.63	5.63	0.00	4.57	4.29	-0.29
Male	4.13	4.25	0.13	5.00	3.13	-1.88	3.71	3.57	-0.14
Male	3.63	4.25	0.63	5.63	6.25	0.63	4.29	4.00	-0.29
Total	**4.05**	**4.14**	**0.09**	**5.65**	**5.50**	**-0.15**	**4.09**	**4.13**	**0.04**
Female	*4.08*	*4.23*	*0.15*	*5.58*	*5.75*	*0.18*	*4.06*	*4.09*	*0.03*
Male	*4.02*	*4.06*	*0.04*	*5.71*	*5.29*	*-0.42*	*4.12*	*4.17*	*0.05*

Table 2 contains the three main concepts of the study: self-awareness, inspiration (in general) and entrepreneurial intentions. As outlined in section 3.3 (survey design), self-awareness and entrepreneurial intentions are measured with a 5-points scale, while inspiration in general is an exact replica of the scale as built, tested and proven solid by Thrash (2003; 2004) and therefore uses a 7-points scale. This does not affect the analyses, as the answers to the main questions lie in the direction of the differences (increase or decrease) and not in the absolute differences. In this respect, all differences of less than 0.1 points are considered to be too small to form any conclusive results and are indicated in a blue font. All differences more than 0.1 and positive are indicated in a green font. All differences more than 0.1 and negative are indicated in a red font.

At the collective (group) level, self-awareness increases minimally, inspiration decreases and entrepreneurial intentions increase very minimally. However, these changes somewhat when comparing female with male students: female students indicate more growth in self-awareness than male students (0.15 versus 0.04) and indicate a growth in inspiration, while the male students indicate a decrease in inspiration (0.15 versus -0.42). Finally, at the individual level, a more nuanced image appears, where there seems to be a strong diversifying trend in all dimensions: 31 out of 33 differences are more than 0.1, and scores are strongly positive for some and strongly negative for others.

As well as including the main concept of inspiration in general, the survey also included three questions regarding inspiration regarding the entrepreneurship course in particular. These results are summarized in Table 3.

Table 3
ENTREPRENEURSHIP EDUCATION IN THE UAE
RESULTS SUMMARY FOR COURSE INSPIRATION

	INSPIRATION COURSE		
	BEGIN (EXPECTATION)	**END (EXPERIENCE)**	**Difference**
Female	4.67	5.00	0.33
Female	5.00	5.00	0.00
Female	4.00	1.00	-3.00
Female	5.00	5.00	0.00
Female	4.00	3.67	-0.33
Male	4.33	4.00	-0.33
Male	5.00	4.00	-1.00
Male	5.00	4.33	-0.67
Male	4.00	1.33	-2.67
Male	4.67	5.00	0.33
Male	3.33	4.00	0.67
Total	**4.45**	**3.85**	**-0.61**
Female	*4.53*	*3.93*	*-0.60*
Male	*4.39*	*3.78*	*-0.61*

In Table 3, the same formatting is used as in Table 2 (blue font for differences less than 0.1 points, green font for positive difference and red font for negative difference). On all levels (collective, individual and gender – with some exceptions at the individual level), the expectation of inspiration in the course in the beginning was higher than the experience of inspiration in the course at the end.

Second, the results are displayed based on the item averages in each of the three main research concepts (for specific items, see Appendix 1). Viewing the results from this angle complements the information extracted from Tables 1 through 3 (individual-level) and facilitates conducting an aspect-by-aspect analyses (essential for a deeper understanding of the responses and for generating future insights). Tables 4, 5 and 6 show the average and the change in each item at the overall level as well as at the male/female level. They describe the items of, respectively, self-awareness, inspiration in general, inspiration related to the course and entrepreneurial intentions. Tangible differences of more than 0.1 points are highlighted in bold font.

Table 4
ENTREPRENEURSHIP EDUCATION IN THE UAE
RESULTS SUMMARY FOR SELF-AWARENESS ITEMS/ASPECTS

	Female Self-awareness			Male Self-awareness			Overall Self-awareness		
Aspect	Begin	End	diff.	Begin	End	diff.	Begin	End	diff.
A	4.20	4.40	**0.20**	4.67	4.50	**-0.17**	4.45	4.45	0.00
B	3.80	3.60	**-0.20**	4.00	4.33	**0.33**	3.91	3.97	0.06
C	4.40	4.00	**-0.40**	4.17	4.50	**0.33**	4.27	4.25	-0.02
D	4.40	4.20	**-0.20**	3.83	3.67	**-0.16**	4.09	3.94	**-0.15**
E	3.80	4.60	**0.80**	4.00	3.83	**-0.17**	3.91	4.22	**0.31**
F	3.80	4.40	**0.60**	3.50	3.50	0.00	3.64	3.95	**0.31**
G	4.20	4.60	**0.40**	4.00	4.00	0.00	4.09	4.30	**0.21**
H	4.00	4.00	0.00	4.00	4.17	**0.17**	4.00	4.09	0.09
Average	***4.08***	***4.23***	***0.15***	***4.02***	***4.06***	***0.04***	***4.05***	***4.14***	***0.09***

As shown in Table 4, the female self-awareness has tangible changes (above 0.1) in all the aspects except H (no change). Aspects A to H represent the direct assessment questions of self-awareness in the survey shown in Appendix 1. There was positive change at 4 aspects and negative change at 3 aspects. For overall results, the tangible three positive changes in items E, F, and G are mainly related to the respondent's strength, weaknesses, and personal values. Positive changes in such key personal items indicate a substantial improvement in self-awareness after taking the entrepreneurship course. The only tangible negative change is in item "D" which is related to knowing the skills needed to achieve personal goals. Further psychological studies can shed more lights on such aspects. As indicated earlier, the total female average change is positive and above 0.1 (improved self-awareness by 0.15 after participating in the entrepreneurship course). Male students have achieved a lower level of improvement (a total of 0.05). The overall improvement in self-awareness (male and female) is 0.09 (at the border line of tangible improvement).

Table 5
ENTREPRENEURSHIP EDUCATION IN THE UAE
RESULTS SUMMARY FOR COURSE INSPIRATION ITEMS/ASPECTS

	Female course inspiration			Male course inspiration			Overall course inspiration		
Aspect	Begin	End	diff.	Begin	End	diff.	Begin	End	diff.
A	4.60	4.00	**-0.60**	4.50	3.50	**-1.00**	4.55	3.75	**-0.80**
B	4.40	4.00	**-0.40**	4.33	4.00	**-0.33**	4.37	4.00	**-0.37**
C	4.60	3.80	**-0.80**	4.33	3.83	**-0.50**	4.47	3.82	**-0.65**
Average	***4.53***	***3.93***	***-0.60***	***4.39***	***3.78***	***-0.61***	***4.46***	***3.86***	***-0.60***

Table 5 presents the results of direct assessment at the three survey aspects related to inspiration regarding the course (these three aspects were assessed using the same 1-5 scale). The part related to the frequency and intensity of experiences/feelings regarding inspiration in general was presented earlier in Table 3 and is not included here because scores turned out to have very little variation between items. As shown in Table 5, both male and female course inspiration

level has tangible negative changes at all course inspiration aspects resulting in an overall change of -0.6. In general, students indicate high expectations to be inspired (in general, about entrepreneurship and to become an entrepreneur oneself) before taking the entrepreneurship course. After having experienced the course, students score significantly lower when asked about how the course inspired them in general (-0.8) and about entrepreneurship (-0.37). Consequently, they indicate that the course did not encourage them to consider the possibility of being an entrepreneur themselves (-0.5).

Table 6
ENTREPRENEURSHIP EDUCATION IN THE UAE
RESULTS SUMMARY FOR ENTREPRENEURIAL INTENTIONS ITEMS/ASPECTS

	Female entrepreneurship			Male entrepreneurship			Overall entrepreneurships		
Aspect	Begin	End	diff.	Begin	End	diff.	Begin	End	diff.
A	4.00	4.20	**0.20**	4.00	4.17	**0.17**	4.00	4.19	**0.19**
B	3.25	3.80	**0.55**	4.00	3.67	**-0.33**	3.63	3.74	**0.11**
C	4.20	4.20	0.00	3.83	4.17	**0.34**	4.02	4.19	**0.17**
D	3.75	4.20	**0.45**	4.00	4.17	**0.17**	3.88	4.19	**0.31**
E	4.00	4.20	**0.20**	4.17	4.00	**-0.17**	4.09	4.10	0.01
F	4.60	4.40	**-0.20**	5.00	5.00	0.00	4.80	4.70	**-0.10**
G	4.00	3.60	**-0.40**	3.83	4.00	**0.17**	3.92	3.80	**-0.12**
Average	***3.97***	***4.09***	***0.12***	***4.12***	***4.17***	***0.05***	***4.05***	***4.13***	***0.08***

As shown in Table 6, the female entrepreneurial intentions have tangible changes (above 0.1) in all the aspects except C (no change). There was positive change at 4 aspects and negative change at 2 aspects. The total female average change is positive and above 0.1 (improved entrepreneurial intentions by 0.12 after participating in the entrepreneurial course). Male students have achieved a lower level of improvement (a total of 0.05). The overall improvement in entrepreneurial intentions (male and female) is 0.08 (at the border line of tangible improvement). There was tangible positive change in items A, B, C, and D which are mainly related to the respondent desire in the entrepreneurship career. Attaining positive change in these items was significant contribution of the entrepreneurship course. The two tangible negative changes are in items F and G which are related to starting a venture and becoming an entrepreneur. Apparently respondents prefer to have a career in entrepreneurship compared to be entrepreneurs themselves.

Qualitative Results of the Student Survey (Open-Ended Questions)

As part of the second measurement (survey at the end of the course) the students were asked which aspects of the course had a positive or negative impact on their self-awareness and their inspiration. Answers were summarized and the frequency of similar answers was counted. With respect to self-awareness, many respondents confused learning about innovation and entrepreneurship with learning about one-self (e.g. knowledge about one's own goals, values or skills). The following overview table therefore only included answers that could (at least indirectly) be related to self-awareness in its correct meaning. Table 7 summarizes the results.

Table 7
ENTREPRENEURSHIP EDUCATION IN THE UAE
RESULTS SUMMARY STUDENTS' ANSWERS TO OPEN-ENDED QUESTIONS

Self-awareness			
Frequency	**Positive open answers**	**Frequency**	**Negative open answers**
2	Tools to help me think of innovations / think in a different way		
2	Real-life examples of successful individuals we discussed in class		
1	Homework assignment to assess my creativity	3	Duration of the course: too short
1	Course content helped me extend my knowledge beyond my field of expertise and discover new skills	1 1	Lack of interaction between instructor and students Unclear assignment / final project
1	Using current examples of our daily life		
1	Teaching method		
Inspiration			
Frequency	**Positive open answers**	**Frequency**	**Negative open answers**
3	Personal examples of entrepreneurs		
3	Business model canvas		
2	Problems solving, management + learning to manage innovation	1	Duration of the course: too short
2	Teaching method: study plan, contact, use of videos	1	Teamwork with team-members who were not used to work in teams
1	Sustainable & social aspects of innovation & entrepreneurship	1 1	Innovation Patent Process (as topic) Cost and revenues (as topic)
1	Insight about value of failure (learning)		

Table 7 shows that, in general, students outline more positive than negative remarks about how the course affected their self-awareness and inspiration. Also, both the positive and negative answers (some exceptions aside) clearly refer to different course characteristics with respect to self-awareness and with respect to inspiration. This means most students were able to differentiate well between the two concepts. However, many students did not provide any answers to these questions, and some answers regarding self-awareness clearly showed that students had not understood the concept correctly – e.g. knowing yourself better: what you want and what you can do (and therefore were not included in this overview).

Qualitative Results of the Instructor Interviews

With respect to teaching style, both instructors indicated that they spent 50% of the class time on lectures and 50% on exercises and interaction. When asked how they responded to questions, none explicitly explained that they would involve the other students in answering the question (thereby creating optimal interaction). One instructor actually said to "take it as a chance to reiterate on important aspects." However, the other instructor did involve the student him/herself in the process by leading him/her to the answer with pausing questions about a case.

Both instructors also stated that they used a mix of traditional and innovative teaching methods. Traditional methods the instructors described included having a session plan and giving lectures. Innovative teaching methods included making the sessions more students centered to

transfer knowledge instead of lecturing. This was mainly achieved through team-based activities, games, interactive cases, and group discussions. In sum, the teaching style can be described as moderately interactive with a combination of traditional and innovative teaching methods.

According to the instructors, they felt that students responded positive to this teaching style in general, although some experienced confusion due to the unusual teaching methods and assessments tools (e.g. slides with little text to trigger ideas, group work on a case instead of a final exam, etc.). As indicators of success, they also refer to good grades (over 80% of the students scored very well) and a high score on the student satisfaction survey (4.5 out of 5). It should be mentioned, however, that this study did not compare the average grade and average student satisfaction with other courses at the same university. Also, the student satisfaction survey includes mostly questions that are not related to the degree in which teaching methods are traditional or innovative.

RESULTS ANALYSIS

This section contains the testing of the general hypotheses as reproduced in line with the international study on entrepreneurship education (section 4.1) and the exploring of new insights related to entrepreneurship education in the United Arab Emirates (section 4.2). Both activities draw on the summary of quantitative and qualitative data as presented earlier in section 3.

Testing the General Hypotheses

As mentioned earlier, for this case study, the research hypotheses will be tested based on descriptive statistics and qualitative analyses. Results will provide insight and directions for future research regarding data collection, possible statistical tests, and the development of new regression models of causal relationships.

H1 Participation in an entrepreneurship course is positively related to self-awareness

This hypothesis is tentatively confirmed by the data from Table 2. On the one hand, at the collective level there is no significant difference between the start and end measurement (0.09 which is a little less than 0.1 points). This is also the case for male students. On the other hand, female students indicate a significant increase in self-awareness (0.15). Also at the individual level, more students have indicated an increase in self-awareness than those who indicated a decline in self-awareness (7 versus 3, with 1 student does not indicate any significant difference at all). Implications of these results include the following. First, the general hypothesis might still be correct (the majority of students have experienced an increase in self-awareness). This will be further confirmed by the international study which targets much more respondents and explores the potential for establishing causal regression analysis. Also, it appears that there are different levels of understanding of the concept 'self-awareness' between individual students (please see open questions). Apparently self-awareness is a complex psychological construct and researchers have to explain such key constructs better to the respondents and/or use easier statements. Finally, perhaps entrepreneurship pedagogy is gender sensitive with respect to self-awareness: female students could be more receptive to the course philosophy and the employed more innovative than traditional teaching methods.

H2 Participation in an entrepreneurship course is positively related to inspiration

These hypotheses are rejected for both inspirations in general (see Table 2) and for inspiration related to the particular course (see Table 3). At the collective level, the difference for inspiration in general (-0.15) and the inspiration related to the course (-0.61) is clearly negative. At the individual level, the majority of students indicate a decline in both types of inspiration. Curiously, female students did indicate an increase in inspiration in general (0.18). Implications of these results are that the general hypothesis might still be correct, but based on this pilot study it seems unlikely. It needs to be retested by the international study with more respondents. Also, the drop in the course inspiration average is mainly due to comparing the "expected" inspiration level (at the beginning of the entrepreneurship course) to the "actual" inspiration level (after learning and practicing entrepreneurship through the course). Students typically tend to have high expectations at the beginning as they view entrepreneurship as an interesting and fun subject. This is likely to change when they learn the requirements of the entrepreneurship process (reality check). Still, however, an average overall inspiration level of 3.86 out of 5 indicates that the students were indeed inspired after taking the course to a great extent. In addition to this, the drop of inspiration in general could be because students have mixed up 'inspiration in general' with 'inspiration related to the course' (see 'flat' scores, e.g. continuous scores of 4 on all statements, on the general inspiration-scale). Inspiration is a complex psychological construct, in the end, and difficult to study. Apparently, researchers have to explain such key constructs better to the respondents and/or use a simpler scale to measure inspiration. All of this may call upon researchers to formulate a new hypothesis on the high expectations of courses related to fashionable topics such as entrepreneurship versus the difficulty to realize those expectations (here within a limited timeframe of 4 weeks). Finally, just as in H1, it also appears that entrepreneurship pedagogy might be gender sensitive with respect to inspiration: female students could be more receptive to the course philosophy and the employed more innovative than traditional teaching methods.

H3 Inspiration is positively related to entrepreneurial intentions

This hypothesis is neither confirmed nor rejected based on data from Table 2. At the collective level the average difference for inspiration in general was -0.15, while the difference for entrepreneurial intentions was 0.04. For male or female students in general, there was also no difference. Both of these observations contradict the hypothesis. However, at the individual level, for 7 out of 11 students the difference in score on entrepreneurial intentions coincides with the difference in score on inspiration (lower when lower and higher when higher). This implies that the general hypothesis might still be correct, as the majority of students did experience an increase in both concepts at the same time. That should be further tested by the international study with more respondents and the potential for developing causal regression analyses or even structured equation modeling. Again, it also appears that students have mixed up 'inspiration in general' with inspiration related to the course, which would suggest (as mentioned regarding hypothesis 2) the need to explain key constructs better to the respondents and/or the need to use a simpler scale to measure inspiration in general or refrain from including inspiration in general at all and limit the study to inspiration with respect to the entrepreneurship course.

H4 Self-awareness is positively related to variance in entrepreneurial intentions

This hypothesis is neither confirmed nor rejected. This assumption can only be tested by looking at the individual level, as the outcome at the collective level for entrepreneurial

intentions is expected to be 'no significant change' since the lower and higher scores balance each other out. However, as Table 2 indicates, at the individual level, the largest differences per student (more than 0.4 increases or decline) for entrepreneurial intentions only coincide with significant increases in self-awareness for 4 out of 7 students. That seems to confirm the hypothesis, but it is not enough to be convincing. This implies again that the general hypothesis might still be correct, as a modest majority of students that experienced a considerable increase or decrease in entrepreneurial intentions did report an increase in self-awareness. However, this needs to be tested better in future studies, such as the upcoming international study with more respondents. Second, the answers of students on the open-ended question related to self-awareness showed that students did not fully comprehend this key concept, mixing it up with either their own skills or inspiration. This indicates again the need to explain key constructs better to the respondents. Finally, this result might be so modest because this entrepreneurship course did not include specific attention for self-awareness. The confirmation might be much stronger for courses that include course elements that focus on increasing the knowledge that students have of their own goals and skills, such as a personal vision or a personal business plan.

Data-Audit: Reflection on Alpha, Beta and Gamma Change

Golembiewski et al (1976) introduced a change typology to categorize observed change as a result of organizational interventions: alpha, beta and gamma change. Alpha change refers to real effects of an intervention, beta change refers to scale recalibration by respondents, and gamma change refers to concept redefinition by respondents over time (Carraher et al, 2008).

Methodologists have proposed several strategies to assess beta change and gamma change. These consist of statistical techniques, such as factor analysis (factor structure comparison, sometimes only of subscales, sometimes using Structured Equation Modelling) and the use of dynamic correlations between a focal variable and criterion variable. Other techniques, applicable on small samples as well, depend on specific choices in the questionnaire design, such as the inclusion of retrospective statements in the post-survey ('how would you rate yourself now when you just started') or the inclusion of 'actual' and 'ideal' questions (see Thompson and Hunt, 1996, for an overview).

To do statistical analyses, some say that the absolute number of cases (N) is important, while others state that the subject-to-variable ratio (p) is important (Arrindell & van der Ende, 1985; Velicer & Fava, 1998; MacCallum et al., 1999). In general, many follow the rule of at least 100 for the number of cases, or the rule that the subjects-to-variables ratio should be no lower than 5 (MacCallum, et al., 1999). However, our explorative mixed method case study complies with neither and also did not include retrospective or 'ideal' questions. This leaves us no method to assess change according to this typology, which might not be such a great limitation, as the three types of changes often coincide and what has caused which change to occur is often unclear (Thompson & Hunt, 1996). This aside, we can and will reflect from a logical point of view on the probability of whether the observed change is alpha change, or has been influenced by beta or gamma change.

As with any impact measurement of educational programs, the respondents were students who have actually been trained to increase their understanding of one of the main concepts (entrepreneurship) underlying an important factor in the survey: entrepreneurial intentions. The other two main factors (self-awareness and inspiration), on the other hand, were not as visible in the course outline. Even so, due to the topic it is not unlikely that students could have had experiences that have indirectly led to different emotional associations or understandings of these

two concepts as well. In these circumstances, it is very likely that a certain degree of gamma change (reconceptualization of the concept) as well as a certain degree of beta change (revaluation of the measurement scale due to different standards) is inevitable (Carraher et al, 2008). Indeed, due to the topic of the course, these might as well have been the intended types of change. Especially as gamma change has been argued to be the most permanent and most predictive of long-term behavior (Thompson & Hunt, 1996). A post-post survey could also shed more light on this matter.

Exploring New Insights

Several new insights and future directions can be derived from the results of quantitative and qualitative analyses. These could be used as learning's to keep in mind when designing improved similar future studies or new hypotheses to be tested in additional future studies: either quantitatively with surveys, such as the upcoming large-sample international study or comparative analysis of student grades, or qualitatively through studies including student and instructor interviews.

First of all, as mentioned from the results of testing H1 and H2, perhaps entrepreneurship pedagogy is gender sensitive. Female students clearly experienced more increase in self-awareness and inspiration. Perhaps they are more receptive to the course philosophy and the more innovative than traditional teaching methods that were used. Thus, new hypotheses to be explored could be: Female students know less about entrepreneurship before taking the course, female students are more attracted to entrepreneurship once they learn about it, female students are more comfortable with the more innovative teaching methods and assessment tools typically used in entrepreneurship education, etc.

Second, as mentioned from the results of testing H2, participation in an entrepreneurship course might lead to a decrease in inspiration of students because their expectations are so high to begin with and the course functions as a 'reality check'.

Third, from the mixed results related to H2, H3 and H4, it was clear that future studies should dedicate specific attention to how much explanation complex key constructs require or simply use items that are easier to understand to measure these key concepts.

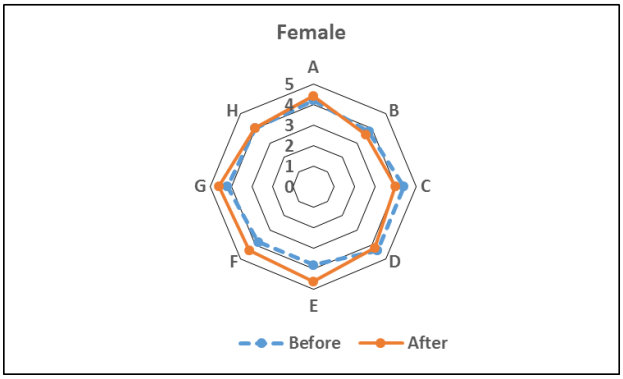
Fourth, as mentioned regarding the results of testing H4, it might be interesting to compare the effect of an increase in self-awareness between courses that include explicit attention for this topic (for example with a personal vision or a personal business plan) and courses that do not include these elements.

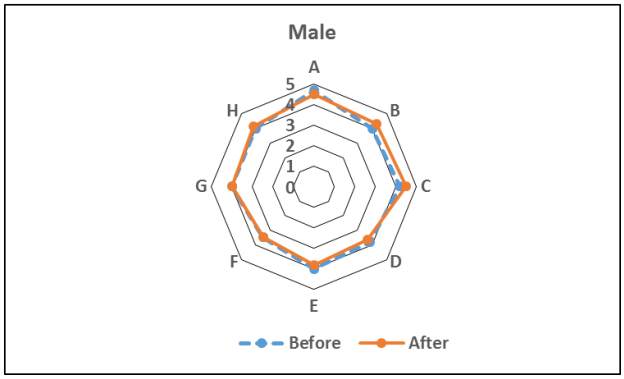
Fifth, the fact that many students indicated a lack of time (in the survey and in the formal student evaluation) could lead to a new hypothesis about the importance of the duration of the entrepreneurship course, such as "the effect of entrepreneurship education increases with the duration of the entrepreneurship course". This could be attributed to the typical experiential learning objectives and to the need for inclusion of innovative teaching methods and assessment tools that students need time to get used to, especially in more traditional educational environments.

Finally, we can also explore some insight from graphical analyses of the quantitative results. For example, establishing a RADAR diagram of self-awareness portfolios at the eight defined aspects (Figure 3) provides a platform for visual comparison of progress in self-awareness before and after taking entrepreneurship courses course as well as gender impact and the impact of other intermediate factors on entrepreneurship education. A future direction can be to set a reference level (score) at each aspect of self-awareness based on the results derived from

further international educational and psychosocial studies. These reference levels can be incorporated into the RADAR diagram to display performance issues, conduct gap analysis, and focus the improvement plans.

Figure 3
RADAR DIAGRAMS OF SELF-AWARENESS PORTFOLIOS





CONCLUSIONS, DIRECTIONS FOR FUTURE RESEARCH AND CLASSROOM IMPLICATIONS

Given the growing importance of entrepreneurship globally, and in the UAE in particular, enhancing the impact of entrepreneurship programs is expected to gain more attention in the future from researchers, practitioners and policy-makers. To test new theoretical hypotheses and create new insights that provide directions for future studies, this paper has outlined a mixed-method case study of postgraduate engineering students at an internationally accredited private university in the UAE. The analyses per hypothesis and new insights lead to multiple answers regarding the main research questions as formulated in the introduction.

First, how does participation in an entrepreneurship course impact the entrepreneurial intentions of engineering students in the UAE? The results from this case study indicate that there is likely no impact on entrepreneurial intentions of the students as a group as the impact is different per individual student: the majority of students will either experience a significant increase or decrease in entrepreneurial intentions.

Second, what intermediary role do self-awareness and inspiration play in this relation? Again, results at the group level do not indicate any relation between the main concepts, but an analysis of the individual scores indicates interesting relations. The results at the individual level hint that a student that participates in an entrepreneurship course is likely to experience an

increase in self-awareness, which tentatively confirms hypothesis 1. Also, it appears that this increase will positively influence the student's entrepreneurial intentions, which tentatively confirms hypothesis 4.

However, it also appears that, contrary to the expectation and hypothesis 2, participation in an entrepreneurship course makes almost all students less inspired. According to the instructors, this might be related to the unrealistic optimistic image of entrepreneurship and high expectation of the course (a 'magic recipe for becoming a successful entrepreneur') that students have in the beginning. When analyzing their individual scores, the researchers found that for a modest majority of students the difference in scores on inspiration (increase or decrease) did corresponded to the difference in entrepreneurial intentions, thereby tentatively confirming hypothesis 3.

Third, do differences in personal characteristics of the students (such as nationality, age and gender) lead to different outcomes? Despite of the limited number of respondents, the results of the case study clearly indicated a significant gender difference with respect to the scores on self-awareness and inspiration in general. Contrary to the average scores and their male counterparts, female students indicated strong increases in both concepts.

The answers to the main research questions, the difficulty of students to answer closed and open questions related to the concepts of self-awareness and inspiration, and the new insights outlined in section 4.3, lead us to several suggestions for new future research on entrepreneurship education in the UAE as well as globally. First, all hypotheses are worth testing on a larger scale to provide conclusive evidence; conducting full quantitative analyses on a larger sample size with statistical validation. This will take place in the international study that this pilot study is part of. However, future studies can either use simplified ways to measure these complex concepts or dedicate more specific attention to explaining these concepts to respondents before execution the measurements. Second, we suggest other topics to explore, which might have a significant impact on the way in which entrepreneurship education is executed. For example, entrepreneurship pedagogy. Are entrepreneurship education teaching methods gender sensitive? In other words, might female students be more receptive to the generally more innovative and experiential pedagogy of entrepreneurship education than male students? Also, are learning processes fundamentally different between students in an entrepreneurship course and other types of courses? If so, in what way and how does that impact course design? Third, another research approach that might shed more light on the relation between self-awareness and entrepreneurial intentions is to compare the impact of differences in self-awareness between courses that include specific attention for this topic in the course content and courses that do not include such special attention. Fourth, is also recommended to explore what effect the duration of an entrepreneurship course has on that impact. Finally, we suggest formulating a new hypothesis on the high expectations of same level courses related to fashionable topics such as entrepreneurship versus the difficulty that might instructors face to realize those expectations.

As expected from a study on entrepreneurship education, the above findings and directions have several classroom implications. These can be translated into enhanced educational practices and policies that can hopefully lead to optimal learning of entrepreneurship concepts and methods. First, optimizing the level of inspiration of students seems to be key for enhancing their attitude towards entrepreneurship. At the same time, the study indicates that it can sometimes be very challenging to meet the expectations of students in this sense. This issue requires specific attention from instructors to incorporate educational and learning practices, such as inspirational stories about entrepreneurs that students can relate to, seminars given by

entrepreneurs that are come from the same background as students, including experiential exercises that might lead to personal insights, etc. Second, the study also recommends including specific attention for self-awareness within the course (e.g., adding a session on self attributes and personal skills that support entrepreneurship learning and lead to success in start-ups projects). This could include conducting an assessment of individual entrepreneurship abilities (skills, intention, and inspiration) in the course curriculum. The RADAR diagram in Figure 3 can be used to develop a portfolio for each individual for benchmarking best practices and to provide guidelines for further development. Finally, the study recommends making Innovation and Entrepreneurship a mandatory course at the undergraduate level to prepare students for post graduate. Study results showed that the participation in an entrepreneurship course at the postgraduate level has led to improved awareness and inspiration and eventually higher entrepreneurial intentions. A basic entrepreneurship course at the undergraduate level will further improve the students' awareness and motivation as they become more prepared to tackle the entrepreneurship process at a realistic level of expectations. This initiative has been already implemented in the UAE starting this academic year.

REFERENCES

Ajzen, I. and Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.

Almeida, M. (2008). Innovation and entrepreneurship in Brazilian universities, *International Journal of Technology Management and Sustainable Development*, 7(1), 39-58.

Arrindell, W. A. and Van der Ende. J. (1985). An empirical test of the utility of the observations-to-variables ratio in factor and components analysis. *Applied Psychological Measurement*, 9, 165-178.

Assudani, S. and Kilbourne, L. (2015). Enabling entrepreneurial minds: using appreciative inquiry as a pedagogical tool for uncovering self- awareness and for generating constructivist learning. *Journal of Entrepreneurship Education*, 18(1), 65-74.

Azyyati, A., Ida, N.M.N., Rahman, Firdaus, A.R. and Daing, M.S. (2013). Barriers to Start-Up the Business among Students at Tertiary Level: A Case Study in Northern States of Peninsular Malaysia. *Asian Social Science*, 9(11): 290-299.

Baptista, R. and Naia, A. (2015). Entrepreneurship Education: A Selective Examination of the Literature. *Foundations and Trends® in Entrepreneurship*, 11(5), 337-426.

Biju, S. and Vardhan, J. (2011). Entrepreneurial motivations and their drivers: An empirical assessment of the Indian expat students in the UAE. *International Journal of Information Processing and Management*, 2(4), 62-73.

Brown, K.W. & Ryan, R.M. (2003). The benefit of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84: 822-848.

Carrahar, S.M., Buckley, M.R. and Carraher, C.E. (2008). Research challenges in sustainable strategic management: change and sustainability. *Internal Journal of Sustainable Strategic Management*, 1(1), 2-15.

Co, M.J. and Mitchell, B. (2006). Entrepreneurship education in South Africa: a nationwide survey. *Education + Training*, 48(5), 348-359.

Dana, L.P. (2001). The education and training of entrepreneurs in Asia. *Education + Training*, 43(8/9): 405-416.

Duval-Couetil, N., Reed-Rhoads, T. and Haghigh, S. (2012). Engineering Students and Entrepreneurship Education: Involvement, Attitudes and Outcomes. *International Journal of Engineering Education*, 28(2), 425-435.

Ertuna, Z.I. and Gurel, E. (2011). The moderating role of higher education on entrepreneurship. *Education + Training*, 53(5), 387-402.

Farid, M.I., ElSayed-Elkhouly, S.M., and Barnes, M.J. (2011). Institutional context for entrepreneurship in Arab countries. *International Journal of Sustainable Society*, 3(3), 292-311.

Farstad, H. (2002). *Integrated entrepreneurship education in Botswana, Uganda and Kenya*. Review commissioned by the World Bank - FINAL REPORT, National Institute of Technology, Oslo, Norway: December 2002.Co and Mitchell, 2006.

Fiet, J.O. (2001). The pedagogical side of entrepreneurship theory. *Journal of Business Venturing*, 16(2), 101-117.

Fuchs, K., Werner, A. and Wallau, F. (2008). Entrepreneurship education in Germany and Sweden: what role do different school systems play? *Journal of Small Business and Enterprise Development*, 15(2), 365-381.

Ghorbani, N., Watson, P.J. & Hargis, M.B. (2008). Integrative Self-Knowledge Scale: Correlations and Incremental Validity of a Cross-Cultural Measure Developed in Iran and the United States. *The Journal of Psychology*, 142 (2): 395-412.

Goby, V.P. and Erogul, M.S. (2011). Female entrepreneurship in the United Arab Emirates: Legislative encouragements and cultural constraints. *Women's Studies International Forum*, 34(4), 329–334.

Golembiewski, R., Billingsley, K. and Yeager, S. (1976). Measuring change and persistence in human affairs: types of change generated by OD designs. *Journal of Applied Behavior*, 12, 133-157.

Henry, C. and Foss, L. (2014) Case sensitive? A review of the literature on the use of case method in entrepreneurship research. *International Journal of Entrepreneurial Behavior & research*, 21(3), 389-409.

Kaltenecker, N., Hoerndlein, C. and Hess, T. (2015). The drivers of entrepreneurial intentions - an empirical study among information systems and computer science students. *Journal of Entrepreneurship Education*, 18(2), 39-52.

Khalifa Fund (2015). *Youth and Entrepreneurship in UAE*, Report by the Khalifa Fund for Enterprise Development in collaboration with Dun and Bradstreet, retrieved on February 3, from: https://www.emiratesfoundation.ae/Content/en/files/Youthentrepreneurship.pdf

Kirby, D.A. and Ibrahim, N. (2011). The case for (social) entrepreneurship education in Egyptian universities. *Education and Training*, 53(5), 403–415.

Krueger, N.F., Reilly, M.D. and Carsrud, A.L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15, 411-432.

Kuratko, D.F. (2005). The Emergence of Entrepreneurship Education: Development, Trends, and Challenges. *Entrepreneurship Theory and Practice*, 29(5), 577-598.

Lima, E., Lopes, R.M., Nassif, V. and da Silva, D. (2014). Opportunities to Improve Entrepreneurship Education: Contributions Considering Brazilian Challenge. *Journal of Small Business Management*, 53 (4): 1033-1051.

Liñán, F. & Rodriguez-Cohard, J.C. (2008). Temporal stability of entrepreneurial intentions: a longitudinal study. *paper presented at the 48th Congress of the European Regional Science Association*, 27-31 August 2008, Liverpool, UK.

Liñán, F., Rodríguez-Cohard, J.C., Rueda-Cantuche, J.M. (2011). Factors affecting entrepreneurial intention levels: a role for education. *International Entrepreneurship and Management Journal*, 7(2), 195-218.

MacCallum, R. C., Widaman, K. F., Zhang, S. and Hong S. (1999). Sample size in factor analysis, *Psychological Methods*, 4, 84-99.

Majumdar, S. and Varadarajan, D. (2013). Students' attitude towards entrepreneurship: does gender matter in the UAE? *Foresight*, 15(4), 278-293.

Naia, A., Baptista, R., Januario, C. and Trigo, V. (2015). Entrepreneurship education literature in the 2000s. *Journal of Entrepreneurship Education*, 18(1), 111-135.

National Bureau of Statistics (2009) Labor Force Survey, UAE.

Naudé, W. (2011) *Entrepreneurship and Economic Development*, UNU-WIDER Studies in Development Economics and Policy, 1st edition, Palgrave MacMillan: Hampshire.

Obschonka, M., Silbereisen, R.K. and Schmitt-Rodermund, E. (2010). Entrepreneurial intention as developmental outcome. *Journal of Vocational Behavior*, 77, 63-72.

Peterman, N.E. and Kennedy, J. (2003). Enterprise Education: Influencing Students' Perceptions of Entrepreneurship. *Entrepreneurship Theory and Practice*, Winter 2003, 129-144.

Pittaway, L. and Cope, J. (2007). Entrepreneurship Education. A Systematic Review of the Evidence. *International Small Business Journal*, 25(5), 479-510.

Popay J., Rogers A. & Williams G. (1998). Rationale and standards for the systematic review of qualitative literature in health services research. *Qualitative Health Research*, 8(3), 341–351.

Postigo, S., Iacobucci, D. and Tamborini, M.F. (2006). Undergraduate students as a source of potential entrepreneurs: a comparative study between Italy and Argentina, pp. 218-240, in: A. Fayolle and H. Klandt (Eds.) *International Entrepreneurship Education: Issues and Newness*, Edward Elgar Publishing Limited, UK: Cheltenham.

Salamzadeh, A. Azimi, M.A. and Kirtby, D.A. (2013). Social entrepreneurship education in higher education: insights from a developing country. *International Journal of Entrepreneurship and Small Business*, 20(2), 17-34.

Shah, S.K. and Corley, K.G. (2006). Building better theory by bridging the quantitative-qualitative divide. *Journal of Management Studies*, 43(8), 1821-1835.

Sheshinski, E., Strom, R. and Baumol, W. (2007). Entrepreneurship, Innovation, and the Growth Mechanism of the Free-enterprise Economies. Princeton University Press: Princeton.

Sieger, P., Fueglistaller, U. and Zellweger, T. (2014). *Student Entrepreneurship Across the Globe: A Look at Intentions and Activities*, St.Gallen: Swiss Research Institute of Small Business and Entrepreneurship at the University of St.Gallen (KMU-HSG).

Souitaris, V., Zerbinati, S. and Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22, 566–591.

Thompson, R.C. and Hunt, J.G. (1996). Inside the black box of alpha, beta, and gamma change: using a cognitive processing model to assess attitude structure. *Academy of Management Review*, 21(3), 655-690.

Thrash, T.M. and Elliot, A.J. (2003). Inspiration as a Psychological Construct. *Journal of Personality and Social Psychology*, 84 (4): 871-889.

Thrash, T.M. and Elliot, A.J. (2004). Inspiration: Core Characteristics, Component Processes, Antecedents, and Function. *Journal of Personality and Social Psychology*, 87 (6): 957-973.

Van Praag, C.M. and Versloot, P. (2007). What is the value of entrepreneurship? A review of recent research. *Small Business Economics*, 29(4): 351-382.

Velicer, W. F. and Fava, J. L. (1998). Effects of variable and subject sampling on factor pattern recovery. *Psychological Methods*, 3, 231-251.

Von Graevenitz, G., Harhoff, D. and Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behavior and Organization*, 76: 90-112.

Wiseman, A.W. and Anderson, E. (2014). Developing innovation and entrepreneurial skills in youth through mass education: The example of ICT in the UAE, *International Perspectives on Education and Society*, (23), 85-123.