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) (Robinson, et al., 1991) survey to determine whether students enrolled in a small business consulting course changed their entrepreneurial attitude. 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 variables (age, intention to own a business, hours worked, and semesters as full-time students) are used to search for an explanation of change in students' entrepreneurial attitude. 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 which confirms the "self-selection bias" of entrepreneurship students (Liñán, 2004, McMullan & Long, 1987; Noel, 2002). However, the EAO measure did find a significant change in attitude among students who aspired to own a business and who had a strong work ethic. One conclude that can be drawn from this study is that students' attitude towards entrepreneurship are impacted more by what professors do not teach, i.e., extraneous variables, than what professors teach.

Introduction

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 and 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. Attitude towards entrepreneurship is recognized as an antecedent to the intent to start a business, and an important research question is to determine the extent to which education 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' EAO survey in a SBI course, e.g., small business consulting courses at six different universities during one semester. Their results supported the notion that completion of the course had a significant 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. Other studies have found a positive impact of entrepreneurship programs on students interest in entrepreneurship (Vanevenhoven and Ligouri, 2013; Souitaris, Zerbinati and Al-Laham, 2007; Peterman and Kennedy, 2003).

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)

Study's Underlying Premise

This study's underlying premise is that entrepreneurship education provides skills and changes attitudes in favor of entrepreneurship which must be acquired prior to the formation of entrepreneurial intentions and the subsequent behavior to start a successful business venture. The attitude and the skills form a solid basis upon which intentions are built and action can occur.

The basic model posits that entrepreneurship education does not directly affect a student's intentions to start a business. Instead, entrepreneurship education provides the skills, e.g., opportunity recognition, necessary to start a business and changes the student's attitude towards entrepreneurship, e.g., a start-up is feasible and attractive to pursue. As such, specific entrepreneurial skills and entrepreneurial attitudes are prerequisites, to entrepreneurial intentions. This study examines the impact of an experiential learning course, e.g., small business consulting course, on the student's attitude towards entrepreneurship.

The importance of attitude and skills in entrepreneurship education are emphasized 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." In research by Wong, Ho and Low (2014) who examined the influence of university entrepreneurship education

on students' entrepreneurial behavior by creating higher levels of intention and becoming more involved in venture creation activities, they noted that a student's attitude towards entrepreneurship, i.e., the degree to which the student views entrepreneurship in a positive light, as a measure of the student's behavioral beliefs, and they also noted that the connection between attitude and behavior is supported by Ajzen's (2002) 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. Subsequently, they questioned whether "Perceptions of the desirability and feasibility of starting a business may be influenced by people's stage of life, or their age, as well as their exposure to exogenous influences." 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.

Research Question

The principal question of this study is to investigate whether an experiential learning course can positively impact a student's attitude towards entrepreneurship. In order to examine this question, this study focuses on the impact of a 16-week small business consulting course. A second and closely related question that will be answered due to the research design of this study is whether the experiential learning entrepreneurship course has a greater impact on the students' attitude towards entrepreneurship than business education courses. The second question is of

equal importance as business courses are designed to provide business skills but are not designed to emphasize the new venture creation process (Liñán, 2008), however entrepreneurship graduates have been reported to be three times more likely to start a new business (Charney and Libecap, 2000).

EAO Survey with Additional Control Variables

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. This study further develops and expands upon a recent study that used the same EAO survey to study the impact of a small business consulting course on entrepreneurial attitudes, in particular, research reported by Harris, Gibson, and Taylor (2007/2008). There are four key differences between this study and Harris, et al.'s study. Harris, et all.'s study used the EAO survey to measure change in attitude at six different university during one semester, i.e., courses taught by six different professors, with no control group for comparison and no assurance that students completed both the pretest and posttest surveys. Although their findings are notable and should be taken into consideration, their findings could be biased for the following five reasons: (1) the average measured impact could be skewed by one or two exceptional professors rather than the content and experience of the course. (2) The average measured impact could be skewed by the university situation of one or two of the universities which are exceptional and will pull the average measure of the impact upward. (3) A cross-sectional snapshot, i.e., one semester, is likely to produce results different than an average calculated from a sustained effort over several semesters, and (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 include any identifying information 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 business 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 are the four additional control variables that Harris, et al, did not include in their study: (1) Control group of students not enrolled in a small business consulting course, (2) measure of change in attitude at the student level, (3) control for university and professor, and (4) increase the period of the study from one semester to seven semesters. Following is a brief explanation of why the particular control variable improved the research design for this study.

First, Harris, et al., 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, e.g., marketing 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 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., 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 in skewing the findings as well as the influence of the professor as their study does not control for the influence of the either the university or professors so that the potential impact of uniqueness of one or two campuses or of one or two professors skewing the results by their exceptional teaching methods could not be eliminated as a possible explanation for the significant difference found between the pre-test and post-test averages.

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 control variable is the duration of the study. One important key question is whether one, sixteen-week, course is sufficient to effect a student's change in attitude. As noted above, 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 no 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.

Given the above modifications, 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.

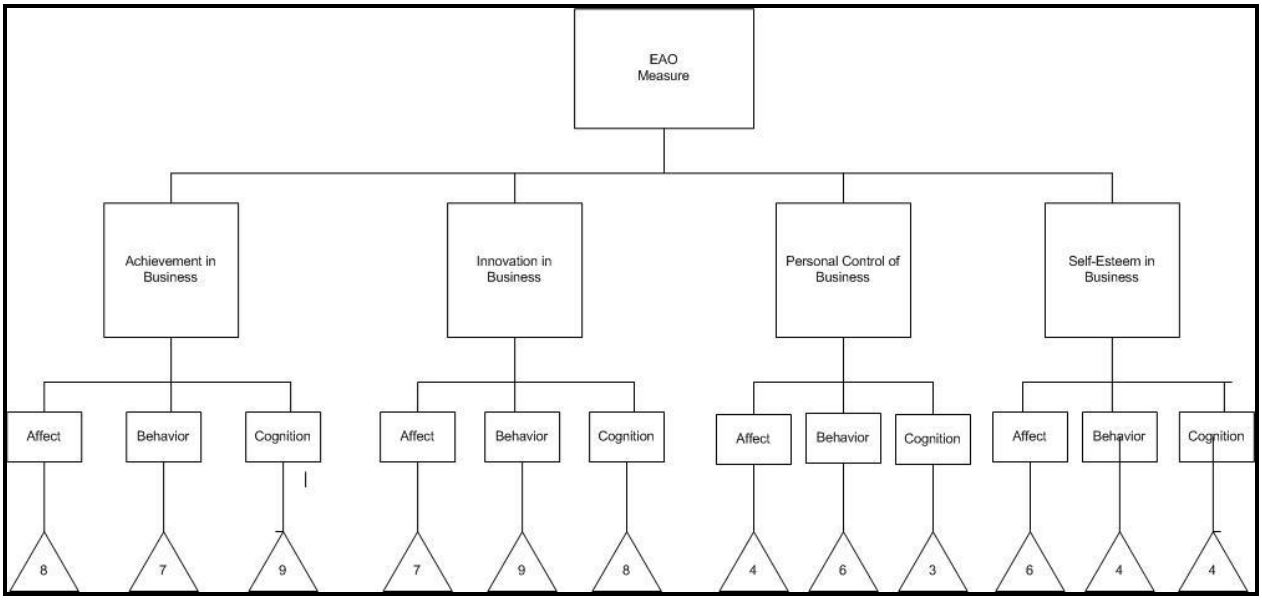
EAO Measure

As reported in the Harris, et al, study 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).

The EAO measure 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 not 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."

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 was used to measure the students' attitude.

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]

[1] 402 "No Opinion" responses represents 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.

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

As will be reported 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.

Table #1 reports that a notable number of students skipped questions by expressing "No Opinion," and Table #2 reports the six questions skipped most frequently. It is reasonable to expect some college students to skip these six questions when reviewing these six questions through the eyes of a 20-year old college student with little or no business experience. Even

though researchers like all questions on their questionnaires to be completed, if the students who chose the "No Opinion" response were forced to respond, it is certain that their responses would have been no better than a guess rather than a measure of the attitude change the EAO instrument was intended to measure. Consequently, it is believed that the inclusion of the "No Opinion" response provided a more accurate measure of the change in students' EAO than had all students been forced to answer all 75 questions.

Hypothesis

The principal purpose of this study is to test the hypothesis that entrepreneurial attitudes of business students will strengthen as a result of completing a semester-long small business consulting course. This 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 will use four variables, age, semesters as a full-time student, hours worked, and intention to run a business, to examine the likelihood of differences between students in the small business consulting course versus marketing courses.

Methodology

Participations were students enrolled in a small business consulting course and marketing courses at one urban mid-western university during seven different semesters starting with the

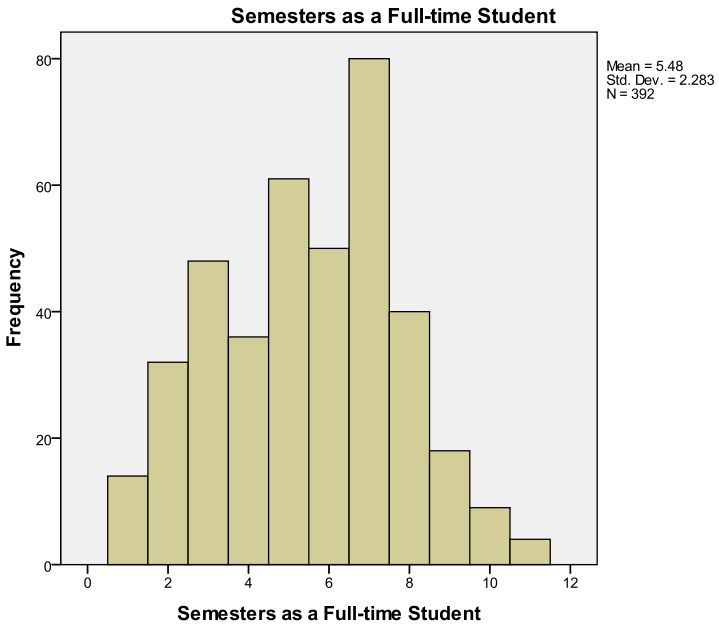
2008 Fall Semester and ending with the 2011 Spring Semester, including one summer semester, 2009 Summer.

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]

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

[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.

Student data for this project were 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 measurement. 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 effort was made to determine the extent to which students in the small business consulting course differ from students in the marketing course. A t-test was used to determine the differences between the two groups on four variables: age, semesters as full-time students, hours worked while going to school, and their intention to run 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 search for associations among the levels of the EAO measurement and the students enrolled in the two different types of courses.

Results

The first five columns of Table # 5 present the results of testing Hypothesis #1 under the five different scenarios as noted above. 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. The last four columns in Table #5 provide the results of testing Hypothesis #1 using age, semesters as full-time students, hours worked while going to school, and their intention to run a business. As previously state, these four variables are used to explore the difference between small business consulting and marketing students.

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 - ***

As shown in columns 1 through 5, no significant relationship at the 90% confidence level or higher was found using the EAO measure. However, 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 versus marketing courses				
EAO Construct or Sub-construct	Sign.	Mean: Consulting Students	Mean: Marketing Student	Interpretation
Achievemnet-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 course was found to have no impact; (2) the small business consulting course had some 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 Marketing Students	2.34 1.61	0.000	Students in the consulting course have a stronger intention.
Age	Consulting Students Marketing Students	4.21 2.69	0.000	Students in the consulting course are older.
Semesters as full-time student	Consulting Students Marketing Students	5.81 5.37	0.104	No difference
Hrs/wk worked during semester	Consulting Students Marketing Students	3.31 3.11	0.403	No difference

Note: See tables #7 thru #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, i.e., students enroll in the small business consulting course, 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 owners of small businesses 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.

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.

Based on the above analysis that found that both age and the intentions to own a business someday differentiate students in the consulting course from students taking marketing course, a binary variable was created for not only age and intention to own a business but also semesters and hours worked in order to determine whether the EAO measure as well as its constructs and sub-constructs could reveal additional differences between groups of 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, columns 6 through 9. The results do imply that there is a linkage between

attitudes and intentions and that work experience can play an influential role in shaping entrepreneurial attitudes.

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 work ethic do 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 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 columns 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.

Interestingly, age shown 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. For the purposes of this study, these findings only re-enforce the significant impact of intentions to own a business and the student's work ethic.

An interesting and valid question to ask at this time is whether it was the students in the small business consulting course with strong intentions to own a business and worked a lot of hours during the semester skewed the findings. Intuitively, it does appear that the combination of an entrepreneurship course, strong entrepreneurship intentions, and a strong work ethic that is attributed to successful entrepreneurs would all, in combination, greatly affect their attitude towards entrepreneurship. However, an answer to this question is beyond the scope of the research design for this study,

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 are the EAO measure, EAO constructs, and sub-constructs, a correlation test was used to search for relationships between the four additional variables and the EAO survey. Table #11 reports the results.

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

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

The correlation analysis is reported in Table 11, and the findings are consistent with the t-test reported in Table #5 as intention to own a business someday and working while attending college full-time are both positively correlated with the EAO measure 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, and it is unlikely that their intentions or work ethic would have a great impact on a person's attitude. Certainly we know that certain 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 should be expected to find that these variables have very little impact on the students' attitude.

Conclusion and Implications

Until the early 1980s entrepreneurship education was not taken seriously at the majority of colleges and universities in the U.S. and has forced entrepreneurship educators to fight an uphill battle for legitimacy in higher education. Statements in the book the ***Organization Man*** published in 1960 regarding the importance of major corporations in our economy while expressing negative opinions of entrepreneurship reflects the prevailing attitude towards entrepreneurship during the time when Jeffrey Timmons at Babson College offered the country's first course in entrepreneurship. Needless to say, entrepreneurship education stimulated little to no interest among academics, universities, business leaders and economists – until the early 80s when a 1978 report by David Birch was discovered. That report provided evidence that showed small businesses create jobs! Birch's report attracted much attention because it provided an answer to the a critical economic issue of the early 1980s in the U.S. – stagflation causing major corporations to downsize by 1,000s and 10,000s creating double-digit unemployment during a period of double-digit inflation; so perked the public's initial interest in entrepreneurship.

This initial interest in entrepreneurship was immediately followed by a long list of questions for which the few committed professors had only scant research to base their answers on at that time. One of the toughest questions was whether entrepreneurship could be taught. 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 established professors, a rising core of young scholars entering the study of entrepreneurship, and the

commitment of many leading universities, entrepreneurship education so become accepted as part of nearly every business curriculum. Surveys during the early 1980s found fewer than 400 colleges and universities in the country that had at least one course with the words small business, entrepreneurship, or new venture in the title of the course. Today, no one would expect to find any college or university without at least one course with those words in the course title. In fact, entrepreneurship has expanded into the study of major corporations, social enterprises, and economics has included entrepreneurship as a core phenomenon to study.

In spite of this progress, the question of the unique contribution of entrepreneurship education still remains. Studies such as the meta-analytic review reported earlier in this paper 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. 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 can offer the following insights based on the findings:

(1) The course under study was found to have an impact, but only a minor impact, on a student's entrepreneurial attitude.
(2) Extraneous variables of the course where found to have a positive impact on the student's entrepreneurial attitude.

One conclude that can be drawn from the above two 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 course does make a difference for the student. However, the feeling of dismay may be misplaced as it is only a function of our expectations in this case, i.e., our initial hypothesis that an entrepreneurship course should increase the student's positive attitude towards entrepreneurship. 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 supported by a positive attitude towards entrepreneur may be the reason the students decided to enroll in an entrepreneurship course. Based on this insight, Jun Bae et al. concluded:

Therefore, we expect that if we control for a student's pre-education entrepreneurial intentions, the relationship between entrepreneurship education and entrepreneurial intentions will not remain. Thus we propose the following hypothesis:

> **Hypothesis 1c:** When controlling for entrepreneurial intentions prior to enrolling in entrepreneurship education, the positive relationship between entrepreneurship education and post-education entrepreneurial intentions will not be different from zero.

This study supports their hypothesis and leads us to conclude that a student's decision to enroll in an entrepreneurship course, whether an experiential learning course or business plan course, is due to their relatively strong and favorable attitude towards entrepreneurship. Instead of expecting an entrepreneurship course or a program 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. A suggestion is to focus on the skills that entrepreneurially included students need to acquire and achieve proficiency in execution as this research as shown that a student's intention to own a business and work ethic provide a significant explanation of their entrepreneurial attitude and subsequent course work has a negligible impact if any on their attitude. Consequently, we need to revisit the expected outcomes of our entrepreneurship course and programs to include and build upon what students bring to them.

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