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INVESTIGATING THE IMPACT OF A SMALL BUSINESS CONSULTING COURSE ON ENTREPRENEURIAL ATTITUDES

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ABSTRACT

This study uses the Entrepreneurial Attitudes Orientation (EAO) survey to determine whether students enrolled in a small business consulting course changed their attitude towards entrepreneurship. The EAO survey was used in a pre-test at the beginning of the semester and a post-test at the end of the semester, and four other key factors (age, intention to own a business, hours worked, and semesters as full-time students) are also used to search for an explanation of change in students' attitude towards entrepreneurship. The EAO survey was administered to students in a small business consulting class as well as marketing classes, used as a control group, for seven consecutive semesters. No significant attitude change was found for the small business consulting course in the overall EAO. However, the EAO measure did find a significant change in attitude among students who aspired to own a business and who possessed a strong work ethic.

Keywords: EAO, student consulting, SBI, entrepreneurship education, entrepreneurial attitude

INTRODUCTION

Until the early 1980s entrepreneurship education was not taken seriously at the majority of colleges and universities in the U.S. and forced entrepreneurship educators to fight an uphill battle for legitimacy in higher education. The following statements from the book the The Organization Man by William H. Whyte (1957) regarding the importance of major corporations in our economy while expressing negative opinions of entrepreneurship reflects the prevailing attitude towards entrepreneurship during the 1950s and 1960s when the first entrepreneurship courses were taught.

> The fact that a majority of seniors headed for business shy from the idea of being entrepreneurs is only in part due to fear of economic risk. . . . The entrepreneur, as many see him, is a selfish type motivated by greed, and he is, furthermore, unhappy. The big -time operator as sketched in fiction eventually so loses stomach for enterprise that he finds happiness only when he stops

> being an entrepreneur, . . (Whyte, 1957)
>
> Small business is small because of nepotism and the roll-top desk outlook, the argument goes; big business, by contrast, has borrowed the tools of science and made them pay off. It has its great laboratories, its market-research departments, and the time and patience to use them. The odds, then, favor the man who joins big business. (Whyte, 1957)

Needless to say, entrepreneurship education stimulated little interest among academics, universities, and business leaders at that time. Entrepreneurship education remained a low priority in higher education until the late 70s and early 80s when the belief that entrepreneurship can be taught and learned, ". . . led to an unprecedented growth in entrepreneurship education . . . as evidenced in the increase in the number of endowed positions in entrepreneurship and in the number of colleges and universities in the United States offering entrepreneurship courses" (Florin, Karri & Rossiter, 2007). In 1975, 104 colleges and universities had entrepreneurship courses. By the mid-1980s, nearly 600 undergraduate schools had courses in entrepreneurship. Today, more than 5,000 courses are offered at 2,600 schools, and entrepreneurship education has achieved the legitimacy it sought since the 1970s.

The growing acceptance of entrepreneurship education was challenged by a long list of questions that continues to place its legitimacy at risk as an academic discipline. Katz (2003) wrote an excellent article, "The chronology and intellectual trajectory of American entrepreneurship education: 1876-1999," that records the academic struggle for legitimacy and development of a respected research stream. Due to the commitment of many professors, a rising core of young scholars entering the study of entrepreneurship, and the commitment of many leading universities, entrepreneurship education became a legitimate academic discipline. Today, it would be hard to find any college or university without at least one course in entrepreneurship. In fact, major corporations consider entrepreneurship as a cornerstone to their success in today's dynamic and highly competitive markets reversing the perspective presented in The Organizational Man.

In spite of this progress, the question of the unique contribution of entrepreneurship education still remains. Studies such as the meta-analytic review by Jun Bae et al. (2014) re-enforce our doubt regarding the effectiveness of entrepreneurship education. We certainly know that higher education does matter in the students' professional careers as average incomes for people with a bachelor degree is significantly higher than those with only a high school degree. As Florin et al. (2007) state:

> Despite this growth, the question of whether individuals can be taught to be entrepreneurial continues to generate debate in academic and practitioner circles. Whether curriculum initiatives are effectives or useful in addressing the need to develop an entrepreneurial mind-set among students is far from clear. Thus a key question arises: 'Can we define a so-called entrepreneurial perspective that can be taught throughout the curriculum? Furthermore, can we measure such a construct to assess

> our efforts at teaching it? (Florin, Karri & Rossiter, 2007).

So higher education does matters, but what is the impact of one course in entrepreneurship? This study examines the impact of an experiential learning course for aspiring entrepreneurs, and offers some insights, pedagogical recommendations, and suggested research based on its findings.

Fostering Entrepreneurship

Fostering entrepreneurship through education to produce well-educated entrepreneurs has become a high priority in public policy, because ". . . entrepreneurial talent is important to sustaining a competitive advantage in a global economy that is catalyzed by innovation" (Raguz & Dulcic, 2011). Raguz and Dulcic emphasize the need to understand the process of becoming an entrepreneur and the factors that influence students' attitude towards entrepreneurship. At least eleven other studies have also researched the influence of students' attitude towards entrepreneurship: van Gelderen et al., 2008; Soluitaris, Zerbinati and Al-Lahan, 2007; Harris, Gibson, Taylor, 2007/2008; Kerrick, 2008; Wilson, Kickul, and Marlino, 2007; Florin, Ranjan, and Rossiter, 2007; Gibson, Harris, Walker, and McDowell, 2014; Krishnan and Kamalanabhan, 2013; Vanevenhoven and Ligouri, 2013; Peterman and Kennedy, 2003 and Ismail, Jaffar, and Hooi, 2013.

Equally important to attitudes are intentions to start a business and perception of desirability and feasibility. Two studies have found that entrepreneurship education has a positive impact on both attributes: Vanevenhoren and Liqouri (2003) and Perterman and Kennedy (2003). Based on the theory of planned behavior (Ajzen, 2002), attitude towards entrepreneurship is recognized as an antecedent to the intent to start a business and perception of desirability and feasibility. Consequently, an important research question is to determine the extent to which educational programs positively affect the development of entrepreneurial attitudes (Florin, Karri, and Rossiter, 2007). Harris, Gibson, and Taylor (2007/2008) used the Entrepreneurial Attitudes Orientation (EAO) survey to examine the change in students' entrepreneurial attitude who were enrolled in a small business consulting courses. Their results supported the notion that completion of the course had an impact on the students' entrepreneurial attitude. Byabashaiha and Katono (2011) found small but significant changes in attitudes and a significant mediating role of attitudes in their study of the impact of college entrepreneurship education on entrepreneurial attitudes. Krishnan and Kamalanabhan (2013) found a direct relationship between entrepreneurial attitude related constructs and entrepreneurial competencies related factors, leading to entrepreneurial success, and life satisfaction among micro entrepreneurs.

A recent study by Fayolle and Gailly (2013) showed that the impact of entrepreneurial training programs on entrepreneurial intentions is strongly impacted by the students' initial level of intention and prior exposure to entrepreneurship. Interestingly, De Jorge-Moreno, Castillo, and Triguero (2012) found that student's entrepreneurial intention decreased in the business students when they progress in their studies and they are closer in contact with the business reality.

Despite evidence indicating the impact of entrepreneurship education, some scholars are still doubtful regarding the impact of

entrepreneurship education. In a meta-analytic review, Jun Bae et al. (2014) found that ". . . the relationship between entrepreneurship education and post-education entrepreneurial intentions was not significant" even when they ". . . analyzed moderators, such as the attributes of entrepreneurship education, students' differences, and cultural values." Hatten and Ruhland (1995) used the EAO survey to examine the change in students' entrepreneurial attitudes and used a sample from several universities; they found that students possessing high internal locus of control did develop a more positive attitude towards entrepreneurship than students with lower internal locus of control in the same entrepreneurship program. However, they did not find any other differences with the other scales of the EAO survey. A third source of doubt regarding the impact of entrepreneurship education is expressed by the SBA in a 2006 report:

> A review of recent research measuring the impact of general education on entrepreneurship and entrepreneurial performance suggests three key generalizations. First, the evidence suggesting a positive link between education and entrepreneurial performance is robust. Second, although the link between education and selection into entrepreneurship is somewhat ambiguous, evidence suggests that when "necessity entrepreneurship" and "opportunity entrepreneurship" are considered separately, and when country differences are considered, the link is less ambiguous. Finally, the relationship between education and selection into entrepreneurship is not linear in nature. The highest levels of entrepreneurship are linked to individuals with at least some college education. Education beyond a baccalaureate degree has generally not been found to be positively linked to entrepreneurship (SBA Advoacy, 2006).

Even though there is doubt regarding the direct link between entrepreneurship education and practicing entrepreneurship, De Jorge-Moreno et al. (2012) claim that entrepreneurship education does have an impact:

> "Based on a study done by Kolvereid and Moen (1997), it is shown that those students who have taken a major in entrepreneurship have revealed greater interest in becoming entrepreneurs; and these students act more entrepreneurial than other students in taking up the challenge to start up a business. Thus, it is suggested that although it may not be possible to develop entrepreneurship from education exclusively, to a certain extent, education has an effect to alter and contribute to the formation of entrepreneurship."

Without a doubt, entrepreneurship is a complex subject to teach, because it depends on the individual's self-regulated action and on characteristics that are not easy to influence. Consequently, the debate continues due to the lack of well-defined methods for assessing the effectiveness of entrepreneurship education (De Jorge-Morena et al., 2012).

STUDY'S UNDERLYING PREMISE

Uncertainty regarding the impact of entrepreneurship education remains,

however, it is widely accepted that a positive attitude with the requisite skills are essential for success in any career; entrepreneurship being no exception. As noted earlier, the Theory of Planned Behavior has become an accepted theoretical framework to assess entrepreneurial intention and to use that assessment to predict entrepreneurship. Also accepted is that a positive attitude towards entrepreneurship will increase a person's intention to engage in entrepreneurial activities. This study has three underlying premises:

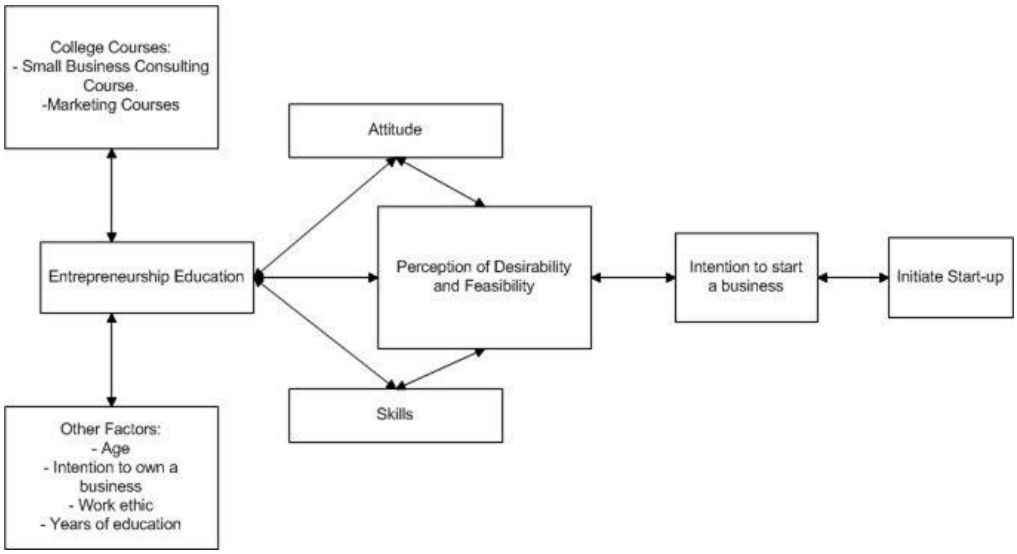
(1) Entrepreneurship education provides skills and changes attitudes that encourage and support entrepreneurship.

(2) Entrepreneurship skills and a positive attitude towards entrepreneurship must be acquired prior to the formation of entrepreneurial intentions.

(3) Entrepreneurship intentions are likely to lead to successful business venture.

Attitude and the skills form a solid basis upon which perception of desirability and feasibility as well as intentions are; once built, intentions are followed by action as shown in Figure 1.

Figure 1



The model shown in Figure 1 posits that entrepreneurship education does not directly affect a student's intentions to start a business. Instead, entrepreneurship education provides both the skills necessary to start a business and changes the student's attitude towards entrepreneurship. In addition, this model posits that both the requisite skills and a positive attitude are required to create the perception of desirability and feasibility. As such, specific entrepreneurial skills and entrepreneurial attitudes are prerequisites, to entrepreneurial intentions. Also shown in Figure 1 are the factors understudy to explain the impact of a small business

consulting course on students' attitude towards entrepreneurship. The other factors include marketing courses used as a control group and lifestyle and demographic variables that could also explain change in a student's attitude towards entrepreneurship. As De Jorg-Mareno et al. state ". . . entrepreneurship education is more than business management, it is about 'learning', which means learning to integrate experience, skills and knowledge, to get prepared to start with a new venture." P 421

Another key point illustrated in Figure 1 is that the courses and other factors are operating within the context and mediating role of the university. This suggests that the impact of the factors under study is due, in part, to the particular context the university provides to support its professors and students. The important and dynamic nature of the role that the university should play in the education of tomorrow's entrepreneurs is well stated by De Jorge-Moreno et al. (2013):

> In line with some authors, we think that the university must have a triple role: incentive; encouraging students to start their own business, developer; informing students when they express a desire to create their own business and, finally, a training role; passing on knowledge and bringing students into business models. Therefore, the role of the university should not be confined to mere academic education, but be able to develop the necessary skills in students. There is a need for creation an atmosphere that encourage students to become entrepreneurs.

Additional support for the university's role and the importance of attitude and skills in entrepreneurship education come from by Fayolle, Gailly, and Lassas-Clerc (2006) who state that entrepreneurship education consists of "any pedagogical or process of education for entrepreneurial attitudes and skills." Wong, Ho and Low (2014) examined the influence of university entrepreneurship education on students' entrepreneurial behavior, and its ability to create higher levels of intention causing students to become more involved in venture creation. They found that a student's attitude towards entrepreneurship is a measure of the student's behavioral beliefs, and they also noted that the connection between attitude and behavior is supported by Ajzen's Theory of Planned Behavior. Peterman and Kennedy (2003) examined the effect of participation in an entrepreneurship education program on students' perceptions of desirability and feasibility of starting a business. They found ". . . participants reported significantly higher perceptions of both desirability and feasibility," however, the change in perception was positively related to prior experience.

In a 2009 article, Schwarz, et al. identified ". . .three fundamental attitudinal antecedents of intent: personal attitude toward outcomes of the behavior, perceived social norm, and perceived behavioural control (self-efficacy)." Schwarz et al. also noted that attitudes are less stable than personality traits and can be changed across both time and situations. "Therefore, entrepreneurial attitudes may be influenced by educators and practitioners" (Schwarz, et al., 2009). Consequently, attitude is posited to be an antecedent of intentions and intentions an antecedent of behavior, i.e., venture start-up. Carsrud et al. (2009) simply stated the importance of attitude when they found that people shape their intentions to become entrepreneurs when

they possess favorable attitudes towards entrepreneurial acts; Van Gelderen et al. (2008) reported that students' intentions and propensity to start a business are shaped by their attitudes towards entrepreneurship; and Lüthje and Franke (2003) found that attitude toward entrepreneurship is an important prerequisite for entrepreneurial intention.

It is impressive that so many scholars have focused on the attitude-intention-behavior linkage in an effort to explain the source of entrepreneurship as well as to predict the occurrence of entrepreneurship. A key challenge facing entrepreneurship education is how to modify, change, or revolutionize the traditional academic approach to education in order to create a new generation of entrepreneurs.

RESEARCH QUESTIONS

The study's principal question: Does an experiential learning course positively impact a student's attitude towards entrepreneurship? This is an important question in light of the prevailing uncertainty regarding the impact of entrepreneurship education as well as the important role that attitude plays in the formation of a new venture. In order to answer the question, this study focuses on the impact of a 16-week small business consulting course using a pretest and posttest research design.

In order to improve the study's reliability and validity, a control group is included along with four additional factors that could also explain change in attitude towards entrepreneurship. The control group is marketing courses taught by the same professor who teaches the small business consulting course. The four additional factors are: age of student, number of semesters the student has been a full-time student, hours the students worked during the semester, and the student's intention to own a business. The control group is important as business courses are designed to provide business skills but are not designed to emphasize the new venture creation process (Liñán, 2008). Conversely, entrepreneurship graduates have been reported to be three times more likely to start a new business (Charney and Libecap, 2000).

The above two sources in addition to the literature review provided earlier in this paper provides support for the first two hypotheses:

> *H1: Students in a small business consulting course will experience a significant increase in their EAO scores.*

> *H2: Students in marketing courses will not experience a significant increase in their EAO scores.*

The basis for hypotheses regarding the four additional factors need support from other sources as EAO research focused principally on the effects of entrepreneurship education. However, some studies did reports finding that can provide support for hypotheses regarding age, semesters as a full-time student, hours worked during the semester, and intention to own a business.

Intention to own a business

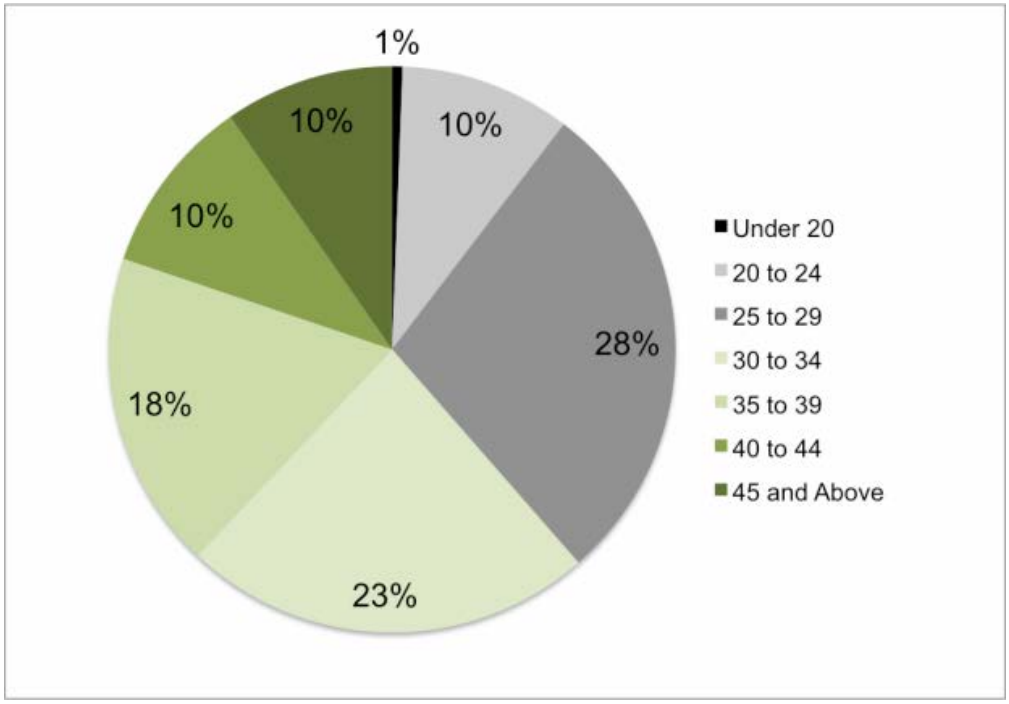
The essence of this study is based on the belief that there is a strong relationship between students' intention and students' attitude. Research reported earlier in this paper clearly supports a strong linkage between attitudes and intentions. Therefore,

H3: There is a positive relationship between students' intentions to own a business and their EAO score.

Age

None of the EAO studies reviewed for this paper focused on age as an explanatory factor. In addition, it is rare to find entrepreneurship research that examines the causal relationship between age and entrepreneurship. There are reports that show the occurrence of entrepreneurship among various age groups. At most, the analysis of age is a report showing the basic frequency analysis as show below.

Pie Graph 1: Occurrence of entrepreneurship among age groups



A Kauffman Foundation Blog, Growthology, provides some additional insight regarding age: "At any age, you have a mix of entrepreneurs who really wanted to start a company and have wanted to do so for a long time and those who opportunistically became entrepreneurs."

Adeo Resso (2011) adds another perspective concerning age and entrepreneurship:

> It does not take but one minute to look around the world and prove any thesis of a peak tech founder age incorrect. There are countless entrepreneurs over the age of 30, . . . We have romanticized the idea of a young founder because, well, it's a great story, but these stories are not the norm. in the end, classic biases of gender, race, and age need to be discarded for a real science of success.

A third perspective is contributed by Melissa Anders (2013)

> An AARP survey found that 12 percent of members age 50 and older in Michigan are seriously considering starting a business. Nationally, about 25 million people, or one in four Americans ages 44 to 70, are interested in launching a business or nonprofit in the next several years, according to a 2011 report funded by the MetLife Foundation.

As age appears to neither hinder nor explain the occurrence of entrepreneurship, it is hypothesized that there is no relationship between age and EAO.

> *H4: There is no relationship between a students' age and their EAO score.*

Semesters as a full-time student

As previously stated, De Jorge-Moreno et al. found that student's entrepreneurial intentions decreased in the business students as they progressed in their studies and they are closer in contact with business reality.

> …the Entrepreneurial intention efficiency decreases when the students of Business progress in their studies and they are closer in contact with business reality. Maybe due to personal and family pressures to seek income with less uncertainty. Moreover, the judgments inherent in the university education system in relation to lack of motivation are conveyed to students in business creation. (De Jorge-Moreno et al., 2012).

> *H5: There is a negative relationship between the students' EAO score and the length of time being a full-time student.*

Hours working as a full-time student

As reported by Gibson, Harris, Walker and McDowell (2014), there is a positive link between entrepreneurial attitudes and intentions and past business experience and exposure:

> Research has established a link between entrepreneurial attitudes and intentions and past business experience and exposure. This link may include direct work experience or indirect experience through a family business.

> *H6: There is a positive relationship between the students' EAO scores and the number of hours they work as a full-time student.*

These hypothesis will be tested under five different scenarios: (1) Students enrolled in only a small business consulting course using pretest and posttest, (2) students enrolled in only marketing courses using pretest and posttest, (3) aggregate responses of all students in both courses using pretest and posttest, (4) students enrolled in a small business consulting course versus students enrolled in marketing courses comparing only pretest responses, and (5) student enrolled in a small business consulting course versus students enrolled in marketing courses comparing only posttest responses. In addition, this study tests the four additional hypotheses regarding the impact of age, semesters as a full-time student, hours worked, and intention to run a business on the students' attitude towards entrepreneurship as measured by the EAO scale.

EAO SCALE

Measuring entrepreneurship is the first order of business for scholars and policy advocates. How much entrepreneurship do we have? How can we get more entrepreneurship? These are the two meta-questions that dominate entrepreneurship research and policy making. At the heart of these two questions is the question of how do we explain entrepreneurship? Where does it come from? The EAO scale (Robinson et al., 1991) has been used frequently to help answer these questions. Since its publication in 1991, thirty-two papers have been published using the EAO scale to explain entrepreneurship.

In order to investigate the influence of a small business consulting course on the students' attitude toward entrepreneurship, the EAO survey developed by Robinson, et al., (1991) is used as a pre-test and post-test to measure change in attitude.

As stated in the Introduction, after decades of scholarship and advocacy, entrepreneurship is finally viewed as an economic resource for all types of economies from emerging to mature economies. Decades ago, entrepreneurship faced the legitimacy challenge. Today, entrepreneurship faces the question of how do we get more of it. Since we know that entrepreneurship is a phenomenon of individual aspiration and achievement, early research focused on understanding the demographic profile and personality of those who practiced entrepreneurship. Although this research produced some interesting findings, demographic and personality research failed to provide a causal explanation for entrepreneurship which would help identify method for creating more entrepreneurship and creating entrepreneurship in places where it is most needed.

Robinson, et al's, attitude approach published in 1991 pointed scholars in a new and refreshing direction to answer important questions about entrepreneurship that the demographic and personality approaches could not answer. Neither approach provided a useable way to influence the development of entrepreneurship and predict the occurrence of entrepreneurship, because both approaches consider factors that are static or established in the past; the majority of a person's demographic profile cannot be changed and personality is greatly influenced by your early childhood. Most importantly, neither approach included the effect and/or influence of the environment, especially entrepreneurship education that became established as a legitimate approach to stimulating entrepreneurship by the 1990s.

Robinson, et al.'s, proposed attitude approach not only overcomes the many shortcomings of the demographic and personality approaches, but also "offers both theoretical and practical benefit to the study of entrepreneurship" (Robinson, et al, 1991).

The work of Robinson, Stimpson, Huefner, and Hunt (1991) was one of the first to use an attitudinal scale to predict entrepreneurial activity:

> . . . Robinson, Stimpson, Huefner, and Hunt (1991) developed the Entrepreneurial Attitude Orientation (EAO) model to measure entrepreneurial attitudes. The subscales of the EAO measure individuals' attitudes on four constructs: (1) achievement in

> business (referring to the results of starting and growing a business venture); (2) innovation in business (using innovative methods in business activities); (3) perceived personal control of business outcomes (individual's control and influence on his/her business); and (4) perceived self-esteem in business (self-confidence and perceived competency in business affairs). (Harris, et all, 2007/2008)

The first known published study using the EAO was in 1993 followed by a study published in 1995 and two studies in 1996. Since then 32 additional papers have been published using EAO including two PhD dissertations and two studies that have re-examined the reliability and validity of the EAO scale. The scale has been used to measure entrepreneurial attitude in five foreign countries, Malaysia (Ismail et al., 2013), Spain (DeJorge-Moreno et al., 2012), Caribbean (Esnard, 2011), China (Miao, 2012), and India (Krishnan and Kamalanabhan, 2013), as well as in the U.S. In addition, the EAO scale has been used to develop two new scales: Entrepreneurial opportunity recognition (EOR) (McClaine, Bhat, and Baj, 2000) and entrepreneurial drive (ED) (Florin, Karri, and Rossiter, 2007). The wide use of the EAO scale provides support for it reliability and validity in explaining entrepreneurship from an attitude perspective.

RECENT STUDY OF PARTICULAR INTEREST

Of particular interest to this study is research by Harris, Gibson, and Taylor (2007/2008) that found a small business consulting course to have a positive impact the students' attitude towards entrepreneurship as measured by the EAO scale. Harris et al. study is of particular interest to this study, because it is the most recent study of the impact of a small business consulting course on students' attitude towards entrepreneurship using the EAO scale. In fact, Harris et al. study is only the second study found in literature using the EAO scale to study the impact of a small business consulting course. The other study was reported in 1995: Hatten and Ruhland (1995).

This study follows the same basic methodology to study a similar small business consulting course at a major university located in the Midwest, and there is a lot of commonality between the two studies: both are examining the same phenomenon, change in attitude, caused by a small business consulting course using the same instrument. Both courses are taught using the same approach recommended by SBI®. The professor who taught the courses included in this study starting teaching the small business consulting course in 1982 and taught the course at the same university every semester until 2012, several years after the completion of the study period.

The difference between the two studies is the manner in which this study included a control group and measured change at the student level. Harris et al. study measured change in attitude for six courses taught at different universities during one semester, but they did not include a control group and had no method to ensure that all students completed both the pretest and posttest EAO survey. Although their findings are notable and should be taken into consideration, their findings could be biased for the following five reasons: (1) The average impact could be skewed by one or two exceptional professors rather than the content and experience of the course. (2)

The average impact could be skewed by the university context of one or two of the universities which are exceptional and will pull the average measure of the impact upward. (3) The results from a cross-sectional snapshot, i.e., one semester, are more prone to the impact of extraneous factors than a study performed over several semester where the impact of extraneous factors could cancel each other out. (4) Harris, et al. included no control group by which to compare the change found among students of a small business consulting course and other business courses. Finally, the survey did not code student responses that would confirm whether students completed both the pretest and posttest survey.

In order to improve the research design, this study administered the EAO survey to courses taught by the same professor, administered the EAO survey to students enrolled in both the student consulting course and three different marketing courses during the same semester, all courses were taught at the same university over a three-year period, and students were required to identify themselves to assure completion of the pretest and posttest surveys. Confidentiality of student's individual responses was protected. Following is a brief explanation of why the particular control variable improved the research design for this study.

First, Harris, et al. (2007/2008), study performed a pre-test and post-test of students enrolled only in a small business consulting course. They did not have a control group, i.e., students not enrolled in a small business consulting course, to determine whether the change in the students' attitude is equally likely to occur with students taking other business courses. In other words, their study lacked any control measure to account for the likelihood that other college courses could have an equal impact on entrepreneurial attitude. Without a comparison to other courses, the effectiveness of a small business consulting course to change EAO will remain debatable.

Second, they did not measure the change in attitude at the individual student level ensuring that each student in the data set completed both the pre-test and post-test. Instead, their study used an aggregate pretest-posttest comparison where 216 students completed the pretest and 142 students completed the posttest. In addition, their paper did not claim that all 142 students who took the posttest completed the pretest as some students could have enrolled late in the course or simply forgot to take the pretest but completed the posttest. They did report performing a t-test to compare the pretest sample of responding students with the posttest sample of responding students and found no difference on the criteria used to compare the two samples. However, no analysis was reported on the missing 74 students, i.e., 34% of their pretest sample. With over a third of the original students missing from the posttest, it is very likely that their findings would be significantly different had the 74 students responded. At this time, the impact of the "missing students" is only hypothetical. For instance, their significant findings could be due to the "drop-out" of 74 students whose interest in entrepreneurship was not stimulated by the consulting course thereby increasing the overall average of the 142 students who did have a positive experience and responded to the posttest. In order to overcome the response shortcoming, this study included only students who completed the both pretest and the posttest so that the measurement of change is the difference

between the individual student's responses given on the pretest with the responses the same student gave on the posttest.

Third, Harris, et al. (2007/2008), study includes students from six different universities. Although there are some inherent advantages to this type of sample, the major disadvantage is the possible extraordinary effect from one or two universities and/or professors. Conversely, this study controlled for both the unique effect of the university and professor by assessing courses taught by the same professor at the same university over seven semesters rather than measuring the effect of six different professors on six different campuses during one semester.

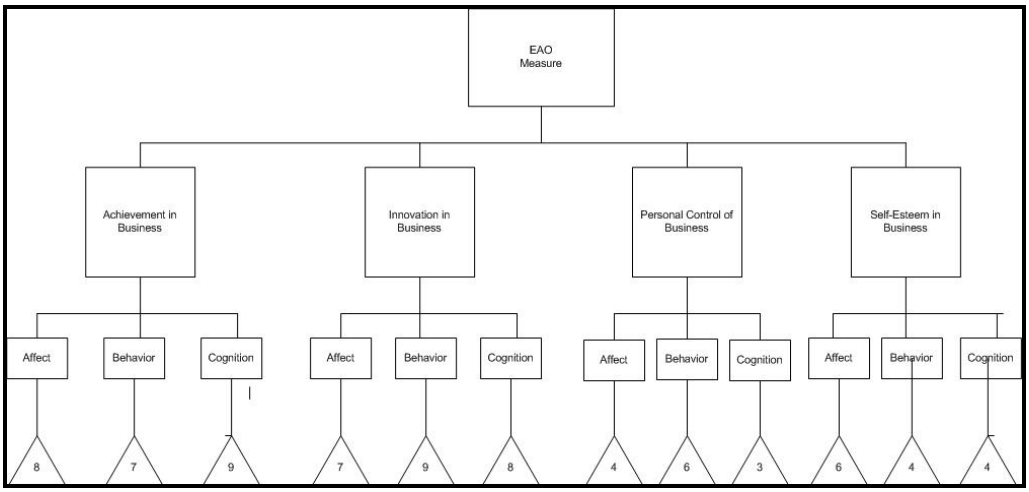
The fourth difference between the studies is the duration of the study. Harris, et al, study included courses taken at six difference universities but for only one semester. A valid hypothesis is that a longer study duration would minimize the impact of any extra-ordinary or uncontrolled event in the environment during one semester as well as lessen the influence of the professor as he or she might extend extra effort during the testing period to ensure positive results. The occurrence and/or impact of any extraordinary event during the one sixteen-week period was not reported in Harris, et al, study neither did their study claim that any extraordinary event occurred during the test period. Regardless, this study's design minimizes the impact of any one environmental event during one semester by measuring change in attitude over seven semesters.

With the above changes to the research design, the measure of change in EAO in this study will be an improved measure of the net change between students taking the small business consulting courses and students taking marketing courses.

EAO Scale Modification

The EAO scale is constructed from a base of 75 questions, 13 of which are reverse scale. Diagram 1 shows the number of questions used to measure each sub-construct (affect, behavior, and cognitions) as well as the four constructs used to measure to measure EAO.

Diagram 1: EAO Measure showing constructs, sub-constructs, and number of questions for each sub-construct.



Two variations were made to the original EAO measure. The 1991 article reported that the respondents were asked to indicate how much they agree with the 75 statements by "circling a number between '1' and '10' where '1' indicates that you strongly disagree with the statement and '10' indicates you strongly agree with the statement." (Robinson, Stempson, Huefner, and Hunt, 1991). Based on this instruction, it implies that researchers used an unlabeled scale. Due to the nature of the population under study, it was decided to modify the scale by using a labeled scale rather than an unlabeled scale. Second, students were given the option to enter a "No Opinion" response, because the scale was originally designed to measure the EAO between entrepreneurs and non-entrepreneurs and no to differentiate the EAO among undergraduate college students. Therefore some of the questions may not apply to students in their academic setting, and students were given the opportunity to skip any question by indicating "No Opinion." A similar modification was also used in a study of student's entrepreneurial attitudes. Florin, Karri, and Rossiter (2007) modified the EAO scale before administration, because they believed several questions did not apply to students:

> Given our focus on undergraduate business education, we adapted the Entrepreneurial Attitude Orientation (EAO) scale developed and tested by Robinson et al. (1991). As the EAO scale was constructed with entrepreneurs and nonentrepreneurs in mind, we made changes where necessary to suit the school context. Scale items that were highly specific to practicing entrepreneurs were eliminated or modified so that the object was the school environment and not the work environment. (Florin et al., 2007).

It is believed that giving the students the option to opt-out of answering the question if they do not believe it fits their particular situation, produced a more reliable and valid measure of the students' attitude rather than forcing them to express an attitude when they may not have the experience or situation to express such an attitude. The following scale shown in

Figure 2 was used to measure the students' attitude.

Figure 2

Label	Strongly Disagree	Disagree	Moderally Disagree	Slightly Disagree	Slightly Agree	Moderally Agree	Agree	Strongly Agree	No Opinion
Coded Value	1	2	3	4	5	6	7	8	9

For data analysis, "9" was coded as a missing value so it could be eliminated from the statistical analysis of the EAO measure, however giving the missing value a real number allowed the "No Opinion" responses to be analyzed. The following tables provide a summary of the analysis of the "No Opinion" responses. Table #1 summarizes the number of questions that had "No Opinion" responses, and Table #2 provides the six questions that were skipped by 10% to 15% of the time.

Table 1: Summary of Questions with "No Opinion" Responses

% of Question with "No Opinion" Selected	Number of Questions with % of "No Opinion Responses	Number of Respondents with "No Opinion"
Less than 1%	5	1-3
1% to 4.9%	42	4-19
5% to 9.9%	22	20-33
10% to 15%	6	40-61
Maximum Percent: 15.17%	Total: 75 questions	Maximum: 402 Responses[1]

Table 2: Questions skipped 10% to 15%

Question Position in Questionnaire	Questions	Number of times a "No Opinion" Response" was given.
41 of 75 questions	Even though I spend some time trying to influence business events around me every day, I have had very little success.	50
43 of 75 questions	Most of my time is spent working on several business ideas at the same time.	40
47 of 75 questions	I usually delegate routine tasks after only a short period of time.	58
64 of 75 questions	I take an active part in community affairs so that I can influence events that affect my business.	61
68 of 75 questions	My knack for dealing with people enables me to create many of my opportunities	43
76 of 75 questions	I enjoy being a catalyst for change in business affairs	51

[1] 402 "No Opinion" responses represent 2.7% of the total possible responses from the 201 respondents included in this analysis: 201 respondents times 75 questions/respondent = 15,075 possible responses.

As will be discussed later in this paper, the students are enrolled in the college of business from an urban university in the Midwest; approximately 75% work at least 10 hours per week during the semester of which 40% work 20 hours or more while going to school full-time. In addition, the students are undergraduate junior and senior; half are 22 years old and over with only 3.7% are 30 or older. Consequently, it is expected that a significant percent of the students would have relevant business experiences and be able to answer most, if not all, of the 75 questions. However, forty-six percent of the students are 21 or younger and 27% work fewer than 10 hours per week so it is equally likely that a significant number of students will lack sufficient business experiences to answer all 75 questions.

METHODOLOGY

Participations are students enrolled in a small business consulting course and marketing courses at an urban university located in the midwest during seven different semesters starting with the 2008 Fall Semester and ending with the 2011 Spring Semester, including one summer semester, 2009 Summer.

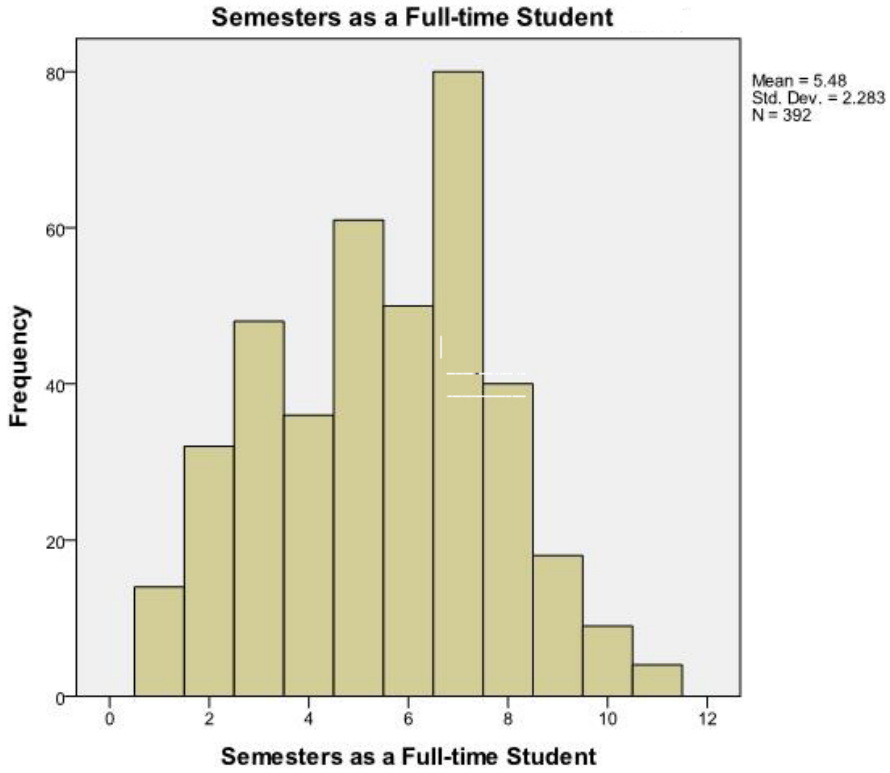
The students are representative of an undergraduate school student population. Table 3 reports that 46% of the students aged 21 or younger; 49.8% aged 22 to 29; and only 3.7% aged 30 or older reflecting the expected age range for undergraduate business students.

Table 3: Respondents Ages Range

		Frequency	Percent
Valid	21 or younger	187	46.5
	22	81	20.1
	23	49	12.2
	24	12	3.0
	25	17	4.2
	26	11	2.7
	27	3	.7
	28	13	3.2
	29	4	1.0
	30 or older	15	3.7
	Total	392	97.5
Missing	System	10	2.5
Total		402	100.0

The Graph 1 reports number of semesters the students have attended the university under study as full-time students and shows the sample is fairly representative of new students to experienced students at the particular university.

Graph 1: Frequency Distribution of Semesters as Full-time Students[2]



[2] Graph 1 includes students who entered the university as freshman as well as students who transferred to the university from community colleges or other 4-year universities. Since all students in the courses under study are junior or seniors, it is likely that students with four or fewer semesters are transfer students.

A third attribute shown in Table #4 reports that the students at this urban university regularly work during the semester thereby gaining business experience through internships, part-time jobs, and full-time jobs. As previously stated, many students included in the sample are likely to experience business and/or entrepreneurial situations measured by the EAO.

Table 4: Hours worked per week

		Frequency	Percent
Valid	10 or less hours	111	27.6
	11-15	57	14.2
	16-20	75	18.7
	21-25	52	12.9
	26-30	46	11.4
	31-35	21	5.2
	36-40	15	3.7
	40 or more	15	3.7
	Total	392	97.5
Missing	System	10	2.5
Total		402	100.0

Student data for this project was generated via a web-based survey of students who had the same professor for a small business consulting course and three marketing courses: marketing research, consumer behavior, and personal selling. Pretest and posttest responses were collected from 201 students; fifty students were students from the small business consulting courses and 151 students from the marketing courses.

In order to match the pretest and posttest responses, each student was given a unique identifier so that a t-test of the difference is measured as the actual difference in the pre-test and post-test for each student rather than an average of the aggregate response of all students who took the pretest and posttest as in the Harris et al. study. Consequently, students who took the pretest and failed to take the posttest, were eliminated by the study, and no student who took only the posttest was included in this study. In addition, several students who did complete the pretest and posttest were eliminated from the sample, because they were students in both the small business consulting course and the marketing courses. These students were eliminated to ensure that the two samples were mutually exclusive so the average impact of the EAO measure for each type of course would not be impacted by having common students.

ANALYSIS

As stated under hypothesis, five different scenarios are used to test Hypothesis 1 that entrepreneurial attitudes of small business consulting students will be strengthen as a result of completing a semester-long student consulting course. A t-test was performed to compare the students' change in attitude as measured by the overall EAO measure and the EAO constructs and sub-constructs were used to continue the effort to search for differences at all three levels of the EAO scale. The following five scenarios were used as a basis for analysis:

(1) Students enrolled in only a small business consulting course

comparing pretest versus posttest results.

(2) Student enrolled in only marketing courses not related to the small business consulting course or other entrepreneurship courses comparing pretest versus posttest results.

(3) Aggregate differences for all students comparing pretest and posttest results.

(4) Students enrolled in a small business consulting class versus students enrolled in marketing courses comparing only pretest results.

(5) Students enrolled in a small business consulting class versus students enrolled in marketing courses comparing only posttest results.

In addition to testing the above five scenarios, an analysis was made to determine the extent to which other factors could explain change in a student's attitude towards entrepreneurship. A t-test was used to determine the differences on four other variables: age, semesters as full-time students, hours worked while going to school, and their intentions to own a business. As a follow-up to the t-test analysis searching for differences between the students enrolled in the two different types of courses, a correlation analysis is used to verify the t-test findings as well as to gain a better understanding of the strength of the relationships.

RESULTS

The first row of Table 5 reports the relationships between the change in students' attitude towards entrepreneurship as measured by the EAO scale and the six factors under study. Four of the six hypotheses regarding the EAO scale and the factors under consideration are supported by these findings:

H1: Students in a small business consulting course will experience an increase in their EAO scores. This hypothesis is not supported as the analysis did not find any significant change in the students' attitude towards entrepreneurship as a result of completing a small business consulting course.

H2: Students in marketing courses will not experience a significant increase in their EAO scores. This hypothesis is supported as this analysis did not find any change in the students' attitude towards entrepreneurship as a result of taking marketing courses.

H3: There is a positive relationship between students' intentions to own a business and their EAO score. This hypothesis is supported as this analysis did find a change in the students' attitude towards entrepreneurship if they aspired to own a business.

H4: There is no relationship between a students' age and their EAO score. This hypothesis is supported as the analysis did not find any relationship between age and attitude towards entrepreneurship.

H5: There is a negative relationship between the students' EAO score and the length of time being a full-time student. This hypothesis is not supported as no relationship, either positive or negative, was found between the students' academic tenure as a student and their attitudes towards entrepreneurship.

H6: There is a positive relationship between the students' EAO scores and the number of hours they work as a full-time student. This hypothesis is supported as the analysis did find a change in the students' attitude towards entrepreneurship and the hours they worked.

The results provide do not support for the principal hypothesis of this study (H1) that a small business consulting course will have a positive impact on a student's attitude towards entrepreneurship. For some, this finding may be disappointing, however, the self-selection bias, which will be discussed later, offers an explanation for this finding and is worthy of further consideration. In regards to marketing students' change in attitude towards entrepreneurship, the finding of no impact was expected and found.

As previously discussed, other EAO studies have used the EAO scale to search for an explanation of attitude towards entrepreneurship caused by other factors than courses offered in an entrepreneurship program. Also as previously reported, a number of relationships were found with factors that had nothing to do with entrepreneurship education. Likewise, this study also found a positive relationship with two factors, intentions to own a business and hours worked. As shown in Tables 7 and 10, students were placed into one of two groups regardless of the course enrolled. Therefore, the students' intentions and work ethic explains the students' change in attitude towards entrepreneurship rather than a particular course. This finding is consist with the findings of other studies discussed earlier in this paper that entrepreneurship education must consider and in some way include the background, experiences, and aspiration that students bring to their college campus.

Table 5: EAO, EAO Construct, and EAO Sub-construct T-tests

	Five Difference Scenarios					Four Variable Analyses			
Column Number	1	2	3	4	5	6	7	8	9
	Student in Consulting Course	Students in Marketing Courses	All Students: Pre-test vs. Post-test	Pre-test: Consulting vs. Marketing	Post-test: Consulting vs. Marketing	Intention to Own a Business	Age	Semesters - Full-time Student	Hours worked per Week
EAO						.013**			.005*
Achievement									.020**
Affect	.037**				.087***				.015**
Behavior			.098***						
Cognition						.029**			.024**
Innovation		.085***	.085***	.023**		.000*	.068***		.052***
Affect				.090***		.014**	.005*		
Behavior		.038**	.074***	.031**		.000*	.027**		
Cognition		.022**				.002*			.084***
Personal Control						.009*			.035**
Affect						.000*	.036**		.089***
Behavior									.014**
Cognition			.054***		.061***				
Self-Esteem								.080***	.012**
Affect					.098***				
Behavior								.003*	.002*
Cognition	.055***				.017**				

99% Confidence level - ***
95% Confidence level - **
90% Confidence level - ***

The results are reported at the 99% and 95% confidence level as well as the 90% confidence level. Due to the exploratory nature of this study and the relatively small sample size, results found at the 90% confidence level should be considered in future studies and therefore is provided in the table.

Even though no significant relationship at the 90% confidence level or higher was found using the EAO scale for seven of the nine scenarios, the EAO constructs and sub-constructs can be used for further analysis. As discussed in the EAO scale section, the EAO scale is compressed of four constructs: Achievement, innovation, personal control, and self-esteem. At the construct level of analysis, seventeen significant relationship were found among EAO's constructs and sub-constructs levels although no significant relationships were found at the 99% confidence level. Instead seven relationships were significant at the 95% level and the remaining ten relationships are significant at the 90% level. Table #5A reports the mean values for all the significant relationships reported in Table #5 for the five scenarios shown in columns 1-5 and provides an interpretation of each significant relationship.

Table 5A: Mean Values for Significant Relationships Reported in Table 5, Columns 1-5

Scenario #1: Student enrolled in only a small business consulting course

EAO Construct or Sub-construct	Sign.	Pre-test Mean	Post-test Mean	Interpretation
Achievement-Affect	0.037	55.53	52.77	Both measures decreased after the course.
Self-Esteem-Cognition	0.055	27.67	26.36	

Scenario #2: Students enrolled in only marketing courses

EAO Construct or Sub-construct	Sign.	Pre-test Mean	Post-test Mean	Interpretation
Innovation	0.085	6.24	6.37	All measures increased after the course.
Innovation-Behavior	0.038	43.25	44.70	
Innovation-Cognition	0.022	55.18	56.54	

Scenario #3: All students: pre-test versus post-test

EAO Construct or Sub-construct	Sign.	Pre-test Mean	Post-test Mean	Interpretation
Achievement-Behavior	0.098	37.49	38.52	Increased after the course
Innovation	0.085	6.44	6.34	Both measures decreased after the course.
Innovation-Behavior	0.074	45.63	44.00	
Personal Control-Cognition	0.054	16.27	17.03	Bother measures increased after the course.
Self-Esteem-Cognition	0.023	27.02	27.78	

Scenario #4: Pre-test only - Students in a small business consulting versus marketing courses

EAO Construct or Sub-construct	Sign.	Mean: Consulting Students	Mean: Marketing Student	Interpretation
Innovation	0.023	6.51	6.24	Students in the small business consulting course had higher pre-test averages for all three measures.
Innovation-Affect	0.090	47.00	45.69	
Innovation-Behavior	0.031	45.87	43.26	

Scenario #5: Post-test only - Students in a small business consulting vs. marketing courses

EAO Construct or Sub-construct	Sign.	Mean: Consulting Students	Mean: Marketing Student	Interpretation
Achievement-Affect	0.087	52.77	54.62	Marketing students had higher averages for three of the four post-test measures.
Personal Control-Cognition	0.061	16.11	17.18	
Self-Esteem-Affect	0.098	26.89	25.82	
Self-Esteem-Cognition	0.017	26.37	27.63	

In addition to the interpretation provided in Table 5A, the following four conclusions can be drawn: (1) Marketing courses had a positive impact on students attitude towards innovation while the small business consulting course was found to have no impact; (2) the small business consulting course had a negative impact on students' attitude towards achievement and self-esteem; (3) Neither course had an impact on personal control; (4) the overall, pre-test versus post-test analysis showed that both types of course work did have some impact on all four EAO constructs suggesting a multi-discipline approach will have a greater impact on attitude.

In an effort to determine the extent to which students in the small business consulting class differ from students in marketing classes, a t-test was also used. Table #6 shows that age and the intent to own a business someday are significant differences between the two student groups whereas no difference was found between the number of semesters the student was a full-time student at the university and number of hours the student worked during the semester.

Table 6: Difference between Consulting and Marketing Students

Variable	Student Groups	Mean	Sign.	Interpretation
Intention to own a business	Consulting Students	2.34		Students in the consulting course have a stronger intention.
	Marketing Students	1.61	0.000	
Age	Consulting Students	4.21		Students in the consulting course are older.
	Marketing Students	2.69	0.000	
Semesters as full-time student	Consulting Students	5.81		No difference
	Marketing Students	5.37	0.104	
Hrs/wk worked during semester	Consulting Students	3.31		No difference
	Marketing Students	3.11	0.403	

Note: See Table 7 through 10 for the frequency analysis of each of the above four variables in order to interpret the mean value.

The findings reported in Table 6 support the "self-selection bias" noted by several scholars of entrepreneurship education (Liñán, 2004, McMullan & Long, 1987; Noel, 2002) as well as Jun Bae et al. who reported the "Selection Effect of Pre-Education Entrepreneurial Intentions" in their 2014 paper:

> There is one further possibility that could be considered in order to understand the entrepreneurship education-entrepreneurial intentions relationship, which is reverse causation. First, research on entrepreneurship education rests on the assumption that students enrolled in entrepreneurship courses are randomly selected. However, it is possible that a student who desires to be an entrepreneur would purposely enroll in entrepreneurship courses. . . . Although entrepreneurship education in our study assumes that students do not have experience starting their own business, some scholars have redirected our

> attention to the role of beliefs prior to enrolling in entrepreneurship education (Oosterbeek et al (2010).; von Graevenitz et al). For example, von Graevenitz et al. demonstrate that there is a strong and positive correction between ex-ante beliefs and ex-post intentions. In addition, changes in intentions during entrepreneurship education are less likely to occur if a student's perceived, pre-course feasibility of launching a business is strong and consistent (e.g. negative or positive). These empirical findings show that students may not change their initial entrepreneurial intentions due to the entrepreneurship education they receive.

The above quote from Jun Bae et al. paper and the findings as reported in Table 6 that students in the small business consulting course have significantly stronger intentions to own a business than students in marketing course does offer an explanation why the small business consulting course had no positive effects on entrepreneurial attitudes; because they already have a strong positive attitude towards entrepreneurship, significantly higher than students enrolled in the marketing courses as shown in Table 6. In fact the pre-course condition of having a high attitude toward entrepreneurship, i.e., owning one's own business, could explain why the only significant effect of the small business consulting course were negative for two of the EAO sub-constructs (Achievement-Affect and Self-Esteem-Cognition) as the experience of trying to solve actual business problems of small business owners may have dampened their enthusiasm a bit as the difference between the pretest and posttest is small but significant. Bringing a touch of reality to the dreams and aspirations of young entrepreneurs is one of the goals of a small business consulting course, and these negative findings may provide proof that the small business consulting course is achieving its objectives.

In addition, Table 6 reports that the students in the small business consulting course are significantly older than students in the marketing courses. This finding suggests that the students in the small business consulting course have more years of work experience even though they work the same number of hours during a semester. Consequently, their attitudes towards entrepreneurship would be more established do to their age and additional work experience and less likely to effected by one college course.

Other Factors Explain EAO

A binary variable was created for and intention to own a business, age, semesters as a full-time student, and hours worked in order to determine whether the EAO scale and its constructs/sub-constructs could reveal differences between students on these attributes. Tables 7, 8, 9, and 10 show how the four variables in Table 6 are re-coded in order to test for the impact of these variables on student's EAO. The results of the EAO analysis with these four variables are shown in Table 5, Columns 6-9.

Table 7: I will run my own business someday

		Frequency	**Recoded Value**	Valid Percent	Cumulative Percent
Valid	Definitely not	5	**1**	1.3	1.3
	Probably not	40	**1**	10.2	11.5
	Maybe	111	**1**	28.3	39.8
	Probably yes	93	**2**	23.7	63.5
	Definitely yes	143	**2**	36.5	100.0
	Total	392		100.0	
Missing	System	10			
Total		402			

Table 8: Age

		Frequency	Recoded Value	Valid Percent	Cumulative Percent
Valid	21 or younger	187	**1**	47.7	47.7
	22	81	**2**	20.7	68.4
	23	49	**2**	12.5	80.9
	24	12	**2**	3.1	83.9
	25	17	**2**	4.3	88.3
	26	11	**2**	2.8	91.1
	27	3	**2**	.8	91.8
	28	13	**2**	3.3	95.2
	29	4	**2**	1.0	96.2
	30 or older	15	**2**	3.8	100.0
	Total	392		100.0	
Missing	System	10			
Total		402			

Table 9: Semesters as a Full-time Student

		Frequency	Recoded Value	Valid Percent	Cumulative Percent
Valid	first semester	14	**1**	3.6	3.6
	2nd semester	32	**1**	8.2	11.7
	3rd semester	48	**1**	12.2	24.0
	4th semester	36	**1**	9.2	33.2
	5th semester	61	**1**	15.6	48.7
	6th semester	50	**2**	12.8	61.5
	7th semester	80	**2**	20.4	81.9
	8th semester	40	**2**	10.2	92.1
	9th semester	18	**2**	4.6	96.7
	10th semester	9	**2**	2.3	99.0
	11 semesters or more	4	**2**	1.0	100.0
	Total	392		100.0	
Missing	System	10			
Total		402			

Table 10: Hours/week of work

		Frequency	Recoded Value	Valid Percent	Cumulative Percent
Valid	10 or less hours	111	1	28.3	28.3
	11-15	57	1	14.5	42.9
	16-20	75	2	19.1	62.0
	21-25	52	2	13.3	75.3
	26-30	46	2	11.7	87.0
	31-35	21	2	5.4	92.3
	36-40	15	2	3.8	96.2
	40 or more	15	2	3.8	100.0
	Total	392		100.0	
Missing	System	10			
Total		402			

The results of the t-test analysis of the EAO measure with the above four binary variables is reported in Table 5, Column 6 through 9. The results show a positive relationship between the EAO scale and intentions to own a business and the hours

the student worked during the semester. The t-test used to compare the pretest and posttest entrepreneurial attitude of all students based on the above four variables does reveal that intentions and how work during the semester, work ethic, does have a significant impact on students' entrepreneurial attitudes during the one semester at the same university with the same professor regardless of course. This finding implies that the change in the students' entrepreneurial attitude was not due to the particular course, the university, or the professor. Instead, this finding implies that the change in entrepreneurial attitude as measured by the EAO scale is due to their intentions to own a business and the number of hours the students worked during the semester as Table 5 reports in the first row of Column 6 and 9. In addition to the significant relationship with the overall EAO measure, the students' intention to own a business was positively related with two of EAO's constructs and five sub-constructs. However, the strongest connection with the EAO measure is shown by the number of hours per week students worked as this variable shows a significant relationship with all four of EAO's constructs and six of its twelve subcontracts. This last finding is an exciting finding: One can see that full-time student, working 20-30 hours per week while studying to meet the university's academic standards, to be "hitting on all cycles" that drive a positive attitude towards entrepreneurship. This finding also support the hypothesis that the students with the strongest attitude towards entrepreneurship are those who are active on campus and off-campus. As will be discussed later, this finding supports the use a blended learning context supported with the best available digital technologies and media.

Interestingly, age shows a relationship with EAO's innovation construct, two innovation sub-contracts, and one personal control sub-construct, while semesters as a full-time student was only related to EAO's self-esteem construct and one self-esteem sub-construct. This finding may attest to the personal value of completing a college education to a person's sense of self-worth.

One final analysis was performed using the EAO measure. Since the four variables used to differentiate the two student groups are measured on the interval scale as is the EAO scale, EAO constructs, and sub-constructs, a correlation test was used to verify the t-test relationships reported in Table 5 and to gain a better understanding of those relationships.

Table 11: Correlation Analyses with EAO, EAO Constructs, and EAO Sub-constructs

	Intention	Age	Semesters	Work
EAO	.216			.155
	.001			.023
Achievement				
Affect				
Behavior				
Cognition	.125			
	.020			
Innovation	.261			
	.000			
Affect	.164	.126		
	.002	.020		
Behavior	.242			.116
	.000			.043
Cognition	.172			
	.002			
Personal Control	.195			.136
	.001			.021
Affect	.237			
	.000			
Behavior	.131			.135
	.023			.019
Cognition				
Self-Esteem		.150		
		.007		
Affect				
Behavior		.154	-.118	.128
		.003	.024	.014
Cognition		-.136		
		.009		

The correlation analysis is reported in Table 11. The findings are consistent with the t-test reported in Table 5 as intention to own a business and working while attending college are both positively correlated with the EAO scale as well as many of EAO's constructs and sub-constructs. One additional finding of interest is that all the correlations are very weak even though all are significant at either the 95% or 99% confidence level. This finding of a weak correlation is expected from the perspective that many factors influence a change in attitude as De Jorge-Moreno et al., (2012) state: "Certainly, entrepreneurship is considered a complex subject to study in the context of teaching and learning because it depends on the individual's self-regulated action and on characteristics that may not be easy to influence." It is unlikely that the students' intentions or work ethic are the only factors that would have an impact on a student's attitude. Certainly we know that some events in life do have significant, life-

changing, impact on our attitudes, such as, a birth of a child or the death of a spouse. However, none of the variables measured in this study would be consider as a life-changing event, and it is not unexpected to find that these variables have little impact on the students' attitude towards entrepreneurship.

Conclusions and Implications

The dual focus on attitude and skills for entrepreneurship education ascribed to by many scholars quoted in this study may have a more extensive impact on entrepreneurship education than shown in the basic model proposed in Figure 1. Placing attitude as equally important to skills, or more important than skills as reflected in the following quote, places a considerable challenge on the shoulders of faculty in their attempt to educate future entrepreneurs. The importance of attitude as central to entrepreneurship education is clearly stated by Florin, Karri & Rossiter (2007):

> In other words, learning a relevant skill is not sufficient to promote action; students need to perceive that the application of the skill is feasible and that an entrepreneurial approach is desirable. Thus, a focus on developing a positive attitude towards entrepreneurial behavior appears to be central to entrepreneurship teaching and learning.

Byabashaija & Katono (2011) drew the following conclusion in their paper that studied the impact of entrepreneurship education on attitudes and intentions by providing similar implications regarding the need to focus on the qualitative aspects of education: "The curriculum of entrepreneurship education needs to be structured in ways to demonstrate feasibility of entrepreneurship as a career. From the study, it is clear that of all the variables investigated, it is perceived feasibility that drives entrepreneurial intentions more than others."

Higher education has been teaching skills, i.e., models, principles, and strategies, since its existence while attitude has remained the responsibility of the student and his or her family. Higher education has well-developed methods for assessing skill development resulting from a particular course, curriculum, or college major. If a student's skill is found to be deficient, remedial action can be prescribed to help the student become proficient in a particular skill. Entrepreneurship education enjoys no such luxury as it takes on the challenge of teaching attitude, if of course, attitude can be taught.

The good news is that this study found that students' attitude towards entrepreneurship can change during one semester, and the change in attitude occurred within the university context. The bad news for entrepreneurship educators is that the change was not found to be a related to the students' particular coursework whether the courses are marketing courses or a small business consulting course. Instead, the students' change in attitude is explained by intentions to own a business and work ethic they brought to the college campus rather than the skills acquired in any course. One positive finding for entrepreneurship educators to build upon is the finding that the university courses did have a positive

impact on several EAO constructs and sub-constructs suggesting that skill-focused courses have at least a partial impact on attitude.

In fact, the small business consulting course is not designed to change a student's attitude toward entrepreneurship. Instead, the course is designed to develop the students' analytical skills by having them apply financial, management, marketing, and strategic models to solve the small business' particular problem. Following is the statement of purpose from the Small Business Institute® website:

> The purpose of the SBI program is to provide high quality business consulting to clients requesting assistance while providing an extraordinary learning experience for college and university students through the field case consulting model . . . High quality business consulting - - - the object f the SBI program - - is comprised of direct contact between the student team and the client, detailed analysis of the client's business/concept, thorough research, and a useful case/project report. Each report - - the ultimate product of the program -- is tailored to the individual client's business and embodies sound business management principles by the client's actual business needs.

The goal is to have students learn the inner workings of a small business and its strategic challenges by working directly with the owner. The student's final consulting report is expected to conform to exacting standards followed by a formal and professional-level presentation to the owner. Increasing a student's attitude towards entrepreneurship is not a stated goal of the SBI program nor is the direct intent of engaging students in performing consulting work for small businesses. Skill development and learning to apply business model to solve the problems for the small business owner are two worthy goals of the course. So it should not be surprising to find that the student's attitude towards entrepreneurship was not impacted as the course is not designed to allow students to pursue their own business venture.

One conclusion that can be drawn from the findings is that students' attitude towards entrepreneurship are impacted more by what professors do not teach than what professors teach. Many educators who read this statement may be dismayed by such a claim as every professor teaches with the belief that their courses do make a difference for their students. However, the feeling of dismay may be misplaced for entrepreneurship courses as our initial belief that an entrepreneurship course should increase the student's positive attitude towards entrepreneurship is only a function of our expectations in this case. Before being consumed by the dismay, we need to step back and re-consider the insights provided by Jun Bae et al. (2014) when they discussed the likelihood that students' interest in entrepreneurship courses is due to an already existing positive attitude towards entrepreneurship. Consequently, students on our campuses arrive with a positive attitude towards entrepreneurship. Most likely they are looking for "something else" from their university courses and campus experiences. As previously stated, a way to incorporate their off-campus activities and interests with their campus courses and experiences would be to use a blended approach for entrepreneurship

education as the tools of distance learning have become advanced and user friendly.

Instead of expecting entrepreneurship courses to change a student's attitude towards entrepreneurship, we need to examine other expected outcomes from entrepreneurship courses and design courses to achieve those outcomes. In an effort to answer this question, Florin et al. (2007) conducted a focus group of graduating students to discuss their experiences during their college tenure. The students were asked to list the opportunities that they felt helped them develop a positive attitude towards entrepreneurship. The list of opportunities was classified by the authors as shown below:

- Initiatives that show entrepreneurial proactive behavior:
  - membership in the entrepreneurial club
  - participation in the elevator pitch competition and business plan competition
  - course taken in starting and growing a small business
  - creating or leading student organizations
  - participating in extracurricular activities such as organizing school wide events
  - taking more courses than required for graduation
  - pursuing a double major
- Academic initiatives that provide opportunities for ED (entrepreneurial drive) development:
  - participate in the study abroad program
  - taking course with simulation game competitions where students had to start and manage the growth of a business
  - taking courses that develop people skills, such as personal selling
  - taking organizational behavior course that use experiential learning tools
  - doing internships at local businesses where students work for the business and conduct a project supervised by a faculty member for credit.
- Outreach initiatives that provide for entrepreneurial drive:
  - participating in the study abroad program
  - doing volunteer work at nationally recognized nonprofit organizations as part of a sociology course for credit

A full discussion of the above education experiences is beyond the scope of this paper. However, the list of opportunities certainly go beyond the traditional academic approach of the university, and the list include many elements found in today's leading university entrepreneurship programs.

Entrepreneurship education needs a different paradigm than offered by the traditional academic approach. Although the academic approach is still needed, it is clear that universities need to develop an educational program that is specific to building both the skill as well as the attitudes necessary for the success of today's aspiring entrepreneurs. What makes entrepreneurship education especially challenging is the importance of attitude, intentions, perceived desirability, and perceived feasibility. What creates a need for a new paradigm for entrepreneurship education is that our students must also be

proficient with all the business skills. The top entrepreneurship programs are working hard to create a new paradigm for entrepreneurship education. It is an exciting time for entrepreneurship educators!

Future Research

Certainly, there is a need to understand the sources of entrepreneurial intentions at the student level as it is crucial for educators and policymakers to develop appropriate educational policies and programs to improve the performance of entrepreneurship education. Should entrepreneurship education follow the same basic academic model of other business disciplines of accounting, marketing, management, and finance that focus on knowledge and skill development and work under the assumption that students will find a job and excel by working within the confines of an established corporation? Another question is how do we measure the success of an entrepreneurship education? Do we measure the success course-by-course, e.g, the impact of a small business consulting course on students' attitude towards entrepreneurship or are there more relevant measures of success? Or, do we simply measure the number of students who start a business after graduation? These are tough questions to answer, but the answers to these questions are the essential to the underpinning of entrepreneurship education and cannot be ignored.

Within the framework of this study, the following research questions should be explored:

(1) To what degree is the EAO scale an accurate measure of entrepreneurial attitude among college students? As stated earlier, the EAO scale measures the difference between practicing entrepreneurs and non-entrepreneurs. However, two studies did specifically modify the EAO scale to measure attitude change for students taking a college course. In addition, the EAO scale is used to measure attitude change in five different countries, but the scale's author never claimed that the scale is valid for multi-cultural analysis. There appears to be a need to develop a scale specifically designed to measure change in attitude among college students as well as change across cultures.

(2) How do we measure the effects of entrepreneurship education if skills are only part of the solution? As De Jorgen-Moreno et al. (2012) state, ". . . the possible effectiveness of entrepreneurship education for university students should be measured not just in terms of the acquisition of entrepreneurial skills, but in increased motivation, development of creativity, self-confidence . . ." How do we measure motivation, creativity, and self-confidence. Grading based on skill proficiency will certainly underestimate any achievement in the other three requisite capabilities.

(3) Given the understanding that there is something unique about the entrepreneur who can profit in the midst of market chaos, what drives some to pursue entrepreneurship and success while others either fail or never begin? This is a difficult question to answer, but may be at the heart of entrepreneurship education. Which is the most effective explanation: Skill or attitude, or should it be both?

(4) Considering the importance of skills and attitude, a productive research question would investigate the hypothesis that students in a small business consulting course will experience a greater increase in skills than a change in attitude. As previously discussed, the small business consulting course is focused on applying the most appropriate marketing, management, and financial models to assess a small business than it is focused on changing the students' attitude towards entrepreneurship. If true, this research should find a significant increase in the students' skills rather than attitude.

Entrepreneurship education is entering a new and exciting period of growth and development supported by leading universities willing to try new paradigms. Universities are also able incorporate the benefits of today's digital age that facilitates engagement beyond the university context. For those universities who continue their effort to reach beyond the campus, to engage students, to give students both the skills and the motivation to succeed, they will accomplish their goal to educate the next generation of entrepreneurs!

REFERENCES

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(1), 1-20.

Byabashaija, W., & Katono, I. (2011). The impact of college entrepreneurial education on entrepreneurial attitudes and intention to start a business in Uganda. *Journal of Developmental Entrepreneurship*, Vol. 16, No. 1, 127-144.

Carsrud, A., Brannback, M., Elfving, J., & Brandt, K. (2009). Motivations: The entrepreneurial mind and behavior. In: A.L. Carsrud and M. Brannback (eds.), Understanding the entrepreneurial mind: Opening the black box (pp. 141-165). International Studies in Entrepreneurship, 24. New York: Springer Science+Business Media, LLC.

Charney, A., & Libecap, G. (2000). Impact of entrepreneurship education. Kansas City, MO: Kauffman Center for Entrepreneurship Leadership.

De Jorge-Moreno, J., Castillo, L.L., & Triguero, M.S. (2012). The effect of business and economics education programs on students' entrepreneurial intentions. *European Journal of Training and Development*, Vol. 36 No. 4, pp. 409-425.

Esnard, Talia (2011). Agripreneurs and/or agriculture science teachers?: an examination of agribusiness students entrepreneurial attitudes orientations and entrepreneurial intentions. *ICSB World Conference Proceedings*, 1-20. Washington: International Council for Small Business (ICSB).

Florin, J., Karri, R. & Rossiter, N. (2007). Fostering entrepreneurial drive in business education: an attitudinal approach. *Journal of Management Education*, Feb; 31, 1, pp 17-42.

Fayolle, A., Gailly, B., & Lassac-Clerc, N. (2006). Assessing the impact of entrepreneurship education programmes: A new methodology.

Journal of European Industrial Training, 30(9), 701-720.

Gibson, S.G., Haris, M.L., Walker, P.D., & McDowell, W.C. (2014). Investigating the entrepreneurial attitudes of African Americans: as study of young adults. *The Journal of Applied Management and Entrepreneurship*, Vol. 19, No. 2, pp 107-125.

Harris, M.L., Gibson, S. G. & Taylor, S. (Fall/Winter 2007/2008). *Examining the Impact of Small Business Institute® Participation on Entrepreneurial Attitudes.* Journal of Small Business Strategy, Vol. 18, No. 2, pp 57-75.

Hatten, T.S. & Ruhland, S.K. (1995). Student attitudes towards entrepreneurship as affected by participation in an SBI program, Journal of Education for Business, 70(4), 224-228.

Ismail, N., Jaffar, N., & Hooi, T. S. (2013). Using EAO model to predict the self-employment intentions among the universities' undergraduates in Malaysia. *International Journal of Trade, Economics and Finance*, Vol. 4, No. 5, October.

Jun Bae, T.,Qian, S., Miao, C., & Fiet, J. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: a meta-analytic review. *Entrepreneurship Theory and Practice*, March 2014, pps 217-254.

Katz, J. A. (2003). The chronology and intellectual trajectory of American entrepreneurship education: 1876-1999. *Journal of Business Venturing*, 18(2), 283-300.

Kerrick, S. A. (2008). An examination of entrepreneurial intentions of university students. Doctoral dissertation, University of Louisville, Kentucky. Dissertation & Theses: A & I Database, publication no. AAT 3308348.

Krishnan, L. & Kamalanabhan, T.J., (2013). Entrepreneurial success and life satisfaction among women entrepreneurs in micro enterprises. South Asian Journal of Management, Apr-Jun 2013; 20, 2 pp 4063.

Kolvereid, L. & Moen, O. (1997). Entrepreneurship among business graduates: does a major in entrepreneurship make a difference? *Journal of European Industrial Training*, Vol. 21 No. 4, pp 154-60.

Liñán, F. (2008). Skill and value perception: How do they affect entrepreneurial intentions? *International Entrepreneurship and Management Journal*, 4(3), 257-272.

Lüthje, C., & Franke, N. (2003). The 'making' of an entrepreneur. Testing a model of entrepreneurial intent among engineering students at MIT, *R&D Management*, Vol 33, No. 2, pp. 135-47.

McCline, R. L., Bhat, S., & Baj, P. (2000). Opportunity recognition: an exploratory investigation of a component of the entrepreneurial process in the context of the health care industry. *Entrepreneurship Theory and Practice*, Winter, 1042-2587-00-251.

McMullan, W., & Long, W.A. (1987). Entrepreneurship education in the nineties. *Journal of Business Venturing*, 2(3), pps 261-275.

Miao, Q. (2012). Revisiting the reliability and validity of the entrepreneurial attitude orientation scale in china. *Psychological Reports: Human Resources & Marketing*, 111, 2, 503-508.

Mitra, J., & Matlay, H. (2004). Entrepreneurial and vocational education and training: Lessons from eastern and central Europe. *Industry and Higher Education*, 18(1): 5369.

Noel, T. W. (2002). Effects of entrepreneurship education on intent to open a business. An exploratory study. *The Journal of Entrepreneurship Education*, 5, pps 3-13.

Oosterbeck, H., Van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review*, 54(3), 442-454.

Peterson, N. E., & Kennedy, J. (2003). Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship Theory and Practice*, 28(2), 129-144.

Raguz, I. V. & Dulcic, Z. (2011). University students' entrepreneurial characteristics – Key for the future development. *Challenges of Europe: International Conference Proceedings*, pps 855-863. Split: Sveuciliste u Splitu.

Robinson, P.B., Stimpson, D.V., Huefner, J.C., & Hunt, H.K. (1991). An attitude approach to the prediction of entrepreneurship. *Entrepreneurship Theory and Practice*, 15(4):1331.

Schwarz, E. J., Wdowiak, M. A., Almer-Jarz, D. A., & Beitenecker, R.J. (2009). The effects of attitudes and perceived environment conditions on students' entrepreneurial intent. *Education + Training*, Vol. 51 No. 4, pp. 272-291.

SBA Advocacy (2006). Entrepreneurship and education: what is known and not known about the links between education and entrepreneurial activity. http://archive.sba.gov/advo/research/sbe_06_ch05.pdf

Van Gelderen, M., Brand, M., Van Praag, M., Bodewes, W., Poutsma, E., & Van Gills, A. (2008). Explaining entrepreneurial intentions by means of the theory of planned behavior. *Career Development – International*, 13(6), 538-559.

Vanevenhoven, J., & Ligouri, E. (2013). The impact of entrepreneurship education: Introducing the entrepreneurship education project. *Journal of Small Business Management*, 51(3), 315-328.

von Graevenitz, G., Harhoff, D., & Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behavior & Organization*, 76(1), 90-112.

Whyte, William H. (1957). *The Organization Man*. Doubleday Anchor Books.

Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, entrepreneurship self-efficacy, and entrepreneurial career intentions: implications for entrepreneurship education. *Entrepreneurship Theory & Practice*, 31(3), 387-406.

Wong, Poh. Kam., Ho, Yuen Ping Ping, & Low, Pei Chin (2014). Do university entrepreneurship programs influence

students' entrepreneurial behavior? An empirical analysis of university students in Singapore. *SSRN Working Paper Series,* March 2014.

Zimmer, T.W., & Scarborough, N.M. (1998). *Essentials of entrepreneurship and small business management*. Upper Saddle River, NJ: Prentice Hall.

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