Stream 03. Entrepreneurship, Start-Ups and Small Business
Refereed Delivered

Germination and Inspiration or a Flash in the pan: "The impact of entrepreneurship education on skills and outcomes"

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ABSTRACT: *While entrepreneurship education is widespread, the extent of the benefits that it provides is not yet fully understood. With a wealth of research available, the results have been mixed and in some cases conflicting. This paper employs a comparative approach in examining the effects of entrepreneurship education over time on two cohorts (undergraduates in a university entrepreneurship course, and students in a professional entrepreneurship program). Participants in the professional entrepreneurship education program were found to utilize a range of skills to a higher degree than undergraduates. The findings indicated that short term effects of entrepreneurship education programs persist into the future. Research also indicated a strong correlation between skill use and entrepreneurial self-efficacy which in turn increases entrepreneurial intent.*
Keywords: entrepreneurship, entrepreneurial learning, entrepreneurship research, entrepreneur

Over the years, entrepreneurship education programs (EEPs) have become widespread around Australia (Matlay, 2008). There are numerous reasons for the increase of popularity, one of them being the strong government support for EEPs due to perceived economic benefits that new entrepreneurs would potentially provide via job creation (Fayolle, 2013; Fayolle, Gailly, & Lassas-Clerc, 2006; Higgins & Elliott, 2011; Moriano, Gorgievski, Laguna, Stephan, & Zarafshani, 2012; O'Connor, 2013). However, despite the widespread support for entrepreneurial education and the perceived benefits that it leads to, the findings thus far have been mixed (Karlsson & Moberg, 2013; Martin, McNally, & Kay, 2013; Matlay, 2008; von Graevenitz, Harhoff, & Weber, 2010) and the economic benefits have also been difficult to substantiate (O'Connor, 2013). The latter is due to the fact that studies evaluating Entrepreneurial Education tend to focus on student attitudes as opposed to benefits (Karlsson and Moberg 2013), and short-term measures of outcomes are misleading and unreliable (Fayolle et al. 2006).

According to Fayolle et al. (2015) traditional sequential measuring produces misleading results of entrepreneurial education outcomes due to an isolated focus on a single factor as opposed to all factors cumulatively. Traditionally, research has focuses on entrepreneurial attitudes leading to entrepreneurial intent. To counter it, Weaver et al. (2012) proposed measuring outcomes by

measuring entrepreneurial intent. This approach however overlooks accumulation of human capital, which together with the influence of EEPs over time have not been studied rigorously (Duval-Couetil, 2013; Fayolle et al., 2006; Harry Matlay, Solesvik, Westhead, & Matlay, 2014; Karlsson & Moberg, 2013; Lange, E, AS, W, & W, 2011; Martin et al., 2013; O'Connor, 2013). Studies point out that entrepreneurship intent, attitude, self-efficacy, and human capital improve in the long term as students continuously utilize the skills earned in entrepreneurship education. The research in this area however has been lacking (Duval-Couetil, 2013; Fayolle et al., 2006; Harry Matlay et al., 2014; Karlsson & Moberg, 2013; Lange et al., 2011; Martin et al., 2013; O'Connor, 2013). This study will examine the utilization of skills in a post entrepreneurship education context.

Human Capital has been largely omitted when measuring outcomes of entrepreneurship education. Some studies have incorporated human capital accumulation but measured it in terms of what was being taught as opposed to what was being used by the participants of entrepreneurship education (Duval-Couetil, 2013; Fayolle et al., 2006; Harry Matlay et al., 2014; Karlsson & Moberg, 2013; Lange et al., 2011; Martin et al., 2013; O'Connor, 2013). Learning "how to" is a key aspect in becoming an entrepreneur and subsequently relates back to entrepreneurial education (Tseng, 2013). As such, when evaluating entrepreneurial education, accumulation of human capital specifically related to entrepreneurial activity (for example; market research skills, managing, and critical thinking) should not be omitted as a measure (von Graevenitz et al., 2010). As a result, studies lack comprehensiveness as they ignore examining skills necessary to be an entrepreneur (von Graevenitz et al., 2010). It is to be noted that even when entrepreneurial intent decreases, skills obtained from EEP's can still be utilized later in life and thus it is an important outcome to study (Sánchez, 2013).

THEORETICAL BACKGROUND

Entrepreneurship has been an integral part of economy and governments are constantly pushing for more entrepreneurs due to perceived benefits of economic stimulation (Fayolle et al., 2006; Higgins & Elliott, 2011; Moriano et al., 2012; O'Connor, 2013). Little evidence however exists to show that entrepreneurship education achieves the goal of economic stimulation (Martin et al.,

2013). Pittaway & Cope (2007) pointed out that the real impact of entrepreneurial education is unclear, and Oosterbeek, Van Praag, & Ijsselstein (2010) argued that it does very little or nothing at all to enhance entrepreneurship skills and motivation to become entrepreneurs. Kirby (2004) argued that EEPs simplify entrepreneurship equating it with new venture creation and educating people about entrepreneurship rather than how to become and entrepreneur, rarely focusing on developing actual skills, attributes or behaviours needed to succeed in the field. On the other hand, entrepreneurial education, when enhanced by work experience has been shown to positively correlate with success of new venture creation (O'Connor, 2013; Parker & Van Praag, 2006).

Evaluation of Outcomes

Entrepreneurship education operates under the assumption that entrepreneurship is a discipline that can be taught and learned (Hattab, 2014; Kuratko, 2003; Oosterbeek, Van Praag, & IJsselstein, 2008). Numerous studies thus far have demonstrated both positive and negative outcomes of entrepreneurial education programs (both increase and decrease in entrepreneurial intent has been found when examining EEPs) (Martin et al., 2013; Peterman & Kennedy, 2003). The literature however, does not provide overwhelming support for positive outcomes of entrepreneurial education. Typical evaluations of entrepreneurial education are aimed at understanding attitudes towards the courses, while longitudinal studies (Weber, Von Graevenitz, & Harhoff, 2009) and studies with control groups are lacking (Wilson, Kickul, & Marlino, 2007). According to McNally et al. (2013), entrepreneurial education literature includes many studies that do not meet a high standard of rigor, they also fail to incorporate pre and post entrepreneurial education measures and control group comparisons, many also tend to overestimate the impact of entrepreneurial education programs (Martin et al., 2013). Souitaris et al. (2007) claims that entrepreneurial education as a discipline is still in its early stages which explains the shortcomings in numerous studies.

EEPs have been theorized to have an influence on participants over a period of time (Fayolle et al., 2006; Lange et al., 2011; O'Connor, 2013; Tseng, 2013). Attitudes may be affected by a myriad of factors over time, and intent may be “triggered” by life events, thus time becomes a significant

factor when examining outcomes of entrepreneurial education. Furthermore, skills obtained and honed during EEPs can be further improved over time in various other non-entrepreneurial contexts and then utilized in entrepreneurship (Harry Matlay, Z. Solesvik, Westhead, Matlay, & N. Parsyak, 2013b). Kolvereid (1996) also argued that effects of entrepreneurial education programs are delayed. Longitudinal studies have been previously used to show that EEPs have a positive impact on the desired entrepreneurial outcomes after gaining extensive real world experience, thus acting as a foundation (Matlay, 2008). Studies have attempted to isolate this contribution but found no effect stemming from EEP's (Souitaris et al., 2007). However, according to Rauch and Hulsink (2015), the timeframe used in the aforementioned study was inadequate. The study measured the effects of education over a 5-month period and longer time frames are required (Kolvereid & Moen, 1997). Rauch and Hulsink (2015) used an 18-month timeframe and concluded that including a time lag is important when measuring the full effects of entrepreneurship education.

Theory of Planned Behaviour

The applicability of TPB in entrepreneurship research has been consistent, however not without some problems (Liñán & Chen, 2006). Current literature is filled with EEP evaluations based on estimating positive outcomes in terms of start-up rate (von Graevenitz et al., 2010). This has been primarily done by examining the effects of attitude towards entrepreneurship on entrepreneurial intent. Perceived behavioural control on the other hand has been largely under researched. Fayolle and Gailly (2015) used TPB to measure the impact of EEPs on participants and suggested that the TPB model can be used for this purpose as opposed to only predict behaviour, which was the initial purpose (Fayolle & Gailly, 2015).

Forming an intent towards an action has been previously called "the first step" in the long process of venture creation (Gartner, Shaver, Gatewood, & Katz, 1994). It is the primary driving force of action and is considered an immediate precursor to behaviour (Krueger et al., 2000). Knowing whether EEP increases intentions is one of the best ways to measure the likelihood of engaging in entrepreneurial activity (Weaver, Liguori, Hebert, & Vozikis, 2012). Research has previously shown

that EEP raises entrepreneurial intent of participants (Harry Matlay et al., 2014). Fayolle et al. (2006) pointed out that there was a correlation between the level of entrepreneurial intent of participants and the number of entrepreneurial related courses that the participants enrolled in. Furthermore, intent is strongly influenced by self-efficacy and attitudes of participants (Padilla-meléndez, Fernández-gámez, & Molina-gómez, 2014).

Despite the wide range of research on entrepreneurial intent available, results have been somewhat inconsistent (Thompson, 2009). These inconsistencies highlight the need for better specified variables and more reliable metrics in entrepreneurial research (Krueger et al., 2000). The scales used vary between researchers, and very few studies report validity statistics, interval measures used, dimensionality, reliability statistics, and items measured (Thompson, 2009). These inconsistencies in measures and by extension, results, have made it difficult to compare studies and build upon the existing research findings. Von Graevenitz et al. (2010) found a positive correlation between pre and post EEP student entrepreneurial intentions which could suggest that EEPs have little effect on entrepreneurial intent. Despite this, intent will be considered in this study due to the added comparison between long and short-term intent.

Skill Use

Knowledge derived from education is referred to as human capital (Souitaris, Zerbinati, & Al-Laham, 2007). Accumulation of human capital further facilitates the integration and accumulation of knowledge and provides participants with a broader range of opportunities after the completion of education (Gimeno, Folta, Cooper, & Woo, 1997). Numerous authors have linked EEPs with positive human capital accumulation (Kuratko, 2005; Pittaway & Cope, 2007). Entrepreneurial education programs help students accumulate new knowledge, integrate existing knowledge, and develop their skills according to the necessities of the field of entrepreneurship (Gimeno et al., 1997; Harry Matlay et al., 2014; Harry Matlay, Z. Solesvik, Westhead, Matlay, & N. Parsyak, 2013a). Traditional measures of outcomes of entrepreneurial education often ignore aspects of EEP's such as skill accumulation (Matlay et al., 2012). While numerous studies have focused on entrepreneurial

outcomes and psychological aspects leading to those outcomes, most studies measure the impact of entrepreneurship education by closely examining education induced changes on intention (von Graevenitz et al., 2010). The disagreement among researchers of whether EEPs do indeed help with skill accumulation arises due to differentiating models of evaluation.

HYPOTHESES

Human capital accumulation has been identified as an alternative outcome of entrepreneurial education as it could be utilized in other contexts (Bae et al., 2014; Harry Matlay et al., 2013b). Taking into consideration the high entrepreneurship fail rate, education provides a great way to gain the necessary skills to start or run a business as opposed to starting a new venture without the necessary skills. The ability to learn through gaining and applying new knowledge is of vital importance for enhancing entrepreneurial performance (Jones, Macpherson, & Thorpe, 2010). Furthermore, entrepreneurial intent has been linked with skill accumulation (Hattab, 2014). Hypothesis 1 follows:

Hypothesis 1: Entrepreneurship education will be positively related to skill usage.

Ajzen (1991) insisted that all three antecedents of entrepreneurship are important in varying degrees based on circumstances. Matlay et al. (2014) found that participation in EEPs is associated with higher entrepreneurial intent. Intentions are critical in understanding entrepreneurial process (Weaver et al., 2012). Attitudes towards behaviour, followed by entrepreneurial self-efficacy have been found to be the strongest predictors of entrepreneurial intent (Moriano et al., 2012). Attitude towards entrepreneurship has been shown to be increased by entrepreneurial education (Florin, Karri, & Rossiter, 2007; Weaver et al., 2012). It has also been noted that EEPs have the capacity to improve self-efficacy (Lange et al., 2011). Thus, the following hypothesis is proposed:

Hypothesis 2: Entrepreneurship education will be positively related to entrepreneurial intent.

Fayolle and Gailly (2015) found that impact of entrepreneurial education persisted six months after completion of the program. The intention to become an entrepreneur may evolve over time

which would require longer time frames to be tested (Kolvereid & Moen, 1997). So far, relatively few studies have examined short and long term effects of entrepreneurial education on attitudes, behaviours, career intentions and competence (Duval-Couetil, 2013). Another study questions whether there are any long term effects and points towards entrepreneurial education providing merely short term benefits (Lange et al., 2011). Effects of entrepreneurial education over time have thus far not been studied rigorously (Harry Matlay et al., 2014). This research proposes that in time intent will increase as individuals may gain the necessary skills, develop existing ones, or find the opportune time to start a business. Thus, the following hypothesis is proposed:

Hypothesis 3: Long term effects on entrepreneurial intent will be higher than short term effects.

Finally, previous studies have indicated that entrepreneurial self-efficacy could be positively related with human capital accumulation (Bae et al., 2014). While entrepreneurial intent will potentially lead to a new venture, in some cases participants of entrepreneurship education do not end up entering the field of entrepreneurship or perhaps enter it later in the life. Even outside of the field of entrepreneurship, the skills related to entrepreneurship have been deemed beneficial and could be utilized in a variety of contexts. Thus, this research proposes the following hypothesis:

Hypothesis 4: Entrepreneurial self-efficacy will be positively correlated with skill utilization.

METHODOLOGY

This research adopts a quantitative approach to investigate the benefits of entrepreneurship education, and the differences between two groups of students who were studying entrepreneurship in different educational contexts. In order to empirically test the proposed hypotheses, a questionnaire was distributed to students at Flinders University (group 1) and students at the New Venture Institute (group 2). The response rate of this study was 60.08% and included 77 individuals who were enrolled or had completed an entrepreneurship education course called Venture Dorm, and 63 undergraduate business students from Flinders University who had enrolled and started but had not yet completed any entrepreneurship courses.

Four constructs were used to collect data for this research. Entrepreneurial self-efficacy was measured based on a questionnaire designed by Kolvereid and Isaksen (2006). This version of the questionnaire was used as it was a more up to date version of the scales used by Ajzen and Fishbein 1980, Ajzen and Driver 1992, and Madden et al. 1992. Moreover, single item measures were found to be less reliable (Armitage & Conner, 2001) and this particular scale used multi item measures to assess a subjective norm. Attitudes towards entrepreneurship were measured using a scale from Kolvereid and Isaksen (2006) which was designed by Gundry and Welsch (2001). The scale was taken from Kolvereid and Isaksen (2006) due to an additional item added to the scale: "I am willing to work more with the same salary in my own business, than when employed in an organization". The item added a comparative dimension based on participant's willingness. Entrepreneurial intent questions were based on a scale designed by Linan and Chen (2006). Finally, the skill use questionnaire was based upon the research identifying key skills learned in EEP's from a wide range of literature. A summary of the skills identified in literature has been provided in table 1.

Insert Table 1 about here

A reliability test was conducted using SPSS in order to assess the validity of the scales used to measure the four constructs, i.e. self-efficacy, intent, attitude, and skill use. (DeVellis, 2003) suggests that for scales composed of more than 10 items, Cronbach's alpha should be above 0.7. All the scales fulfilled this condition as shown in Table 2.

Insert Table 2 about here

Data distribution determines the tests required to analyse it thus testing for normality is of significant importance. The data was found to be not normally distributed according to Kolmogorov-Smirnov statistic as each construct scored 0.000. Thus, non-parametric tests had to be used for data analysis. Due to the specific type of data that was collected for this research, two tests were identified: Mann-Whitney and Kruskal-Wallis tests. Both tests are used when one variable is nominal and the other is ordinal. In this research, education is represented by a nominal variable and all constructs were measured on ordinal scales.

Mann-Whitney test was conducted in SPSS to examine the differences between two groups. An effect size statistic needed to be calculated using the following formula: $r = Z/\sqrt{N}$, where N = the total number of cases (Pallant, 2013). According to Cohen (1988), 0.1 indicates a small effect, 0.3 a medium effect, and 0.5 and above a large effect. The participants of entrepreneurship education (group 2) were then further divided into two groups, those who studied between 2013 and 2015, and those who studied in 2016, around the time of the survey. The differences between three groups were measured using Kruskal-Wallis test to examine the differences between three or more groups.

RESULTS

Among the undergraduate students surveyed (group 1), males were slightly over represented, accounting for 52.46% (32 males) of the responses while females accounted for the remaining 47.54% (29 females). The average age of participants was between 21 and 22 years old. Among these participants, only 7 (11.11%) were pursuing an entrepreneurial major while others chose an entrepreneurship course as an elective. 71.4% of participants were part of the workforce in varying capacity while 28.6% were unemployed. Finally, among the participants, 71.4% indicated that they would like to start a business in the future.

Among the students in an entrepreneurship education program (group 2), 63.89% (46) were male and 36.11% (26) were female. The average age of participants in this sample was between 33 and 34. Considering both samples, males were slightly over-represented. 44.16% of the participants in the entrepreneurship sample had a bachelor's degree, 29.87% had a postgraduate degree while the remaining 25.97% had either a high school education, certificate, or a diploma level education. Among these participants, 16.88% were unemployed at the time. Among the entrepreneurship education participants, 37.66% indicated that they were working in their own business (11.39% Sole traders, 18.18% owners of a business, and 9.1% were partners in an established business). 45.45% of the sample were participants from the 2016 Venture Dorm programs, 38.96% came from programs in 2015, and the remaining 20.78% of participants were from programs conducted in 2014. Finally,

among all of the participants 22.08% indicated that they have started a business since finishing a program, and 76.62% indicated plans to start a business in the near future.

Hypothesis 1 predicted that entrepreneurship education will be positively related to skill usage of the participants. Differences were observed running the Whitney-Mann test with communication being the only item that was not statistically significant ($p > 0.05$). All other items within the skills measure were found to be statistically significant ($p < 0.05$). The effect size of the differences found ranges from small to medium with the summary available in Table 3 below.

Insert Table 3 about here

Hypothesis 2 predicted that entrepreneurial intent will be positively affected by entrepreneurship education. Among the six items measured, all items were found to be statistically significant ($p < 0.05$) using Whitney-Mann test. For all six measures the effect size was on average around 0.22 which indicates a small to medium effect size. This constitutes a statistically significant difference between the two samples. The result summary can be found in Table 5 and the items constituting the intent measure can be found in Table 4.

Insert Table 4 & 5 about here

Hypothesis 3 predicted that entrepreneurial intent will be higher in the long run. To measure this, participants of entrepreneurship education were separated into two cohorts, those who completed the program between 2013 and 2015, and those who have completed the program in 2016. By comparing the two cohorts, the aim is to observe short and long term impacts. Among the 6 items measured, only 1 was found to be statistically significant ($p < 0.05$). Overall, entrepreneurial intent was found to not differ between the two cohorts. Summary can be found in Table 6.

Insert Table 6 about here

Finally, Hypothesis 4 predicted a correlation between entrepreneurial self-efficacy and skill utilization. As part of measuring entrepreneurial intent, self-efficacy and attitudes were also measured. The measures for entrepreneurial self-efficacy and skill utilization were totalled for each participant

and Spearman's correlation test was performed. The correlation was found to be statistically significant, $p < 0.05$. The results also indicated a strong correlation between the two constructs as the Correlation Coefficient was found to be in the 0.5 to 1.0 range ($r = 0.658$). The result confirms hypothesis four, that entrepreneurial self-efficacy is positively correlated with skill utilization. Summary can be found in Table 7.

Insert Table 7 about here

DISCUSSION

The results of this study overall showed that entrepreneurial intent was higher among participants of entrepreneur education programs as opposed to undergraduate students. These results support the findings of Fayolle et al. (2006) and Harry Matlay et al., (2014), who found a correlation between entrepreneurial intent and participation in entrepreneurial related courses. As students in the entrepreneurship education programs chose to participate in the program, their higher intent is in accordance with the findings of (Lange et al., 2011) who argue that elective EEP courses have a positive effect on intent as participants have a predisposition towards entrepreneurship. Thus, intention is the primary driving force of action and is essential to the field of entrepreneurship (Krueger et al., 2000). Entrepreneurial intent directly affects choices and influences behaviour (Moriano et al., 2012) which is in line with the results of this study. Higher intent among the students in entrepreneurship programs indicates that they have a higher probability of starting new ventures. The long and short-term effects on entrepreneurial intent were not found to differ which warrants further investigation.

The results also showed higher skill use among individuals who participated in entrepreneurship education programs. Numerous authors have noted that skill accumulation and utilisation is an integral part of entrepreneurship education that has been largely unexamined in the past (Matlay et al., 2012). Entrepreneurial education programs not only provide students with new skills but also help to develop existing human capital assets (Taylor & Plummer, 2003). Cope (2011)

points that this powerful learning process is future oriented, increasing the entrepreneur's level of experience and knowledge for further new venture activities (Cope, 2011). The skills obtained through EEP's foster further knowledge accumulation and stimulate an entrepreneurial mindset (Gimeno et al., 1997). The participants of entrepreneurship education were found to utilize a range of skills at a higher degree than non-entrepreneurship education participants. This utilization is not limited to the field but is a spill over effect of education which results in a more skill and capable workforce. Furthermore, through skill accumulation, EEP's have been linked to an increase in entrepreneurial self-efficacy (Scott & Twomey, 1988), and through it, directly related to entrepreneurial intent. In comparing the two samples, the results showed that skills are utilised to a much higher degree after completion of entrepreneurship education.

LIMITATION AND FURTHER RESEARCH

The limitations of this study include, lack of pre and post measures which some researches have noted may result in inconsistent results (Bae et al., 2014). Furthermore, it would allow a longitudinal study which would allow a closer inspection of when changes occur in entrepreneurial intent, attitudes, self-efficacy, and the dimension of skills acquisition and utilisation. Self-selection bias is another limitation of this study. Intent to become an entrepreneur might exist before individuals enter the program, and the same might be the case with attitudes thus entrepreneurship education would not change these factors (Bae et al., 2014). In fact, attitudes were found to not be affected by EEP's due to the existing bias thus their omission from this paper. Finally, further research could benefit from further statistical analysis, including structural equation modelling and a closer examination of interrelations between the numerous constructs measured. This study also focused on comparing two distinct groups that engaged in entrepreneurship education, future research needs to examine participants longitudinally as numerous authors have pointed out that changes occur over periods of time and performing longitudinal studies may allow a more precise examination of these changes (Fayolle et al., 2006; Lange et al., 2011; O'Connor, 2013; Tseng, 2013). Finally, social capital was omitted from this study and as noted by several authors, it has quite a significant impact upon the field of entrepreneurship, especially the "know who", thus in future research, social capital should be examined (Nandram, 2003).

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List of Tables:

Table 1: Skill use questionnaire sources

Skill:	**Source:**
Business Modelling	(Unger, Rauch, Frese, & Rosenbusch, 2011)
Business Start-up Methods	(Unger et al., 2011)
Networking	Hirschi 2013 & Linan & Javier Santos, 2007
Creativity	Bolton and Lane (2012) in Fayolle, Gailly et al. 2006
Strategic Planning	(Unger et al., 2011)
Risk Taking	Barbosa, Gerhardt, & Kickul, 2007; Hmieleski & Corbett, 2006; Matlay, Rae et al. 2012; Bolton and Lane (2012) in Fayolle, Gailly et al. 2006
Social Adaptability	Hirschi 2013 & Linan & Javier Santos, 2007
Market Research	Souitaris, Zerbinati et al. 2007
Managing	(Unger et al., 2011)
Critical Thinking	Bolton and Lane (2012) in Fayolle, Gailly et al. 2006
Opportunity Identification	Matlay, Solesvik et al. 2014
Communication	Hirschi 2013 & Linan & Javier Santos, 2007
Hiring of Personnel	Hirschi 2013 & Linan & Javier Santos, 2007
Persuasion	Hirschi 2013 & Linan & Javier Santos, 2007

Table 2: Reliability of scales test summary

Measure	**Cronbach's Alpha Coefficient**
Self-Efficacy	0. 96
Attitude	0. 84
Intent	0. 95
Skill Use	0. 93

Table 3: Skill Usage measures of the 2 cohorts (undergraduate's vs entrepreneurship education participants)

	Business modelling	Business start-up methods	Networking	Creativity	Strategic planning	Risk taking	Social adaptability	Market research	Managing	Critical thinking	Opportunity identification	Communication	Hiring of personnel	Persuasion
Z	-3.75	-3.47	-4.19	-3.19	-4.23	-4.87	-2.22	-3.68	-4.26	-2.86	-2.75	-1.25	-2.16	-2.96
p	0	0.00	0	0.00	0	0	0.03	0	0	0.00	0.00	0.21	0.03	0.00
Median Undergrad	1	2	3.5	4	4	4	4	3	3	5	4.5	6	1	4
Median Entrep.	4	4	5	6	5	5	5	5	6	6	5	6	3	5
Effect size	0.33	0.30	0.37	0.28	0.37	0.43	0.19	0.32	0.37	0.25	0.24	0.11	0.19	0.26

Table 4: Items used to measure entrepreneurial intent.

Item 1	*I am ready to do anything to be an entrepreneur*
Item 2	*My professional goal is to become an entrepreneur*
Item 3	*I will make every effort to start and run my own firm*
Item 4	*I am determined to create a firm in the future*
Item 5	*I have very seriously thought of starting my own firm*
Item 6	*I have the strong intention to start a firm some day*

Table 5: Entrepreneurial intent measures compared between the two sample groups (including the effect sizes).

Entrepreneurial Intent							
		Item 1	*Item 2*	*Item 3*	*Item 4*	*Item 5*	*Item 6*
	Z	-2.77	-2.30	-2.39	-2.85	-2.69	-2.70
	Asym. Sig. (2-tailed)	0.006	0.021	0.017	0.004	0.007	0.007
Undergraduate Participants	*N*	59	59	59	59	59	59
	Median	4	4	5	5	5	5
Entrepreneurship Education Participants	*N*	68	68	68	68	68	68
	Median	5	5	6	6	6	6
Total	*N*	127	127	127	127	127	127
	Median	4	5	5	6	6	6
	Effect size r	0.25	0.20	0.21	0.25	0.24	0.24

Table 6: Entrepreneurial intent measure comparison between two cohorts of entrepreneurial education programs.

Entrepreneurial Intent							
Graduation time		*Item 1*	*Item 2*	*Item 3*	*Item 4*	*Item 5*	*Item 6*
	Z	-1.88	-2.54	-1.7	-1.88	-1.77	-1.3
	Asym. Sig. (2-tailed)	0.06	0.011	0.089	0.06	0.077	0.126
2013-2015	*N*	34	34	34	34	34	34
	Median	4	4	5	6	6	6
2016	*N*	34	34	34	34	34	34
	Median	5	5.5	6	6	6	6
Total	*N*	68	68	68	68	68	68
	Median	5	5	6	6	6	6

Table 7: Correlation between entrepreneurial self-efficacy and skill use.

	Skill_Total
N	131
Sig. (2-tailed)	.000
Correlation Coefficient	.658**

**$p < .01$