Assessing & Understanding the Entrepreneurial Potential of Undergraduate Students

AUTHOR INFORMATION

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ACADEMIC ABSTRACT

This paper concerns Entrepreneurial Potential, Personality Characteristics and Skill Dimensions, and University Education. The research seeks to understand the entrepreneurial potential of university students as a driver for intention by examining personality traits and skills differences between students who identify entrepreneurship as their choice of academic studies and those who do not.

An exploratory analysis of 1,554 undergraduate students from twenty-four universities in the United States and abroad shows there are well-defined differences in entrepreneurship students compared to other majors, particularly most business students.

The research fills in gaps and limitations within the extant literature. It provides recommendations for future consideration, including the offering and positioning of entrepreneurship programs within the university, the marketing of all university programs, and the development and delivery of teaching methodologies tailored to student personalities.

Keywords:

Entrepreneurship, Entrepreneurial Mindset, Undergraduate Entrepreneurial Personality Characteristics, Undergraduate Skill Dimensions, University Education

Introduction

Entrepreneurship is a driving force in the global economy and the genesis of creativity and innovation. It is responsible for the majority of global job creation (Momani, 2017; Wiens & Jackson, 2015; Wong, Ho, & Autio, 2005) and entrepreneurial ventures are the economic "engine of growth" (Ashraf, 2017).

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The global workforce is evolving to reshape our concept of entrepreneurship and the need for entrepreneurial capabilities. Entrepreneurship now embodies the emerging "sharing economy," with work shifting from full-time positions to freelancing and contract labor in addition to the traditional launching of new ventures (Sundararajan, 2016). Millennials, born between the years of 1981 and 1996 (Dimock, 2018), have embraced this new workforce attitude, with almost half currently freelancing, more than any other generation (Edelman Intelligence, 2017).

Because of its importance, there is much research in the field of entrepreneurship. Extant literature exists on entrepreneurship, entrepreneurial education, student intentions to launch businesses, and what drives these intentions. Less is known, however, about student entrepreneurial potential (Krueger & Brazeal, 1994) and how to measure and nurture it as a means to increase intention to launch.

This study investigates the entrepreneurial potential, intention, and education at the university level. The research seeks to understand the entrepreneurial potential of undergraduate university students as a driver for intention by examining differences between students who identify entrepreneurship as their choice of academic studies and those who do not. In particular, the investigation explores differences in entrepreneurship, other business, and non-business students in entrepreneurial personality traits and skills, both components of entrepreneurial potential. Specifically, the research explores if entrepreneurship students are dissimilar to other university students in entrepreneurial personality traits and skills, the role gender identity plays in these differences, the impact ethnicity has on these differences, and if country of origin variances exist.

The inquiry then investigates the implications of these results for the repositioning, development, and enhancement of academic entrepreneurship programs, not just for

entrepreneurship majors but all students. This research will lead to further insights, helping educational institutions design and implement better ways to prepare students for entrepreneurial careers as well as to provide practical tools and processes for continued personal growth.

Literature Review

The field of entrepreneurship is well-studied within academia. Research exists for entrepreneurship in general, university entrepreneurial education, intentions, potential, and entrepreneurial personality characteristics and skill dimensions as a driver of potential.

Entrepreneurship. The past and future importance of entrepreneurship as a significant force in the global economy and creator of innovation is well-documented in the literature. Worldwide, entrepreneurship is responsible for the majority of job creation (Momani, 2017; Wiens & Jackson, 2015; Wong et al., 2005) and entrepreneurial ventures are the economic "engine of growth" (Ashraf, 2017). In the US, entrepreneurial enterprises are responsible for generating over 65% of net new jobs in the US since 1995 (Nazar, 2013). Today, new businesses account for nearly all new jobs in the US economy, with companies less than a year-old creating an average of 1.5 million jobs per year (Wiens & Jackson, 2015).

Entrepreneurship and intrapreneurship have a positive impact on large, established companies. According to a 2012 Deloitte study (OnResearch, 2012) companies that describe themselves as entrepreneurial – creative, unique, innovative, and willing to take risks – outperformed peer organizations in growth, productivity, and profitability.

Along with its economic importance, entrepreneurship has social relevance (Berglund & Johansson, 2007), where successful entrepreneurs are positively perceived for the impact they make within their communities and for their contribution to an increasingly innovation-driven economy.

Global workforce-changes impact entrepreneurship. An evolving global workforce is driving the need for entrepreneurship and entrepreneurial capabilities. Entrepreneurship no longer involves just starting a company, it now embodies the emerging "sharing economy," with work shifting from full-time positions to crowd-based freelancing and contract labor (Sundararajan, 2016). An Intuit study (2010) concluded more than 40% of the US workforce, or over 60 million workers, will be self-employed as freelancers, contractors, or entrepreneurs in just two years. The Freelancer's Union 2017 study (Edelman Intelligence, 2017) agrees and forecasts over 50% of the U.S. workforce will be freelancers by 2027, also finding that the majority of workers believe the work they do today will not exist in twenty years.

Calling it the "Fourth Industrial Revolution," the World Economic Forum (2016) states that a record number of jobs are being transformed because of technology, automation, and digitization. They further assert that future companies will be comprised of smaller core teams whose work will be augmented by contractors and freelancers. Ernst & Young (2016) concurs and reports that full-time jobs are disappearing, increasingly replaced by freelancers and a per-contract workforce.

Younger generations have embraced the new freelancing and contract labor workforce. Almost half work as freelancers, more than any other group (Edelman Intelligence, 2017). Thus, the need for entrepreneurial capabilities (i.e., product/service opportunity recognition, branding, marketing) in graduating students is of increasing importance.

Entrepreneurship education. Entrepreneurship education is one of the fastest growing fields of study within collegiate academics. According to a recent report published by the Kauffman Foundation (Torrance & Rauch, 2013), approximately 250 college courses taught entrepreneurship in 1985. This number exploded, and by 2008, 5,000 such courses were offered at

two and four-year institutions in the U.S., with over 400,000 students enrolled in entrepreneurship classes each year (Guilles, 2015).

While entrepreneurship typically falls under the umbrella of the business school, some universities have reimagined the role of entrepreneurship on campus. In 2003, the Ewing Marion Kauffman Foundation launched the Kauffman Campuses Initiative, a program promoting a cross-campus approach to entrepreneurship education (Torrance, 2013). Several participating universities required all students to take entrepreneurship courses. Writes liberal arts college Baldwin Wallace, a participator in the Kauffman initiative, "By encouraging students to live a purposeful life that solves human challenges, a natural union between the liberal arts and entrepreneurship is formed" (Torrance, 2013, p.7).

Research on the effectiveness of university entrepreneurship education shows mixed results. Most studies conclude that entrepreneurial education has a positive impact on student competencies and intentions to launch (Harudin, Fattah, & Ahman, 2016; Sanchez & Omar, 2012), while others assert entrepreneurship education increases knowledge, confidence, and self-efficacy (Krueger & Brazeal, 1994). Some research, however, finds no significant impact of education on intentions (Bae, Qian, Miao, & Fiet, 2014). Welsh, Tullar, & Nemati (2016) conclude these result differences are to be expected, stating that entrepreneurship students "are in the process of becoming something they previously were not" (p. 1).

Student entrepreneurial intentions. Given the importance of entrepreneurship to economic growth and creativity and innovation, educators are seeking ways to promote and nurture student entrepreneurial intentions to start new ventures. Research into student intentions is of growing academic interest. Work in the field has applied the theories of the Model of the Entrepreneurial Event (Shapero & Sokol, 1982) and the Theory of Planned Behavior (Ajzen,

2002). The literature leads to several conclusions. First, most assert that entrepreneurship training improves student intentions or the propensity to act. Sánchez (2013) finds that entrepreneurial education increases student competencies and intention towards self-employment. Saeed, Muffatto, Yousafzai (2014) agree, concluding that education has a positive impact on student intention to launch. Second, the literature shows that self-efficacy (student beliefs in their ability to succeed) is a primary driver of intention (Harudin et al., 2016; Krueger, Reilly, & Carsrud, 2000; Zhao, Seibert, & Hills, 2005). Third, self-efficacy is comprised of actual capabilities and perceived abilities (Wilson, Kickul, & Marlino, 2007). Fourth, self-efficacy (and intention) is affected by student personality traits (Aloulou, 2016; Espíritu-Olmos & Sastre-Castillo, 2015; Nishantha, 2009).

Entrepreneurial potential, personality traits, and skills. Researchers stress the importance of identifying and encouraging a growing supply of entrepreneurs, or individuals with entrepreneurial potential (Krueger & Brazeal, 1994). Krueger and Brazeal state, "Before there can be entrepreneurship there must be the potential for entrepreneurship" (p. 1). The authors go on to conclude educators must increase perceptions of entrepreneurial feasibility and desirability as a means of driving intentions and encouraging potential. Davis et al. (2016) describe this process as developing an "entrepreneurial mindset" (p. 2). Further, research shows there is a significant relationship between the entrepreneurial mindset and student personality characteristics. Nishantha (2009) asserts that personality traits are significantly related to student entrepreneurial attitudes, with high internal locus of control, high need for achievement, and risk-taking propensity as primary drivers. Çolakoğlua and Gozükara (2016) find that students with entrepreneurial intentions are more innovative, have a higher need for achievement and exhibit higher internal locus of control.

Research into identifying personality traits of successful entrepreneurs is extensive and not without debate. Gartner (1988) argues that studies into entrepreneurial personality traits and characteristics have not yielded useful results, and he asserts research into entrepreneurial behaviors and activities is more appropriate.

However, the topic has seen renewed interest in recent years. Davis et al. (2016) contend that there is increasing evidence that personality characteristics have an indirect impact on entrepreneurial outcomes and thus, warrant a new investigation. Krueger and Day (2010) assert that advances in cognitive science demonstrate the need for further entrepreneurial research into what drives intention and how fundamental beliefs and attitudes are formed. Finally, studies have found personality trait differences between students attracted to entrepreneurship and those that are not (Arasteh, Enayati, Zameni, & Khademloo, 2012; Bae et al., 2014; Sexton & Bowman, 1983). These studies, though, are limited in nature (i.e., the small number of students studied or limited universities reviewed).

Research Methodology

The research investigates undergraduate student entrepreneurial potential through the use of a mixed method, two-phase exploratory design based on an inductive approach.

As a two-phase design, the study uses a quantitative study to collect and evaluate primary data, followed by a qualitative study (interviews). The results of the primary data research served to frame and administer follow up qualitative interviews of a subset of survey responders with the objective of explaining and detailing outcomes of the quantitative research. In particular, the researcher was interested in the role that gender identity plays in shaping entrepreneurial potential

and personality characteristics and skill dimensions as a means of better structuring and delivering academic content.

Quantitative analysis. Primary data collection methods consist of the use and analysis of Entrepreneurial Mindset Profile (EMP) assessment data collected from 2,394 university students during the years of 2015 – 2017. The EMP is a statistically validated toolset that evaluates the "entrepreneurial mindset" and provides feedback on fourteen discrete scales that distinguish entrepreneurs from managers, falling within two broad domains: personality characteristics (independence, preference for limited structure, nonconformity, risk acceptance, action orientation, passion, and need to achieve), and skill dimensions (future focus, idea generation, execution, self-confidence, optimism, persistence, and interpersonal sensitivity).

The research focuses on 1,554 undergraduate students in the EMP database and uses logistic regression, PCA analysis, and ANOVA testing to compare entrepreneurship students to other majors, including business, liberal arts, math & sciences, social sciences, visual & performing arts, and professional students (law & education). For business majors, comparisons were run for each degree including accounting, finance, management, international business, and marketing. Finally, the data was analyzed from the perspectives of gender identity, ethnicity, and country of origin.

Qualitative analysis. For the qualitative component of this study, the primary research theme was narrowed to explore the impact of gender identity on entrepreneurship student personality characteristics and skill dimensions. Initial principal component analysis (PCA) results completed in February 2018 of 2,394 university student Entrepreneurial Mindset Profile assessments indicated gender has a significant impact on personality traits and skills. So, gender identity and its effects on personality traits and skills became the central theme of qualitative study.

The research used open-ended qualitative interviews of six undergraduate entrepreneurship students, three females and three males. These conversations were conducted in-person during the weeks of February 18th and March 4th, 2018 and the investigator recruited undergraduate students who had recently completed the EMP. The investigation followed the steps of the classic Grounded Theory (GT) methodology of open coding and constant comparison analysis for conceptualizing categories (Sánchez, 2013).

Results / Findings

Results demonstrate differences exist in EMP personality characteristics and skills between entrepreneurship students and other groups of students, including all other students, most business students, and non-business students. Gender identity, ethnicity, and country of origin play a role in these differences. By contrast, two student groups (International Business and Liberal Arts) show no statistical differences to entrepreneurship students.

Entrepreneurship students differ from all other students. Entrepreneurship students differ from all other university students in three of the fourteen EMP measurements. As shown in *Table 1*. Logistical Regression Results for Entrepreneurship Students Compared to All Other Students, ENT students exhibit a higher preference for limited structure and risk acceptance (personality characteristics), and report a higher idea generation skill dimensions score.

Insert Table 1 about here

Entrepreneurship students differ from other business students. Except for International Business majors, ENT students have very little in common with other business

students when comparing entrepreneurial personality characteristics and skills as measured by the EMP. As detailed in *Table 2*. Logistical Regression Results for Entrepreneurship Students Compared to All Other Business Students, ENT students score higher in the EMP personality characteristics and abilities of independence, non-conformity, risk acceptance, passion, and idea generation. Of note, entrepreneurship students score lower than other business students in action orientation and self-confidence, two characteristics commonly attributed to entrepreneurs.

Insert Table 2 about here

Entrepreneurship students are more similar to non-business students. The analysis shows ENT students, while different, are more similar to non-business students than business students. As detailed in *Table 3*. Logistical Regression Results for Entrepreneurship Students Compared to All Other Non-Business Students, entrepreneurship students when compared to non-business students score higher in the EMP personality characteristics and skills of limited structure, risk acceptance, and idea generation.

Insert Table 3 about here

Entrepreneurship students are most like Liberal Arts and International Business students. Entrepreneurship, Liberal Arts, and International Business students are very similar in EMP personality characteristics and skills. There are no statistical differences between ENT students and the two other groups.

***Gender identity plays a role in* differences.** Researchers (Mitchelmore & Rowley, 2013) have found differences between female and male entrepreneurs and entrepreneurship students. The EMP data confirms these studies and shows the impact of gender identity on entrepreneurial personality traits and skills is significant. Overall, female and male students score differently on six out of the seven EMP personality characteristics and in three out of seven skills. As detailed in *Table 4*. Logistical Regression Results for Female Students Compared to Male, females score higher in independence, non-conformity, passion, optimism, and interpersonal sensitivity. Females prefer more structure, accept lower levels of risk, have a lower need to achieve, and less self-confidence. Females are most unlike males in their self-confidence, risk avoidance, and need for structure.

Insert Table 4 about here

Differences hold true when comparing entrepreneurship females to entrepreneurship males. Female entrepreneurship students differ from their male counterparts. As shown in *Table 5*. Logistical Regression Results for Female Entrepreneurship Students Compared to Male Entrepreneurship Students, ENT females like more structure, accept less risk, have a lower need to achieve, and are less confident than their male counterparts. However, they demonstrate higher levels of interpersonal sensitivity (empathy) than male ENT students.

Insert Table 5 about here

Race is a factor in entrepreneurial characteristics and skills. Ethnicity plays a role in EMP personality characteristics and skills differences. Overall, as shown in *Table 6*. Logistical Regression Results for Students of All Majors Identifying as White Compared to Students Who Do Not, students of all majors that identify their race as "White" differ from students that do not. Whites score higher in limited structure, passion, and self-confidence, while they score lower in independence.

Insert Table 6 about here

Entrepreneurship students exhibit differences based on ethnicity. Entrepreneurship students demonstrate differences in EMP personality characteristics and skills. Overall, as shown in *Table 7.* Logistical Regression Results for Entrepreneurship Students Identifying as White Compared to Entrepreneurship Students Who Do Not, ENT students that identify their race as "White" score higher in need to achieve, while they score lower in optimism.

Insert Table 7 about here

Country of origin plays a role in entrepreneurship student differences. Entrepreneurship students demonstrate differences in EMP personality characteristics and skills based on their country of origin. As shown in *Table 8*. Logistical Regression Results for Entrepreneurship Students Identifying Their Country of Origin as the "US" Compared to Entrepreneurship Students from Outside the US, students that list their country of origin as being

from outside the US score higher in independence and are more optimistic than their US counterparts.

Insert Table 8 about here

Overall student entrepreneurial intentions. The EMP data confirms research into the growing numbers of students and the workforce overall that are or will be working as freelancers, contract labor, or entrepreneurs. Figures 1 and 2 illustrate university student "Intention to Launch." In addition to initial intention to launch as previously reported on, the EMP assessment tool captures future entrepreneurial intention. In collaboration with entrepreneurship researcher Abraham (Bhandari, 2006), the EMP includes a demographic question titled, "Primary Motivation for Starting Business." A use of this question is to capture future career intention, including entrepreneurial aspirations. Four of the main responses to this item (be my own boss; work smarter, not harder; change the world; build a national brand) come from the work of Abraham and indicate future entrepreneurial intentions. For this analysis, however, only "to be my own boss" was used.

Figure 1. Initial and Future Student Entrepreneurial Intentions by School, details initial and future student entrepreneurial intentions by school. Overall, 44.0% of students express an intention to launch a business. Vocational students have the highest intention (66.7%), business students are second (51.7%), while math & science students express the lowest intention at 23.3%.

Insert Figure 1 about here

Figure 2. Initial and Future Student Entrepreneurial Intentions by Major, illustrates entrepreneurial intentions by business major. Within the business school, entrepreneurship students have the highest intention rate (65.2%) and finance majors the lowest rate (30.6%).

Insert Figure 2 about here

The results corroborate several recent reports on workforce trends. Intuit (2010) projects that by 2020, 40% of the US workforce will work for themselves as freelancers, consultants, or as entrepreneurs. The Freelancing in America: 2017 report (2017) states the number of millennials that freelance is 40.7% and that over 50% of the US workforce will freelance by 2027. All of these numbers compare what is seen in the EMP data, where 44.0% of all student respondents and 51.9% of business students indicate an intention to launch.

Entrepreneurship students are similar to entrepreneurs in personality characteristics. Entrepreneurship students are like entrepreneurs in EMP personality traits. As shown in *Figure 3*. Comparison of EMP Personality Characteristics of Entrepreneurs, Corporate Managers, And Entrepreneurship Students, entrepreneurship students closely match, with the exceptions of action orientation and passion, entrepreneur personality characteristics scores and the overall entrepreneur "curve."

Insert Figure 3 about here

Entrepreneurship students score lower than entrepreneurs in skill dimensions. As with personality characteristics, entrepreneurship student EMP skill dimensions

scores follow the entrepreneur curve. As shown in *Figure 4.* Comparison of EMP Skills Dimensions of Entrepreneurs, Corporate Managers, And Entrepreneurship Students, however, entrepreneurship student skill scores are lower than those observed for entrepreneurs. The exception to this is interpersonal sensitivity, where students score higher than entrepreneurs.

Insert Figure 4 about here

Qualitative results. This research uses classic Glaserian GT methods to explore gender and its influence on entrepreneurial student personality traits and skills. Open-ended qualitative interviews were conducted with undergraduate university entrepreneurship students and the GT open coding process was used to develop the following four emergent substantive theoretical categories:

1. ***Entrepreneurial Esteem Transformation Theory*** (***working title):*** Self-worth and success as defined through change in others by addressing and changing disparity of opportunity. Affecting positive changes in others develops and drives increased self-worth within entrepreneurship students.

2. ***Traits Determinacy Theory (working title)***: Role of family in determining feminine and masculine entrepreneurial characteristics. Student entrepreneurial characteristics are developed in large part from strong familial role models. Further, students increasingly stress the importance of traits such as teamwork, interpersonal sensitivity, networking, and connection building, all traditionally described as feminine characteristics.

3. ***Entrepreneurial internal locus of control***.

4. ***Entrepreneurial potential development***.

It is posited that the substantive theoretical category of "entrepreneurial esteem transformation" may extend to a formal theory of "external esteem," but the GT process of constant comparison from other substantive areas is required to validate this assertion.

Further, a review of the extant literature suggests there are interrelationships between the four emergent conceptual categories and, not surprisingly, further GT work is needed to fully develop the grounded theory. Based on the work done to date, it is the belief of this researcher that the central core category is entrepreneurial potential development and that all other noted concepts potentially support and relate to this construct.

Conclusion and Implications for Theory, Research, and Practice

The review highlights limitations and gaps within the extant literature. First, as shown in *Figure 5.* Studies Summary, current studies are limited by the number of universities included in the research. As asserted by Sexton and Bowen (1983), comparisons are more valid when done with a large national student database. Nineteen of the thirty-one literature review studies are based on single university reviews, limiting the generalizability of the results. The research uses a global database of undergraduate assessments from twenty-four universities, providing more robust results that can be *broadly applied*.

Insert Figure 5 about here

Second, with the exception of Shinnar et al. (2012), a China, United States, and Belgium cross-study, those studies that included more than one university in the research (Atsan, 2006; Ertuna & Gurel, 2011; Mustapha & Selvaraju, n.d.; Salamzadeh, Farjadian, Amirabadi, &

Modarresi, 2014; Torres et al., 2017; Zhang & Zhang, 2013) use data that is geographically limited. For example, the Atsan study included two universities, both in Turkey, while Torres et al. (2017) included five South American universities. Ertuna & Gurel (2011) summarize the geographic limitations of their research into five Turkish universities, concluding that the research would benefit from a larger, more global dataset. The proposed research contributes to the field as it includes data from across the United States and selectively abroad, offering a *broader geographical picture* of student entrepreneurial personality traits and skills.

Third, the majority of the extant literature (seventeen out of twenty-nine empirical studies) treat undergraduate students as a *homogeneous* group, meaning the research assumes that undergraduate students as a whole have common personality characteristics. As the extant literature shows, however, differences exist between student groups (Salamzadeh et al., 2014; Sexton & Bowman, 1983; Zhang & Zhang, 2013), demonstrating that student groups (i.e., business, arts and science, engineering) are heterogeneous in entrepreneurial personality characteristics and skills. The proposed research contributes to the extant literature as it offers a *heterogeneous analysis* of different student groups, including entrepreneurship students, non-entrepreneurship business students (with details to the major levels of accounting, finance, international business, management, and marketing), liberal arts, math and science, social science, professional, and visual and performing arts.

Fourth, concerning student groups and entrepreneurial personality traits and skills, only three out of the twenty-nine empirical studies analyze entrepreneurship students as a separate student group, only eight measure gender differences, only three provide details on country of origin, and finally, only one assesses ethnicity. The proposed research contributes to the field by

including *entrepreneurship students* as a stand-alone group as well as *containing gender, country of origin*, and *ethnicity* in the analysis.

Finally, two limits expressed by others in the extant literature are the small number of factors used for the analysis and the availability of an entrepreneurial-centric personality characteristic and skills measurement tool to use for the analyses. Ertuna and Gurel (2011), Nishantha (2009), and Salamzadeh et al. (2014) list the number of factors used in the analyses as a limitation of the research. Ozaralli & Rivenburgh (2016) assert that future research must include other personality traits to develop a complete theoretical picture. Regarding the availability of an entrepreneurial-centric personality characteristic and skills measurement tool, Sexton and Bowman (1983) combined three measurement tools for their analysis, Nishantha (2009) developed a unique two-part questionnaire for use in the study, and Asamani and Mensah (2013) used an assessment tool based on the Big-Five personality traits. As Langkamp et al. (2012) concluded, a validated, entrepreneurial tool would be valuable. The proposed research adds to the extant literature by using a *validated fourteen-factor model* for its analysis that includes *both entrepreneurial specific personality traits and skills*.

Implications for Entrepreneurship Education

The research has practical implications for entrepreneurship education. First, changes in the global workforce necessitate that all graduating students develop entrepreneurial capabilities. Thus, consideration must be given to the *offering* of entrepreneurship programs. Should universities make classes that teach innovation, creativity, and an entrepreneurial mindset a core requirement?

Second, because of the importance of entrepreneurial capacity for *all students*, consideration must be given to the *positioning* of entrepreneurship programs. Should entrepreneurship programs be reimagined outside of its most common location, the business school?

Third, research results provide insights into the unique personality characteristics of students. Consideration must be given to the *marketing* of university programs. Can universities use personality characteristics to more successfully reach potential students? Should student personality characteristics market-segmentation strategies be implemented? Would this approach result in higher growth and improved program retention rates?

Finally, the research provides an opportunity to assess and potentially modify approaches used to instruct students. Consideration must be given to the *development and delivery of content*. For example, entrepreneurship students demonstrate high levels of idea generation and risk acceptance as well as a dislike for structure. Because of these characteristics, traditional academic learning instruction may not be best suited for these students. Instead, student-learning styles that are more self-directed might better capture student enthusiasm for course content and lead to improved results.

References

Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology*, *32*(4), 665–683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x

Aloulou, W. J. (2016). Predicting entrepreneurial intentions of freshmen students from EAO modeling and personal background: A Saudi perspective. *Journal of Entrepreneurship in Emerging Economies*, *8*(2), 180–203.

Arasteh, H., Enayati, T., Zameni, F., & Khademloo, A. (2012). Entrepreneurial Personality Characteristics of University Students: A Case Study. *Procedia - Social and Behavioral Sciences*, *46*, 5736–5740. https://doi.org/10.1016/j.sbspro.2012.06.507

Asamani, L., & Mensah, A. O. (2013). Entrepreneurial Inclination among Ghanaian University Students: The Case of University of Cape Coast, Ghana. *European Journal of Business and Management*, *5*(19).

Ashraf, M. M. (2017, June 9). Entrepreneurship: Engine of growth. Retrieved September 30, 2017, from http://nation.com.pk/columns/09-Jun-2017/entrepreneurship-engine-of-growth

Atsan, Y. G. N. (2006). Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey. *Education + Training*, *48*(1), 25–38. https://doi.org/10.1108/00400910610645716

Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The Relationship Between Entrepreneurship Education and Entrepreneurial Intentions: A Meta-Analytic Review. *Entrepreneurship Theory and Practice*, *38*(2), 217–254. https://doi.org/10.1111/etap.12095

Berglund, K., & Johansson, A. W. (2007). Constructions of entrepreneurship: a discourse analysis of academic publications. *Journal of Enterprising Communities: People and Places in the Global Economy*, *1*(1), 77–102. https://doi.org/10.1108/17506200710736276

Bhandari, N. C. (2006). Intention for Entrepreneurship among Students in India. *The Journal of Entrepreneurship*, *15*(2), 169–179. https://doi.org/10.1177/097135570601500204

Çolakoğlu, N., & Gözükara, İ. (2016). A Comparison Study on Personality Traits Based on the Attitudes of University Students toward Entrepreneurship. *Procedia - Social and Behavioral Sciences*, *229*, 133–140. https://doi.org/10.1016/j.sbspro.2016.07.122

Davis, M. H., Hall, J. A., & Mayer, P. S. (2016). Developing a new measure of entrepreneurial mindset: Reliability, validity, and implications for practitioners. *Consulting Psychology Journal: Practice and Research*, *68*(1), 21–48. https://doi.org/10.1037/cpb0000045

Dimock, M. (2018, March 1). Defining generations: Where Millennials end and post-Millennials begin. Retrieved April 19, 2018, from http://www.pewresearch.org/fact-tank/2018/03/01/defining-generations-where-millennials-end-and-post-millennials-begin/

Edelman Intelligence. (2017). *Freelancing in America: 2017* (p. 68). Upwork and Freelancer's Union.

Ernst & Young Global Limited. (2016). Does disruption drive job creation? EY Global Job Creation Survey 2016, 20.

Espíritu-Olmos, R., & Sastre-Castillo, M. A. (2015). Personality traits versus work values: Comparing psychological theories on entrepreneurial intention. *Journal of Business Research*, *68*(7), 1595–1598. https://doi.org/10.1016/j.jbusres.2015.02.001

Gartner, W. B. (1988). "Who Is an Entrepreneur?" Is the Wrong Question. *American Journal of Small Business*, *12*(4), 11–32. https://doi.org/10.1177/104225878801200401

Glaser, B. G., & Holton, J. (2004). Remodeling Grounded Theory. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *5*(2). Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/607

Guilles, W. (2015). *State of Entrepreneurship 2015 Address*. Ewing Marion Kauffman Foundation.

Harudin, K., Fattah, N., & Ahman, E. (2016). The Effectiveness of Entrepreneurship Learning in Developing Students' Entrepreneurial Intentions.

İlhan Ertuna, Z., & Gurel, E. (2011). The moderating role of higher education on entrepreneurship. *Education + Training*, *53*(5), 387–402. https://doi.org/10.1108/00400911111147703

Intuit. (2010, October). The Intuit 2020 report - Twenty trends that will shape the next decade. Intuit. Retrieved from http://http-download.intuit.com/http.intuit/CMO/intuit/futureofsmallbusiness/intuit_2020_report.pdf

Krueger Jr, N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*, *18*(3), 91–104.

Krueger, N. F., & Day, M. (2010). Looking Forward, Looking Backward: From Entrepreneurial Cognition to Neuroentrepreneurship. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of Entrepreneurship Research* (pp. 321–357). New York, NY: Springer New York. https://doi.org/10.1007/978-1-4419-1191-9_13

Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). COMPETING MODELS OF ENTREPRENEURIAL INTENTIONS. *Journal of Business Venturing*, *15*, 411–432.

Langkamp Bolton, D., & Lane, M. D. (2012). Individual entrepreneurial orientation: development of a measurement instrument. *Education + Training*, *54*(2/3), 219–233. https://doi.org/10.1108/00400911211210314

Mitchelmore, S., & Rowley, J. (2013). Entrepreneurial competencies of women entrepreneurs pursuing business growth. *Journal of Small Business and Enterprise Development*, *20*(1), 125–142. https://doi.org/10.1108/14626001311298448

Momani, B. (2017, March). Entrepreneurship: An Engine For Job Creation and Inclusive Growth in the Arab World. Brookings Institution. Retrieved from https://www.brookings.edu/wp-content/uploads/2017/03/entrepreneurship_in_the_arab_world.pdf

Mustapha, M., & Selvaraju, M. (n.d.). PERSONAL ATTRIBUTES, FAMILY INFLUENCES, ENTREPRENEURSHIP EDUCATION AND ENTREPRENEURSHIP INCLINATION AMONG UNIVERSITY STUDENTS, 19.

Nazar, J. (2013, September 9). 16 Surprising Statistics About Small Businesses. Retrieved April 11, 2018, from https://www.forbes.com/sites/jasonnazar/2013/09/09/16-surprising-statistics-about-small-businesses/

Nishantha, B. (2009). Influence of personality traits and socio-demographic background of undergraduate students on motivation for entrepreneurial career: The Case of Sri Lanka.

OnResearch. (2012, September). Mid-market perspectives America's economic engine — why entrepreneurs matter. Retrieved April 14, 2018, from https://www2.deloitte.com/content/dam/Deloitte/us/Documents/Deloitte%20Growth%20Enterprises/us-dges-why-entrepreneurs-matter.pdf

Ozaralli, N., & Rivenburgh, N. K. (2016). Entrepreneurial intention: antecedents to entrepreneurial behavior in the U.S.A. and Turkey. *Journal of Global Entrepreneurship Research*, *6*(1). https://doi.org/10.1186/s40497-016-0047-x

Saeed, S., Muffatto, M., & Yousafzai, S. (2014). A Multi-level Study of Entrepreneurship Education among Pakistani University Students. *Entrepreneurship Research Journal*, *4*(3). https://doi.org/10.1515/erj-2013-0041

Salamzadeh, A., Farjadian, A. A., Amirabadi, M., & Modarresi, M. (2014). Entrepreneurial characteristics: insights from undergraduate students in Iran. *International Journal of Entrepreneurship and Small Business*, *21*(2), 165. https://doi.org/10.1504/IJESB.2014.059471

Sánchez, J. C. (2013). The Impact of an Entrepreneurship Education Program on Entrepreneurial Competencies and Intention. *Journal of Small Business Management*, *51*(3), 447–465. https://doi.org/10.1111/jsbm.12025

Sanchez, T., & Omar, A. E. (2012). The impact of industry clusters on the economy in the United States. *Academy of Entrepreneurship Journal*, *18*(1), 99.

Sexton, D. L., & Bowman, N. (1983). Determining Entrepreneurial Potential of Students. In *Academy of Management Proceedings* (Vol. 1983, pp. 408–412). Academy of Management.

Shapero, A., & Sokol, L. (1982). *The Social Dimensions of Entrepreneurship* (SSRN Scholarly Paper No. ID 1497759). Rochester, NY: Social Science Research Network. Retrieved from https://papers.ssrn.com/abstract=1497759

Shinnar, R. S., Giacomin, O., & Janssen, F. (2012). Entrepreneurial Perceptions and Intentions: The Role of Gender and Culture. *Entrepreneurship Theory and Practice*, *36*(3), 465–493. https://doi.org/10.1111/j.1540-6520.2012.00509.x

Sundararajan, A. (2016). *The Sharing Economy: The End of Employment and the Rise of Crowd-Based Capitalism*. Cambridge, Massachusetts: The MIT Press.

Torrance, W. E. F. (2013). ENTREPRENEURIAL CAMPUSES: Action, Impact, and Lessons Learned from the Kauffman Campus Initiative. *Kauffman Foundation*, 10.

Torrance, W., & Rauch, J. (2013). *Entrepreneurship Education Comes of Age on Campus*. Kauffman Foundation.

Torres, F. C., Méndez, J. C. E., Barreto, K. S., Chavarría, A. P., Machuca, K. J., & Guerrero, J. A. O. (2017). Exploring entrepreneurial intentions in Latin American university students. *International Journal of Psychological Research*, *10*(2), 46–59. https://doi.org/10.21500/20112084.2794

Welsh, D. H. B., Tullar, W. L., & Nemati, H. (2016). Entrepreneurship education: Process, method, or both? *Journal of Innovation & Knowledge*, *1*(3), 125–132. https://doi.org/10.1016/j.jik.2016.01.005

Wiens, J., & Jackson, C. (2015, September 14). The Importance of Young Firms for Economic Growth. Retrieved September 30, 2017, from http://www.kauffman.org/what-we-do/resources/entrepreneurship-policy-digest/the-importance-of-young-firms-for-economic-growth

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

Wong, P. K., Ho, Y. P., & Autio, E. (2005). Entrepreneurship, Innovation and Economic Growth: Evidence from GEM data. *Small Business Economics*, *24*(3), 335–350. https://doi.org/10.1007/s11187-005-2000-1

World Economic Forum. (2016). *The Future of Jobs Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*. Retrieved from http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf

Zhang, H., & Zhang, Y. (2013). Psychological Characteristics of Entrepreneurship of College Students in China. *Psychology*, *04*(03), 159–164. https://doi.org/10.4236/psych.2013.43023

Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology*, *90*(6), 1265.

APPENDIX

Tables

Table 1
Logistical Regression Results for Entrepreneurship Students Compared to All Other Students

Model parameters (Variable All ENT versus All Other Students): ENT=1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-4.831	0.730	43.785	< 0.0001	-6.263	-3.400			
Independence	0.173	0.103	2.804	0.094	-0.029	0.375	1.189	0.971	1.455
Limited Structure	0.208	0.085	5.963	0.015	0.041	0.376	1.232	1.042	1.456
Nonconformity	0.158	0.115	1.892	0.169	-0.067	0.383	1.171	0.935	1.467
Risk Acceptance	0.479	0.112	18.208	< 0.0001	0.259	0.699	1.614	1.296	2.011
Action Orientation	-0.239	0.123	3.771	0.052	-0.481	0.002	0.787	0.618	1.002
Passion	0.054	0.118	0.205	0.650	-0.178	0.285	1.055	0.837	1.330
Need to Achieve	0.056	0.115	0.237	0.626	-0.170	0.282	1.058	0.844	1.326
Future Focus	0.110	0.091	1.458	0.227	-0.069	0.289	1.116	0.934	1.334
Idea Generation	0.267	0.089	8.939	0.003	0.092	0.441	1.305	1.096	1.555
Execution	-0.088	0.109	0.656	0.418	-0.301	0.125	0.916	0.740	1.133
Self-Confidence	-0.073	0.094	0.605	0.437	-0.257	0.111	0.929	0.773	1.117
Optimism	0.013	0.093	0.018	0.893	-0.170	0.195	1.013	0.844	1.215
Persistence	-0.012	0.146	0.007	0.935	-0.299	0.275	0.988	0.742	1.316
Interpersonal Sensitivity	0.048	0.086	0.320	0.571	-0.119	0.216	1.050	0.888	1.241

Note. Differences at the 95% confidence level highlighted in yellow.

Table 2
Logistical Regression Results for Entrepreneurship Students Compared to All Other Business Students

Model parameters (Variable All ENT versus All Other Business): ENT=1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-4.194	0.892	22.129	< 0.0001	-5.942	-2.447			
Independence	0.340	0.124	7.468	0.006	0.096	0.583	1.405	1.101	1.792
Limited Structure	0.134	0.104	1.675	0.196	-0.069	0.337	1.144	0.933	1.401
Nonconformity	0.293	0.139	4.453	0.035	0.021	0.565	1.340	1.021	1.760
Risk Acceptance	0.479	0.131	13.329	0.000	0.222	0.737	1.615	1.249	2.089
Action Orientation	-0.397	0.152	6.824	0.009	-0.695	-0.099	0.672	0.499	0.906
Passion	0.339	0.144	5.537	0.019	0.057	0.622	1.404	1.058	1.863
Need to Achieve	-0.042	0.139	0.091	0.763	-0.315	0.231	0.959	0.730	1.260
Future Focus	0.124	0.112	1.217	0.270	-0.096	0.344	1.132	0.908	1.410
Idea Generation	0.270	0.107	6.382	0.012	0.061	0.480	1.311	1.063	1.617
Execution	-0.162	0.132	1.510	0.219	-0.420	0.096	0.851	0.657	1.101
Self-Confidence	-0.267	0.116	5.279	0.022	-0.494	-0.039	0.766	0.610	0.962
Optimism	-0.062	0.117	0.280	0.597	-0.291	0.167	0.940	0.748	1.182
Persistence	0.083	0.178	0.221	0.639	-0.265	0.432	1.087	0.767	1.540
Interpersonal Sensitivity	0.102	0.106	0.935	0.333	-0.105	0.309	1.108	0.900	1.362

Note. Differences at the 95% confidence level highlighted in yellow.

Table 3
Logistical Regression Results for Entrepreneurship Students Compared to All Other Non-Business Students

Model parameters (Variable All ENT versus All Other Non-Business): ENT=1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-4.094	0.831	24.241	< 0.0001	-5.723	-2.464			
Independence	0.068	0.119	0.325	0.569	-0.165	0.300	1.070	0.848	1.350
Limited Structure	0.259	0.100	6.772	0.009	0.064	0.454	1.296	1.066	1.575
Nonconformity	0.056	0.131	0.185	0.667	-0.200	0.312	1.058	0.819	1.367
Risk Acceptance	0.462	0.129	12.749	0.000	0.208	0.715	1.587	1.232	2.045
Action Orientation	-0.099	0.139	0.513	0.474	-0.372	0.173	0.905	0.690	1.188
Passion	-0.201	0.140	2.050	0.152	-0.475	0.074	0.818	0.622	1.077
Need to Achieve	0.168	0.135	1.554	0.212	-0.096	0.433	1.183	0.908	1.541
Future Focus	0.108	0.106	1.045	0.307	-0.099	0.315	1.114	0.906	1.370
Idea Generation	0.232	0.100	5.359	0.021	0.036	0.429	1.262	1.036	1.536
Execution	-0.062	0.125	0.249	0.617	-0.306	0.182	0.940	0.736	1.200
Self-Confidence	0.094	0.108	0.755	0.385	-0.118	0.306	1.098	0.889	1.357
Optimism	0.084	0.104	0.646	0.421	-0.120	0.288	1.087	0.887	1.333
Persistence	-0.035	0.166	0.044	0.834	-0.361	0.291	0.966	0.697	1.338
Interpersonal Sensitivity	-0.002	0.098	0.000	0.984	-0.193	0.189	0.998	0.824	1.209

Note. Differences at the 95% confidence level highlighted in yellow.

Table 4
Logistical Regression Results for Female Students Compared to Male

Model parameters (Variable Gender): Males=1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-0.243	0.688	0.125	0.723	-1.592	1.105			
Independence	-0.400	0.102	15.371	< 0.0001	-0.600	-0.200	0.670	0.549	0.819
Limited Structure	0.593	0.086	47.244	< 0.0001	0.424	0.762	1.809	1.528	2.142
Nonconformity	-0.249	0.111	5.013	0.025	-0.466	-0.031	0.780	0.627	0.969
Risk Acceptance	0.592	0.106	31.342	< 0.0001	0.385	0.799	1.807	1.469	2.223
Action Orientation	-0.207	0.118	3.041	0.081	-0.439	0.026	0.813	0.645	1.026
Passion	-0.328	0.114	8.268	0.004	-0.552	-0.105	0.720	0.576	0.901
Need to Achieve	0.240	0.110	4.813	0.028	0.026	0.455	1.272	1.026	1.576
Future Focus	0.142	0.089	2.540	0.111	-0.033	0.317	1.153	0.968	1.373
Idea Generation	-0.050	0.085	0.348	0.555	-0.216	0.116	0.951	0.806	1.123
Execution	0.056	0.104	0.293	0.588	-0.147	0.260	1.058	0.863	1.296
Self-Confidence	0.626	0.094	44.137	< 0.0001	0.441	0.810	1.869	1.554	2.248
Optimism	-0.234	0.091	6.637	0.010	-0.411	-0.056	0.792	0.663	0.946
Persistence	-0.228	0.142	2.578	0.108	-0.506	0.050	0.796	0.603	1.052
Interpersonal Sensitivity	-0.421	0.085	24.297	< 0.0001	-0.588	-0.253	0.657	0.555	0.776

Note. Differences at the 95% confidence level highlighted in yellow.

Table 5
Logistical Regression Results for Female Entrepreneurship Students Compared to Male Entrepreneurship Students

Model parameters (Variable Female ENT versus Male ENT): ENT Female=1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	0.312	1.373	0.051	0.820	-2.380	3.003			
Independence	0.257	0.195	1.740	0.187	-0.125	0.640	1.294	0.882	1.896
Limited Structure	-0.729	0.168	18.711	< 0.0001	-1.059	-0.398	0.483	0.347	0.671
Nonconformity	0.386	0.221	3.051	0.081	-0.047	0.818	1.470	0.954	2.266
Risk Acceptance	-0.819	0.219	13.955	0.000	-1.249	-0.389	0.441	0.287	0.677
Action Orientation	0.459	0.240	3.668	0.055	-0.011	0.928	1.582	0.989	2.531
Passion	0.432	0.249	3.008	0.083	-0.056	0.921	1.541	0.945	2.511
Need to Achieve	-0.521	0.237	4.828	0.028	-0.985	-0.056	0.594	0.374	0.945
Future Focus	-0.315	0.186	2.880	0.090	-0.679	0.049	0.730	0.507	1.050
Idea Generation	0.123	0.165	0.555	0.456	-0.200	0.445	1.131	0.819	1.561
Execution	0.007	0.217	0.001	0.975	-0.419	0.433	1.007	0.658	1.541
Self-Confidence	-0.530	0.185	8.158	0.004	-0.893	-0.166	0.589	0.409	0.847
Optimism	0.356	0.183	3.787	0.052	-0.003	0.715	1.428	0.997	2.043
Persistence	0.123	0.274	0.202	0.653	-0.414	0.660	1.131	0.661	1.935
Interpersonal Sensitivity	0.506	0.170	8.801	0.003	0.172	0.840	1.658	1.187	2.315

Note. Differences at the 95% confidence level highlighted in yellow.

Table 6
Logistical Regression Results for Students of All Majors Identifying as White Compared to Students Who Do Not

Model parameters (Variable White versus Non-White): White = 1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	1.878	0.700	7.200	0.007	0.506	3.249			
Independence	-0.332	0.102	10.545	0.001	-0.533	-0.132	0.717	0.587	0.877
Limited Structure	0.182	0.085	4.635	0.031	0.016	0.348	1.200	1.016	1.416
Nonconformity	-0.102	0.111	0.849	0.357	-0.320	0.115	0.903	0.726	1.122
Risk Acceptance	0.147	0.104	1.991	0.158	-0.057	0.352	1.159	0.944	1.421
Action Orientation	-0.123	0.118	1.086	0.297	-0.354	0.108	0.884	0.702	1.114
Passion	0.276	0.114	5.896	0.015	0.053	0.500	1.318	1.055	1.648
Need to Achieve	-0.055	0.111	0.244	0.621	-0.272	0.162	0.947	0.762	1.176
Future Focus	-0.060	0.090	0.437	0.509	-0.236	0.117	0.942	0.790	1.124
Idea Generation	-0.162	0.086	3.596	0.058	-0.330	0.005	0.850	0.719	1.005
Execution	0.005	0.104	0.002	0.963	-0.199	0.209	1.005	0.820	1.232
Self-Confidence	0.190	0.091	4.401	0.036	0.012	0.368	1.209	1.013	1.444
Optimism	-0.115	0.091	1.588	0.208	-0.294	0.064	0.891	0.745	1.066
Persistence	-0.089	0.141	0.396	0.529	-0.366	0.188	0.915	0.694	1.207
Interpersonal Sensitivity	-0.130	0.084	2.384	0.123	-0.295	0.035	0.878	0.744	1.036

Note. Differences at the 95% confidence level highlighted in yellow.

Table 7
Logistical Regression Results for Entrepreneurship Students Identifying as White Compared to Entrepreneurship Students Who Do Not

Model parameters (Variable White Vs Non-White): White = 1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	1.992	1.402	2.018	0.155	-0.756	4.739			
Independence	-0.367	0.196	3.506	0.061	-0.751	0.017	0.693	0.472	1.017
Limited Structure	0.281	0.163	2.958	0.085	-0.039	0.601	1.324	0.962	1.824
Nonconformity	-0.349	0.218	2.555	0.110	-0.777	0.079	0.705	0.460	1.082
Risk Acceptance	-0.033	0.220	0.023	0.881	-0.464	0.398	0.968	0.629	1.489
Action Orientation	-0.063	0.234	0.072	0.789	-0.522	0.397	0.939	0.593	1.487
Passion	0.401	0.245	2.691	0.101	-0.078	0.880	1.493	0.925	2.412
Need to Achieve	0.486	0.238	4.173	0.041	0.020	0.952	1.626	1.020	2.591
Future Focus	-0.099	0.180	0.299	0.584	-0.452	0.255	0.906	0.636	1.290
Idea Generation	-0.004	0.168	0.001	0.981	-0.334	0.326	0.996	0.716	1.385
Execution	0.023	0.219	0.011	0.918	-0.406	0.451	1.023	0.666	1.570
Self-Confidence	0.310	0.181	2.923	0.087	-0.045	0.665	1.363	0.956	1.945
Optimism	-0.452	0.187	5.833	0.016	-0.818	-0.085	0.637	0.441	0.918
Persistence	-0.336	0.277	1.469	0.226	-0.878	0.207	0.715	0.415	1.230
Interpersonal Sensitivity	-0.143	0.168	0.726	0.394	-0.471	0.186	0.867	0.624	1.204

Note. Differences at the 95% confidence level highlighted in yellow.

Table 8

Logistical Regression Results for Entrepreneurship Students Identifying Their Country of Origin as the "US" Compared to Entrepreneurship Students from Outside the US

Model parameters (Variable US ENT versus Non-US ENT): US ENT = 1

Source	Value	Standard error	Wald Chi-Square	Pr > Chi²	Lower bound	Upper bound	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept	-0.176	1.800	0.010	0.922	-3.705	3.352			
Independence	-0.890	0.255	12.194	0.000	-1.390	-0.391	0.411	0.249	0.677
Limited Structure	0.278	0.208	1.786	0.181	-0.130	0.687	1.321	0.878	1.987
Nonconformity	0.544	0.289	3.556	0.059	-0.021	1.110	1.723	0.979	3.033
Risk Acceptance	0.221	0.282	0.614	0.433	-0.331	0.772	1.247	0.718	2.165
Action Orientation	0.291	0.308	0.891	0.345	-0.313	0.895	1.338	0.731	2.447
Passion	0.142	0.318	0.199	0.655	-0.482	0.766	1.153	0.618	2.152
Need to Achieve	0.271	0.300	0.816	0.366	-0.317	0.858	1.311	0.729	2.359
Future Focus	0.193	0.236	0.669	0.413	-0.270	0.656	1.213	0.764	1.928
Idea Generation	0.061	0.220	0.076	0.783	-0.370	0.492	1.063	0.691	1.635
Execution	-0.260	0.284	0.840	0.359	-0.816	0.296	0.771	0.442	1.345
Self-Confidence	0.340	0.230	2.189	0.139	-0.111	0.791	1.405	0.895	2.205
Optimism	-0.533	0.254	4.389	0.036	-1.031	-0.034	0.587	0.357	0.966
Persistence	-0.391	0.348	1.258	0.262	-1.074	0.292	0.676	0.342	1.339
Interpersonal Sensitivity	0.089	0.219	0.165	0.685	-0.341	0.519	1.093	0.711	1.680

Note. Differences at the 95% confidence level highlighted in yellow.

Figures

Figure 1
Initial and Future Student Entrepreneurial Intentions by School

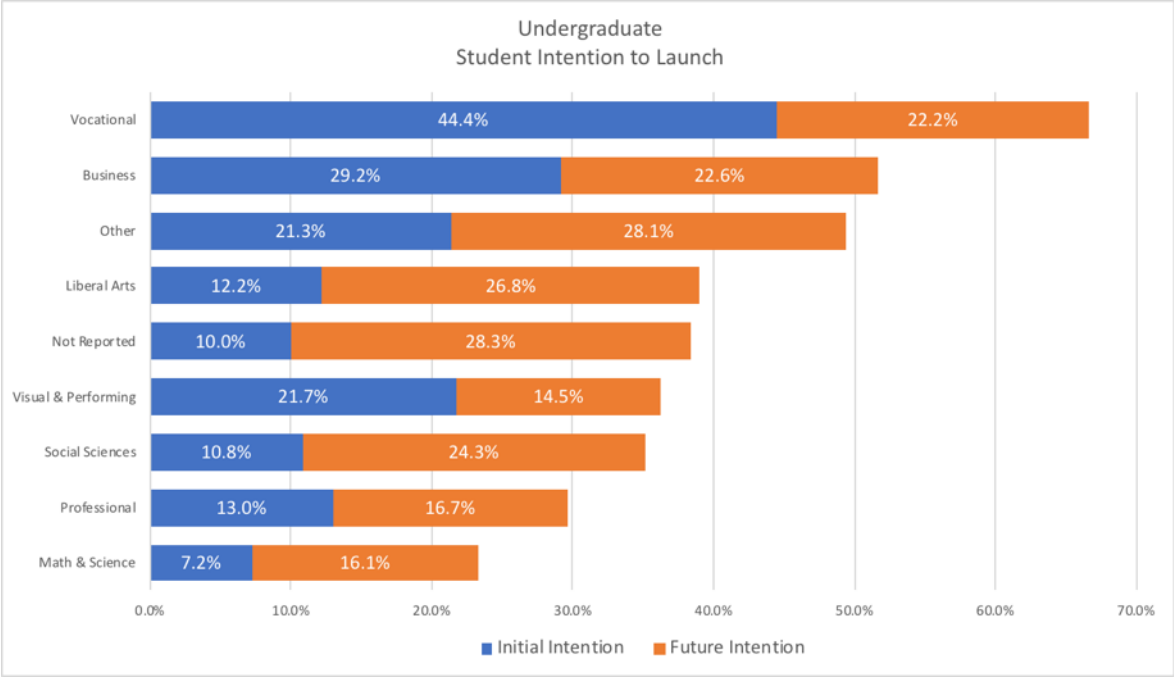


Figure 2
Initial and Future Student Entrepreneurial Intentions by Major

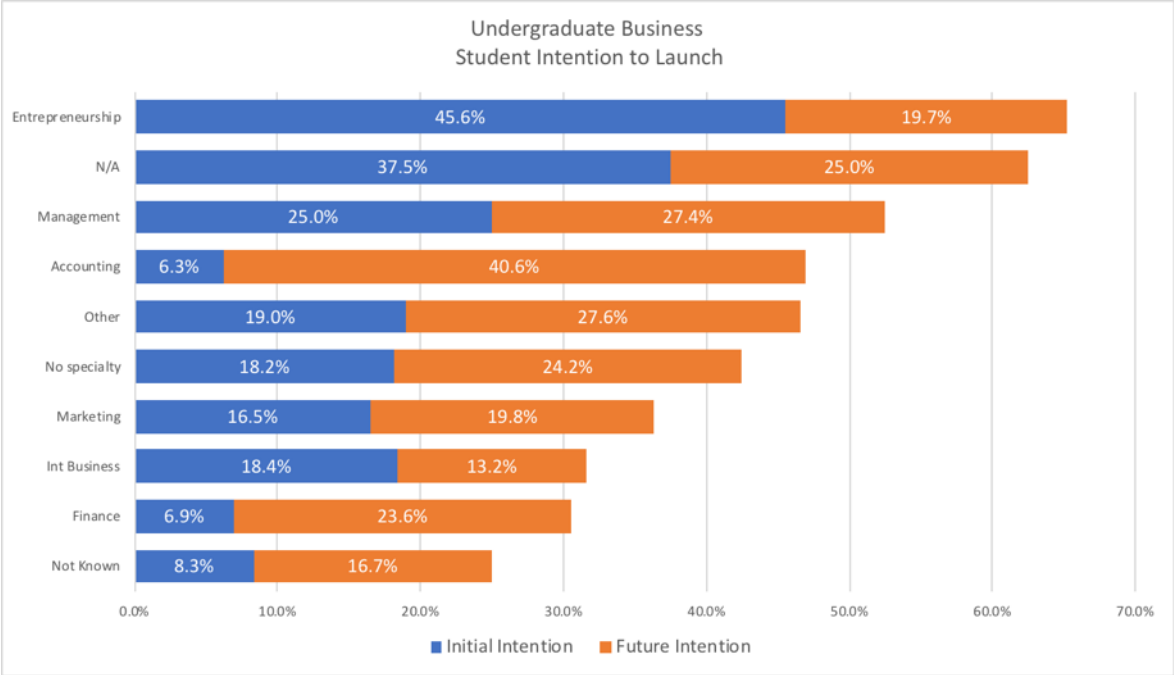
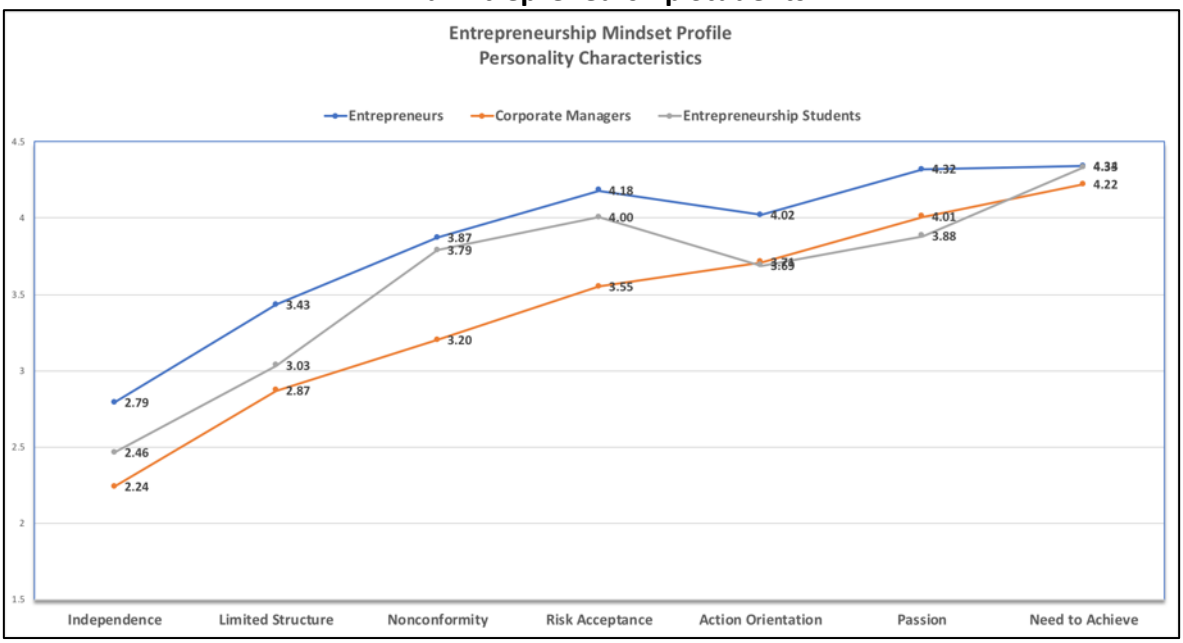
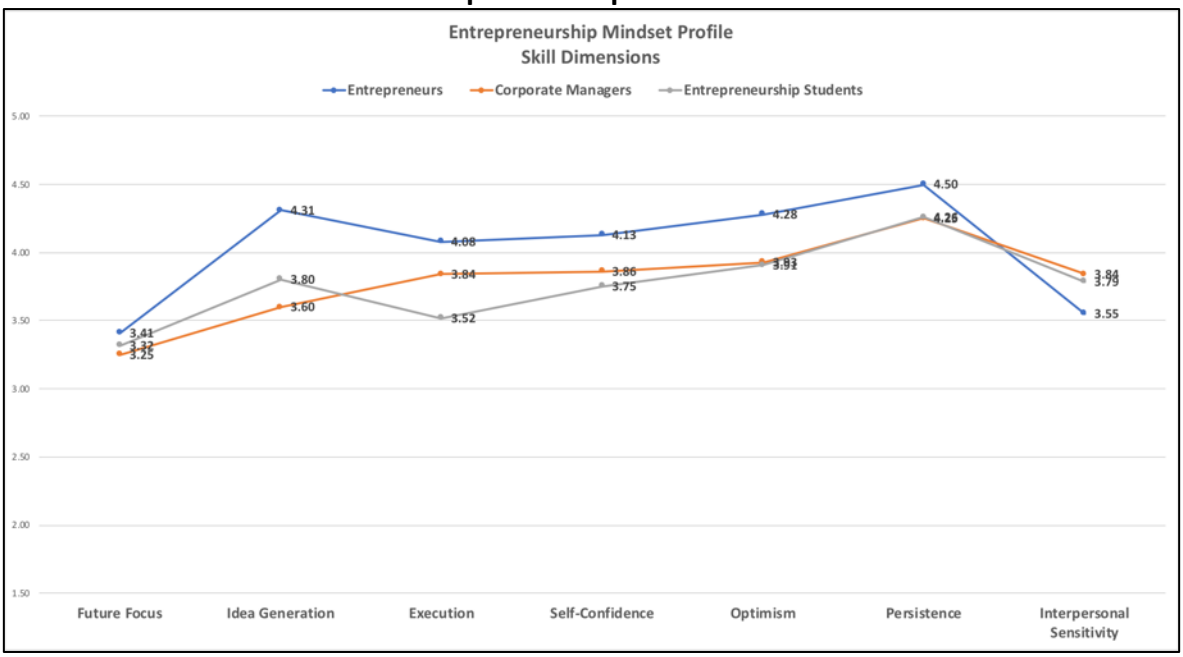


Figure 3
Comparison of EMP Personality Characteristics of Entrepreneurs, Corporate Managers, And Entrepreneurship Students



Note. Entrepreneurs and corporate managers mean scores derived from "Measuring the Entrepreneurial Mindset: The Development of the *Entrepreneurial Mindset Profile (EMP)"* white paper.

Figure 4
Comparison of EMP Skills Dimensions of Entrepreneurs, Corporate Managers, And Entrepreneurship Students



Note. Entrepreneurs and corporate managers mean scores derived from "Measuring the Entrepreneurial Mindset: The Development of the Entrepreneurial Mindset Profile (EMP)" white paper.

Figure 5
Studies Summary

Authors	Number of Universities	Number of Student Groups	Entrepreneurship Students	Gender	Ethnicity	Country of Origin
Aloulou 2016	1	1	–	✓	–	–
Altinay, Madanoglu, Daniele, & Lashley 2012	1	1	–	–	–	–
Asamani & Mensah 2013	1	4	–	–	–	–
Atsan 2006	2	1	–	–	–	–
Çolakoğlu & Gözükara 2016	1	1	–	–	–	–
Davis, Hall, & Mayer 2016						
Ertuna & Gurel 2011	5	2	–	–	–	–
Krueger, Reilly, & Carsrud 2000	1	1	–	–	–	–
Langkamp Bolton & Lane 2012	1	1	–	–	–	–
Liñán, Rodríguez-Cohard, & Rueda-Cantuche 2005	1	2	–	✓	–	–
Luthje & Franke 2003	1	1	–	–	–	–
Mustapha & Selvaraju 2015	3	1	✓	✓	–	–
Nishantha 2009	1	1	–	–	–	–
Ozaralli & Rivenburgh 2016	2	4	–	✓	–	–
Salamzadeh, Farjadian, Amirabadi, & Modarresi 2014	3	6	–	–	–	–
Santosa, Caetanoa, & Curral 2013	1	1	–	–	–	–
Sexton & Bowman 1983	1	4	✓	–	–	–
Shariff & Saud 2009	1	2	✓	–	–	–
Shinnar, Giacomin, & Janssen 2012	3	1	–	–	–	✓
Strobl, Kronenberg, & Peters 2012	1	6	–	✓	–	–
Torres, Mendez , Barreto, Chavarría, Machuca, & Guerrero 2017	5	1	–	–	–	✓
Uddin & Bose 2012	1	5	–	–	–	–
Yan 2010	1	1	–	✓	✓	✓
Yukongdi & Lopa 2017	1	1	–	✓	–	–
Yuliana 2017	1	1	–	–	–	–
Yusof, Sandhu, & Jain 2007	1	1	–	–	–	–
Zampetakis, Gotsi, Andriopoulos & Moustakis 2011	1	1	–	–	–	–
Zhang & Zhang 2013	6	2	–	✓	–	–
Zhao, Seibert, & Lumpkin 2010	---------- Meta-Analysis ----------					