

Entrepreneur Role Models and High School Entrepreneurship Career Choice:

Results of a Field Experiment

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Abstract

An introduction to entrepreneurship as a desirable and feasible career is likely important as an appropriate starting point for entrepreneurship education in high schools. This study sought to determine the impact of incorporating venture founder role models and/or “narratives of successful entrepreneurs”, on the entrepreneurship career intentions of high-school students. Results from a field experiment of eighty-four high school students indicated that both entrepreneurship career desirability and feasibility associated positively with entrepreneurial intentions. While types of exposure to entrepreneurial successes varied in their strength of association with entrepreneurial career desirability and feasibility, role model exposure, alone or in combination, did not associate with entrepreneurial career desirability and feasibility.

Entrepreneurship is the nexus of enterprising individuals and lucrative opportunities, initiating the recognition, evaluation, and exploitation of the opportunities (Shane & Venkataraman, 2000), and resulting in the creation of a new venture (Gartner, 1985, 1988). As noted by Bosma, Acs, Autio, Coduras, and Levie (2009) in the Executive Report of the 2008 Global Entrepreneurship Monitor, there is wide agreement on the importance of entrepreneurship for economic development in every country. Entrepreneurs drive innovation, speed up structural changes in the economy and force established companies to become better contributors to an economy. Recent years, labeled the “entrepreneurial revolution” (Kuratko, 2005), have witnessed the launch of approximately 550,000 new businesses each month in the United States alone (BetaGammaSigma, 2005). Such firms are responsible for the creation of new jobs, as 15 percent of the fastest growing new firms accounted for 94% of the net job creation in the past ten years (Reynolds, Hay, & Camp, 1999). According to Minniti & Bygrave (2004), it is through nurturing and endorsing this sort of entrepreneurial activity that the U.S. has achieved its highest economic performance in the past 10 years.

Kourilsky (1995), noting the importance of effective entrepreneurship education initiatives, asserts that “successful entrepreneurship ... will require well-trained aspiring entrepreneurs.” Yet, in a recent survey of college freshmen by *The Chronicle of Higher Education* (Hoover, 2006) entrepreneurship is not listed as one of the majors available for freshman. If colleges and universities

attempt to be responsive to the education demands of their students in some way, perhaps this absence reflects that, by the time they reach college, students have already decided not to pursue a career in entrepreneurship.

Gasse (1985) argues that entrepreneurial potential should be identified and evaluated at the secondary school level, suggesting that educators will be more successful in augmenting entrepreneurial propensity in the stage of development in which individual career options are still open. Filion (1994) emphasizes that adolescence is the ideal stage to acquire basic knowledge about entrepreneurship and foster a positive attitude about new venture creation. This study investigates one way in which the development of entrepreneurial interest in high school students can foster an understanding of entrepreneurship as a concept and a career. This study is predicated on a number of beliefs about the role of education and entrepreneurial activity. First, becoming an entrepreneur is a career choice. Most skills, talents, and knowledge can be exploited in the employment of someone (take a job) or in self-employment (make a job). Second, the perspective and skills necessary to have a successful entrepreneurial career can be learned. Third, people will not choose a career path they do not understand or appreciate. Fourth, career choices are typically formed in adolescence.

The Importance of Role Models and Entrepreneurship Career Choice Intention

Exposure to role models is key in determining vocations (Masten, Brown, & Skull-Carvallio, 1993). Research demonstrates that role models play a particularly crucial role in generating interest in entrepreneurship (Hirsch & Brush, 1984), creating positive attitudes and beliefs about entrepreneurship (Fedoryshyn & Tyson, 2003; Masten et al., 1993), and instilling entrepreneurial self-efficacy (Drnovsek & Glas, 2002; Scherer, Adams, Carley, & Wiebe, 1989). Wilson, Marlino, and Kickul (2004) point out that initial knowledge needed by a future entrepreneur starts with the presence of a role model who imparts

the knowledge that a career in entrepreneurship is both desirable and feasible. By impacting individuals in these ways, role models can impact the career choices by teens (Green & Pryde, 1990).

High-school Students and Career Choice

Individuals move through a series of specific developmental stages, during which an array of vocational choices is offered within their society (Gottfredson, 1996). Gottfredson's (1981; 1996; 2005) Theory of Circumscription and Compromise views vocational choice as a matching game between components that are both internal and external to an individual. The matching process begins after individuals learn the pertinent attributes of different occupations and of themselves, followed by discernment among the careers that encompass the rewards and requirements that align with their evolving values, goals, interests, and abilities. Circumscription is the process during which the realm of career possibilities is narrowed for each individual. It is during this process that career aspirations, among other things, are established. Once an individual begins considering specific different careers, the process of compromise is initiated, in which career options are narrowed. Individuals are unlikely to search outside of their narrowed spectrum unless they are unable to find an accessible career with which to match their occupational preferences, including goals, interests, attitudes, and abilities.

Implementation of a career choice is then characterized by identification of options, evaluation of alternatives, and selecting means of entry. The theory delineates four developmental processes important for the matching process: 1) cognitive growth and ability, 2) development of self (self-creation), 3) progressive elimination of least favored occupational options (circumscription), and 4) recognition of and adjustment to external constraints on vocational alternatives (compromise). Developmental and environmental factors combine to support the four stages of circumscription – a process by which the field of career choices is progressively narrowed. While there is some overlap, the stages approximately parallel preschool, elementary school, middle school, and high-school years,

sequentially. In the first stage, Orientation to Size and Power, individuals (ages 3-5 years) recognize that there is an adult world, containing jobs, of which they will one day become a part. In the second stage, Orientation to Sex Roles, children (ages 6-8), as dichotomous thinkers, begin to recognize behaviors and roles as belonging to one gender or the other. In the third stage, Orientation to Social Valuation, individuals (ages 9-13) think more abstractly and begin to recognize a societal hierarchy, which places a certain rank or value of jobs.

In the final stage, Orientation to Internal Unique Self (ages 14 and older), vocational development erupts into conscious awareness. Three key elements of this stage support introducing and studying entrepreneurship as a career at the high-school level. First, it is in this stage that individuals begin exploring which careers would be compatible with their personal psychological selves. Because career exploration is primarily composed of matching interests and goals with skills abilities and temperaments, individuals begin a conscious search of the vocational alternatives remaining within their “social space” to find ones that would be most personally fulfilling. Because they are now conscious of the fact that they have options, it is appropriate to prompt those that have not included a career in entrepreneurship in their social space to pay attention to this option (Gottfredson, 2005). Second, one of the challenges in this stage is that adolescents have not yet fully developed their vocationally relevant attributes, making awareness of vocational interests, abilities, and goals relatively low (Gottfredson, 2005). Development of vocational interests, values, attitudes, and special skills depends heavily on specific relevant exposure and experience, making this a perfect time to expand the array of careers. Third, this is the stage at which career development becomes complex and anxiety inciting, as it is during this time that these individuals are called to start acting on their career interests (e.g., seeking training, taking classes, pursuing job experiences) (Gottfredson, 2005). High-school students may be encouraged into action by providing them with realistic pictures of the processes and outcomes associated with careers not previously considered. Once again, new venture creation role models can

be a source of direction, helping high school students to clarify the kinds of classes and jobs that might best help prepare them to start a new business.

Role Theory, Role Models and Entrepreneurship Career Choice

An important indicator of student actions related to role model exposure is entrepreneurial intention. The Theory of Planned Behavior holds that individuals make decisions rationally by systematically using accessible information, hypothesizing that the causal antecedents of behavior are a logical sequence of cognitions. Intention is postulated to be the immediate antecedent of an individual's behavior (Fishbein & Ajzen, 1975). Ajzen (1988) indicates intentions are a function of three independent determinants: the person's attitude (the overall positive or negative evaluation of performing the behavior of interest), the subjective norm (the perceived social pressure associated with the behavior), and the perceived behavioral control (the extent to which a person feels volitional control over the behavior). It is proposed here that increasing understanding of entrepreneurship through the use of role models will impact each of these determinants to increase various entrepreneurial intentions.

Role Theory. Role theory, which has been defined as “a science concerned with the study of behaviours that are characteristic of persons within contexts and with processes that produce, explain or are affected by these behaviours” (Biddle, 1979: 11), is a broad based interdisciplinary theory with roots in anthropology, sociology, and psychology (Broderick, 1999). Role theories have primarily to do with individual and organizational implications of the process of communicating, transferring, and accepting new roles. Role modeling occurs when social behavior is informally observed and then adopted by a learner who has learned by example rather than by direct experience (Bandura, 1977). For high school students to include the option of entrepreneurship as a career, they must understand what entrepreneurship is and

what new venture creation requires of an entrepreneur. They can learn this vicariously through the example of new venture creation role models.

According to Biddle (1979: 58), a role consists of “behaviours characteristic of one or more persons in a context,” which emphasizes four terms: behavior, person, context, and characteristics. Roles are behavioral, which means that only overt actions which may be observed are considered a part of a role. Roles are performed by persons, precluding, for example, numerous forces of nature and/or acts of God. Roles are typically limited by context, indicating that a person performing a certain role is doing so in accordance with the contextual specification. Finally, roles consist of those behaviors considered characteristic of a set of persons in a context. Roles are bound by the observation of behaviors and the selected associated content. The more a high school student satisfies the role expectations of an entrepreneur, the greater the chances of success in a career in entrepreneurship (Co, 2003).

Social Learning Theory. Social Learning Theory (SLT) (Bandura, 1977) proposes continuous interactions between environmental, cognitive and behavioral elements, which influence each other reciprocally and simultaneously. Bandura’s SLT stems from gaps in other behavioral and learning theories. From Bandura’s (Bandura, 1977; Bandura & Walters, 1963) perspective, the learning process can be exponentially shortened via social exposure to models, which can be imitated. The primary focus of SLT is vicarious learning. An individual directly or indirectly notes a model’s behavior and the reinforcements for the behavior. The learner then performs the behavior without actually experiencing the associated rewards, but in anticipation of similar rewards (Bandura & Walters, 1963).

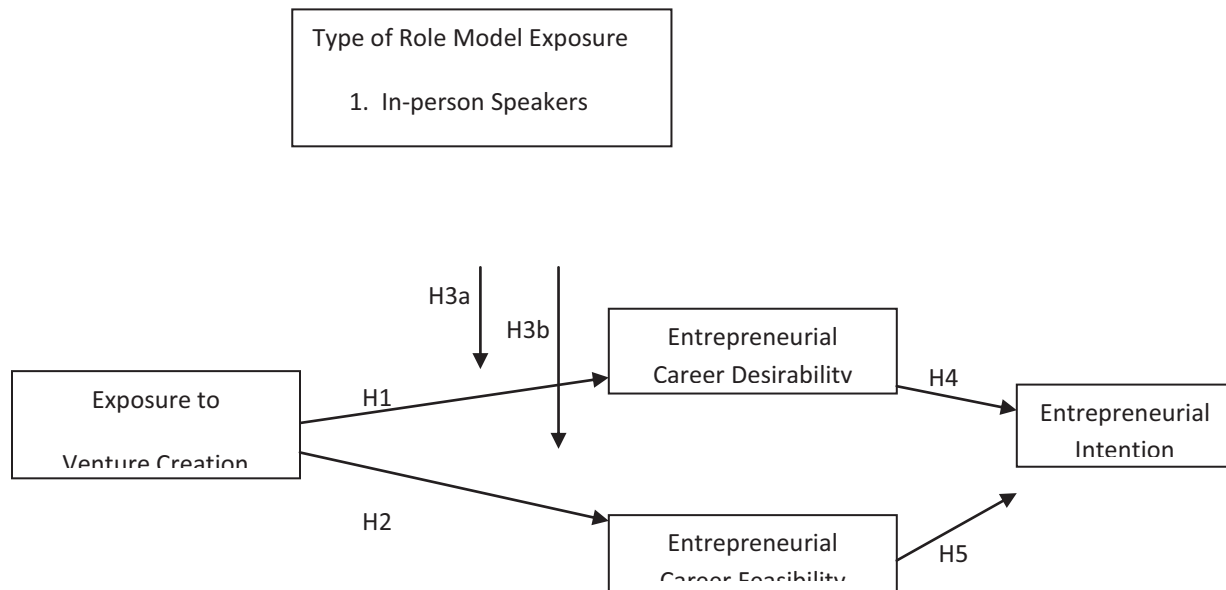
Krumboltz, Mitchell, and Jones (1976) applied SLT to career choice, emphasizing the importance of career and occupational role models. This theory asserts that an individual is more likely to express interest in a particular occupation or career path if the individual observes a respected model

successfully involved in activities associated with that occupation. When applying SLT to career selection, the dimensions of evaluation concern the career as a whole (or the culmination of the behaviors). Applying this to entrepreneurship, it can be expected that a respected new venture creation role model can enable high school students to see a career as an entrepreneur more clearly and to understand what behaviors are necessary to succeed in creating a new venture.

Hypotheses: Role Models and Entrepreneurship Career Choice

A recent study of the influence of role models on entrepreneurial intentions demonstrated that individual interactions with role models have the potential to impact entrepreneurial intentions (Van Auken, Fry & Stephens, 2006). Further, in a study of more than 5000 middle and high school students in the UK, Kickul, Wilson, Marlino, and Barbosa (2008) demonstrated the value of entrepreneurial role models for young people seeking a career in entrepreneurship. Walstad and Kourilsky (1999:118) point out that most youth “do not have the necessary knowledge or skills to act on [entrepreneurial dreams]; they are missing the role models or personal relationships to see what it means to be a successful entrepreneur and the lack the encouragement needed to undertake a new venture.” It is the contention of many researchers and entrepreneurship educators that role models are crucial to the development of entrepreneurship-related outcomes among youth. The model presented in Figure 1 depicts the relationships to be tested in this study.

Figure 1
Research Model



Role Models and Entrepreneurial Career Desirability

Krueger (1993) found that entrepreneurial intentions are derived largely from perceptions of desirability and feasibility. Attitudes and beliefs may be directly linked to the desirability of starting a new venture. Wilson et al. (2004) point out that initial information needed by a future entrepreneur can start with a role model who imparts the knowledge that a career in entrepreneurship is desirable (attitude and belief) and feasible (self-efficacy). Results from Gorman, Hanlon, and King (1997) provide preliminary evidence that entrepreneurship education effectively encourages favorable attitudes toward entrepreneurship.

Exposure to venture creation role models will provide students with the opportunity to understand the potential personal, professional, and societal outcomes associated with a career in entrepreneurship. With this understanding, attitudes are likely to be developed or modified regarding the desirability of a career as an entrepreneur. Within the circumscription process, various social aspects (e.g., challenges, rewards, general perceptions) associated with each career alternative are considered. This first requires exposure to the occupation and subsequently involves shaping a positive or negative attitude or belief about the occupation (Gottfredson, 2005). Incorporation of a successful venture creation role model (one who acknowledges a positive venture creation experience) is likely to result in positive attitudes and beliefs about entrepreneurship. The career selection process is one of continuous evaluation. Part of this evaluation consists of assessing the rewards associated with the career. These rewards come in many forms (e.g., personal, monetary, social) and help to form the attitudes that aid in the decision to pursue certain career directions. Thus, the following hypothesis is offered:

Hypothesis 1: Entrepreneurial career desirability will be positively associated with exposure to venture founder role models.

Role Models and Entrepreneurial Career Feasibility

Krueger (1993) suggests that the perceived level of feasibility for successfully starting a new business is an important precursor to the formation of entrepreneurial intentions. Individuals become more aware of the skills and roles required of entrepreneurs via exposure to relatable entrepreneurial role models, impacting their entrepreneurial self-efficacy regarding their abilities to acquire and use these skills. Self-efficacy is defined as an individual's cognitive estimate of his or her capacity to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives (Bandura, 1986; Wood & Bandura, 1989).

As pointed out by Boyd and Vozikis (1994: 73), “People who have strong beliefs regarding their capabilities will be more persistent in their efforts and will exert greater effort to master a challenge.” Self-efficacy, as proposed by Bandura (1977), has to do with an individual’s perceptions about his/her capabilities to successfully perform a given task. The idea behind self-efficacy is that people generally avoid tasks that they perceive to be outside their capabilities. Through the observation of various roles, individuals discern the salient skill sets and behaviors for success and estimate the extent to which they possess similar skills and are able to successfully perform appropriate behaviors. In addition to considerations related to one’s own abilities, self-efficacy is also influenced by one’s assessment of the accessibility of personal and situational resources and constraints that may affect future performance.

Betz and Hackett (1981; 1986) propose the concept of career self-efficacy, which describes a person’s judgment of personal effectiveness in relation to the processes associated with career choice and adjustment. Research has shown that self-efficacy beliefs are related to vocational interests and behavior. In the first empirical examination of the theory, which focused on interests, Betz and Hackett (1981) found that self-efficacy was significantly related to expressed occupational interest for college students. These findings were later replicated with an adolescent sample by Post-Kammer and Smith (1985). Subsequent studies demonstrated that occupational interests are linked to occupational choices through efficacy (e.g., Lent, Brown & Hackett, 1994). Self-efficacy has been considered as a precursory element to entrepreneurial activity, which is impacted by the presence of role models (Boyd & Vozikis, 1994; Drnovsek & Glas, 2002; Scherer et al., 1989; Shapero, 1982), suggesting the next hypothesis:

Hypothesis 2: Entrepreneurial career feasibility will be positively associated with exposure to venture founder role models.

Type of Role Model Exposure

In the process of learning through observation, individuals align their interests and potential performance with the observed behaviors and make evaluations concerning their potential success in the career being modeled. The process of observational learning has the potential to either encourage or discourage a person to pursue a particular career. Role model exposure may occur through various mediums.

Narratives. Narratives have been shown to impact individual perceptions and organizational performance. Bruner (1986) asserts that people order experiences and construct reality in two fundamental ways: propositional thinking and narrative thinking. While propositional thinking is a quasi cause-to-effect thinking, narrative thinking incorporates specifics regarding people and setting, intentions and actions. It is through these details that the stories create the “context sensitivity” to achieve their power (Stewart, 1997). Because we think in terms of our own stories, it is not far reaching for us to make sense of things through others’ stories. As pointed out by Coles (1989: 159-160), stories “cannot only keep us company, but admonish, point us in new directions, or give us the courage to stay a given course. They can offer us kinsman, kinswoman, comrades, advisors – offer us other eyes through which we might see, other ears with which we might make soundings.” Gliner, Goldman, and Hubert (1983) found that exposure to narratives impacts how individuals order and characterize information.

Guest Speakers. It is generally conceived that entrepreneurship education efforts should encompass as many experiential elements as possible, due to the nature of entrepreneurship and the importance of concept application (Hills, 1988). While the specific impact of entrepreneurship guest speakers in classrooms has not yet been investigated, entrepreneurship educators feel strongly about including practitioners in the process of imparting entrepreneurial awareness and knowledge. Hills’ (1988) survey revealed that entrepreneurship educators felt people with actual experience were

imperative in entrepreneurship education, emphasizing the need for “real world experiences” and role models. Similarly, Donckels (1991) asserts that in order to enhance attention to entrepreneurship in schools, respondents (including economics teachers, students, college graduates, and business managers) recommend accounts of practical experience in the field. Students perceive this form of role model incorporation as a positive aspect of courses allowing them to get a better sense of the “real world” of a particular profession (Fedoryshyn & Tyson, 2003).

Research on the type of role model exposure presents evidence for including both narratives and guest speakers as change agents in the classroom. Role model exposure in a combination of the forms has the potential to have larger impact based on a two key points. First, the breadth of interaction with role models is wider. By both reading about and hearing from venture creation role models, individuals will have the opportunity to be reached in different ways. Second, the depth of interaction is increased. Individuals exposed to models in both forms will have the opportunity to confirm information via comparison and contrast (between exposure types through direct consultation with the in house guest speaker). For this reason, the following hypotheses are offered:

Hypothesis 3a: The entrepreneurial career desirability of high school students will be greater with exposure to venture founder role models through a combination of speakers and books rather than through exposure to either speakers or books alone.

Hypothesis 3b: The entrepreneurial career feasibility of high school students will be greater with exposure to venture founder role models through a combination of speakers and books rather than through exposure to either speakers or books alone.

Role Models and Entrepreneurial Career Intention

The impact of role models on entrepreneurial career intention is consistent with the development of entrepreneurial potential, proposed by Krueger and Brazeal (1994), who indicate that entrepreneurial potential is developed by increasing knowledge of entrepreneurship. From Shapero's (1982) Entrepreneurial Event and Ajzen's Theory of Planned Behavior, Krueger and Brazeal (1994) advanced the conceptual framework of Entrepreneurial Potential. These authors propose that entrepreneurial potential is developed by increasing knowledge of entrepreneurship, building confidence and self-efficacy, and presenting entrepreneurship as a highly regarded, socially acceptable, personally rewarding career choice. The proposed model of entrepreneurial potential focuses on three crucial elements: perceived desirability, perceived feasibility, and propensity to act. In the model, perceived desirability and perceived feasibility work together to impact Shapero's concept of credibility, which directly impacts potential as moderated by one's propensity to act. Potential, then gives rise to intentions. Perceived venture desirability encompasses one's beliefs and attitudes about the behavior, as well as the associated social norms. Perceived venture feasibility for these researchers parallels the construct of venture self-efficacy.

Entrepreneurial Career Desirability and Entrepreneurial Intention

Attitudes and beliefs about the desirability of starting a new venture are likely to be linked to the intention to pursue activities related to starting business. Wilson et al. (2004) suggest the importance of the presence of a role model in communicating the feasibility of entrepreneurship as a career. The theories of Reasoned Action and Planned Behavior (Ajzen, 1988; Fishbein & Ajzen, 1975) incorporate attitudes and beliefs as fundamental aspects of intention formation, which is indicative of behavior. As such, they are a necessary part of any model aiming to determine influences on

intentionality – one must know how they feel about something prior to deciding whether or not they will act on it, indicating:

Hypothesis 4: The entrepreneurial career intention of high school students will be positively associated with entrepreneurial career desirability.

Entrepreneurial Career Feasibility and Entrepreneurial Intention

Self-efficacy has been theoretically and empirically related to both entrepreneurial intentions and career development. Scherer and associates (Scherer et al., 1989; Scherer, Adams, & Wiebe, 1989) introduced the concept of self-efficacy to entrepreneurship research when proposing a social learning theory perspective for entrepreneurial behaviors. Boyd and Vozikis (1994) later made a conceptual case for entrepreneurial self-efficacy by expanding Bird's (1988) model of entrepreneurial intentions to include self-efficacy. Tests of entrepreneurial self-efficacy showed that it was significantly related to an individual's intention to start a new venture (Chen, Greene, & Crick, 1998). Results from DeNoble, Jung, and Ehrlich (1999) suggest that individuals with higher entrepreneurial self-efficacy had higher levels of entrepreneurial career intentions and spent more time on initial preparation for new venture creation, suggesting:

Hypothesis 5: The entrepreneurial career intention of high school students will be positively associated with entrepreneurial career feasibility.

Method

Sample

Using information from lists provided by the Nebraska Department of Education, at the close of the 2005-2006 academic year, 22 principals and 10 Career Education instructors from private, public, and parochial schools were sent information to request participation in the study. Response was extremely low; a total of four principals responded, expressing interest in the project. At this time, the sample frame was expanded to the state of Oklahoma, a Midwest location similar to Nebraska, with established high school and school district contacts.

One hundred forty-four students from four sections of one required Introduction to Economics class, one section of an elective World Business class, and one section of an elective Leadership class were invited to participate in the study. While the economics and world business courses could have indicated a self-selection bias in favor of entrepreneurship, the courses were selected after the instructors assured the researchers that these courses had not historically contained any mention of entrepreneurship. A total of 106 (a 73.6% response rate) students agreed to participate in the study and completed the pre-test. Participant mortality was an issue, as only 93 students completed the post test. One participant exercised his/her right to discontinue taking the survey after completing about half of it, and eight students who completed the post test did not complete a pre-test, yielding incomplete data. The result was a total of 84 pre- and post-tests, matched based on the demographic information collected in the survey.

The final sample consisted of 10 Freshmen, 56 Sophomores, 13 Juniors, and 5 Seniors; 43 of whom are males and 40 females. Both gender and grade-level were dispersed across classes (all classes contained mixed grade levels). A small portion (14 students) of the sample came from a private school. The majority of the sample (around 74%) came from one school, which was compared to state averages

for purposes of generalizability. While the final sample size is relatively small, it is consistent with other research on entrepreneurship role models, e.g., 82 students in Van Auken, Fry, and Stephens' (2006) and 126 students in Henderson and Robertson's (1999) studies.

Quasi-Experimental Design

Kickul, Wilson, Marlino and Barbosa (2008) called for the use of methods other than cross-sectional surveys to investigate entrepreneurial intentions. Consistent with this call, a non-equivalent, quasi-experimental design, using pre- and post tests is used. Specifically, relative to a control group, we looked to enhance entrepreneurship desirability and feasibility by exposing experimental groups to various types of entrepreneurship role models.

. Inherent to the non-equivalent groups design are issues associated with non-equivalence, which indicates that, groups were not controlled by the researcher through random assignment. While the participating groups were selected based on their similarity, there is no guarantee that differences between the groups did not exist prior to the pre-test. Such a threat inflates the potential for Type I Error; however, it can be mitigated in the Data Analysis. A somewhat related issue to the non-random assignment of groups is the issue of vastly unequal groups. Teachers were asked to allow an entire class of students the opportunity to participate. Three experimental groups and one control group were established: Control Group: 13, Experimental Group 1 (Narratives only): 27, Experimental Group 2 (Guest Speakers only): 30, and Experimental Group 3 (Narratives and Guest Speakers): 14. Such small and unequal group sizes threaten several assumptions as well as the power of analysis.

Instrument and Intervention Development

The survey was developed using modified versions of the items and instruments indicated in the Variables and Measurement section. The final 50 item scale was reviewed by five external parties: one university entrepreneurship professor, two high-school teachers, and two colleagues.

Role Model Exposure. Students were exposed to role models via a book and/or guest speaker(s). To ensure each group received comparable stimuli for the intended research intervention, curriculum adjustment elements were controlled by the researcher. The lead researcher selected a book (from which narratives were photo-copied) and provided instructors with accompanying debrief content. In addition, the researcher selected, scheduled, and prepared guest speakers, and provided instructors with scripted introductions for each speaker.

Book Selection. As indicated by Denning (2004), more important than telling stories is telling the “right” story. In this case, the “right” story needed to contain both the “right” information and the “right” components. The “right” information comes from the definition of entrepreneurship, which, as indicated earlier, combines three existing definitions. First, entrepreneurship exists at the nexus of enterprising individuals and lucrative opportunities (Busenitz, West, Sheperd, Nelson, Chandler & Zacharakis, 2003), initiating the recognition, evaluation, and exploitation of the opportunities (Shane & Venkataraman, 2000) and involves each of these elements. Second, entrepreneurship results in the creation of a new business.

High-school teachers were consulted about the selection of narratives to use with students. Teachers suggested that the narratives needed to be interesting, about someone that they may have heard of, and concerning an industry in which they might consider entering. Based on the entrepreneurship and teacher criteria, four narratives (Ted Waitt, Gateway 2000; Jim McCaan, 1-800-FLOWERS; Ely Calloway, Calloway Golf Company; and Richard M. Schulze, Best Buy Corporation) were

selected from Ericksen's *What's Luck Got to do With It?* This book contains stories of entrepreneurs, many of whom were known, but not untouchable, while directly and indirectly making use of the concepts outlined in the above definition of entrepreneurship. In addition, it seemed most comparable to the guest speakers that would visit the classrooms, containing enough details in terms of personal characteristics and entrepreneurial behavior to be convincing, without going overboard.

Guest Speaker Selection and Preparation. Speakers were selected based on similarities to the new venture founder role models presented in *What's Luck Got to do With It?* and coached to include opportunity recognition, evaluation, and exploitation as a part of their presentations. While recognizing the individuality of each enterprise, the lead author tried to ensure a common outline to be covered in the presentation. Once the sample was established, local entrepreneurs were sought and selected using brief phone or email interviews. Results from Scherer et al. (1989) indicate that high performing role models have a more positive impact in terms of entrepreneurial task efficacy, education and training aspirations, and expectancy of an entrepreneurial career than low performing entrepreneurial role models. This indicated that it was important to select guest speakers who have had an overall positive experience with new venture creation and whose presentation styles were not radically different.

A panel of four speakers was assembled to be used in all appropriate experimental groups. The panel consisted of three men and one woman; three Caucasian and one of minority race. Each panel member had been previously, or was currently, affiliated with university entrepreneurship education programs. Two speakers were under age 30, one was between 30 and 40, and one was older than 40. Two of the speakers were from service focused businesses, while the other two focused on a specific product. Industries represented included a lawn and landscape services, antique brick warehouse sales, concrete defrosting, and oxygen level testing. Business life-cycles ranged in the panel from the

formation to the exit stages. All participants were exposed to one service business and one product business; one male and one female; one Caucasian and one minority.

Variables and Measurement

Entrepreneurial Career Intention. Entrepreneurial career intention is defined as a state of mind directing a person's attention, experience, and action toward creation of a new business (Bird, 1988) and as the state of mind directing and guiding the actions of an entrepreneur toward the implementation of recognized opportunities and the new venture creation process (Drnovsek & Glas, 2002). Considering this definition within the context of a high-school student and the focus of this research (which is on an introduction to entrepreneurship), entrepreneurial career intention was assessed in terms of the following five elements: desire to participate in subsequent high school and/or collegiate entrepreneurship courses, search for information about starting a business outside of high school formal courses, the intent to participate in high school entrepreneurship-related extra-curricular activities, seeking out an entrepreneur mentor, and/or an interest in starting a business while in high school, in conjunction with questions concerning preparedness and intent associated with new venture creation. These elements indicate, to some degree, the amount of entrepreneurship education, training and hands on experience one intends to pursue. For each item, participants were asked to respond on a five-point Likert-type scale, ranging from 1 = "Not at all", or "Not at all likely" to 5 = "Extremely likely", or "To a large degree". Assessment of entrepreneurial intentions came in the form of direct survey questions, consistent with Fishbein and Ajzen (1975: 369), who propose, "if one wants to know whether or not an individual will perform a given behavior, the simplest and probably most efficient thing one can do is to ask the individual whether he [or she] intends to perform that behavior."

Entrepreneurial Career Desirability. Measures of attitudes and beliefs about the desirability of a career in entrepreneurship were based on Fedorshyn and Tyson (2003). Similar to that developed for Fedorshyn and Tyson's research, the scale for Entrepreneurial Career Desirability consists of short declarative statements regarding the nature of entrepreneurship, the characteristics of entrepreneurs, and careers in entrepreneurship. Students were asked to respond to each item, using a scale ranging from strongly disagree (1) to strongly agree (5). Factor analysis resulted in a single retained factor, which accounted for 55.10% of measure variance with factor loadings all above .50. Resulting scale items are presented in Table 1.

Table 1
Desirability of an Entrepreneurial Career

Scale: 5 = strongly agree and 1 = strongly disagree
I would enjoy a career in entrepreneurship
A career in entrepreneurship provides intellectual challenges
Entrepreneurs find a high-degree of personal satisfaction in their work
Careers in entrepreneurship have high social status
Education in entrepreneurship can serve as broad preparation for any career
Careers in entrepreneurship have high earning potential
Entrepreneurial Attitudes/Beliefs scale adapted from Fedorshyn and Tyson (2003)

Entrepreneurial Career Feasibility. Entrepreneurial Career Feasibility was captured by entrepreneurial self-efficacy, defined as the perceptions one has about his/her abilities to successfully carry out activities related to new venture creation. DeNoble et al. (1999) proposed and tested a scale with items emphasizing a comprehensive list of demands involved in new venture creation, such as developing new product or market opportunities, building an innovative environment, initiating investor relationships, defining core purposes and developing critical human resources to successfully distinguish entrepreneurs from managers. The DeNoble et al. scale was used here. The end result of their analysis supported a six-factor structure with acceptable reliability (in parentheses): developing new product and market opportunities (.83), building an innovative environment (.76), initiating investor relations (.75), defining core purpose (.68), coping with unexpected challenges (.69) and developing critical human resources (.66.). DeNoble and colleagues cite the cut-off point for reliability measures of a newly created scale as .70. Students were asked to respond to each item using a scale ranging from strongly disagree (1) to strongly agree (5). The resulting scale consisted of items found in Table 2.

Table 2
Feasibility of an Entrepreneurial Career

Scale: 5 = very confident/capable (VC) and 1 = not all confident/capable (NAC)

I am good at developing new business ideas

I can develop new methods of production, marketing and management.

I am good at making decisions involving uncertainty and risk.

I can identify new areas for potential growth.

I can identify potential source of funding for business investment.

I can tolerate unexpected changes in business conditions.

I can develop a working environment that encourages people to try new things.

I can see new market opportunities for new products or services.

I can assemble a well-rounded team of individuals.

I can discover new ways to improve existing products.

I can bring a product or service to market in a timely manner.

I can formulate a plan of action to pursue an opportunity.

I can develop and maintain favorable relationships with potential investors.

I can react quickly to unexpected change or failure.

I can convince others to join in pursuit of my vision.

I can develop relationships with people who are connected to capital (funding) sources.

I can maintain a positive outlook despite setbacks or negative feedback.

I can react quickly to take advantage of opportunities.

Entrepreneurial Self-efficacy adapted from DeNoble et al. (1999)

Data Collection

In order to best assess learning outcomes, pre- and post-test methodology was employed. Gorman et al. (1997) points out that this method is a simple and effective means of determining specific treatment outcomes, which has not been used often enough in entrepreneurship education research. Data were collected via teachers, who administered online survey instruments via Survey Monkey, and adjusted curriculum as necessary. All participants completed an Informed Consent Form, which required signatures from both the participant and his/her guardian prior to the pre-test phase. The survey required respondents to answer each question before proceeding to the next.

Results

Hypothesis 1 (Entrepreneurial career desirability will be positively associated with exposure to venture founder role models) was tested using the Mann-Whitney U statistic for two groups. The grouping variable for this analysis was "exposure," indicating whether or not a participant was exposed to any venture creation role model. To test H1, the Mann-Whitney U test statistic was obtained for the career desirability scale score derived from the factor analysis. Descriptive statistics and result of the non-parametric analysis of the variables included in the analysis of hypothesis 1 can be found in Table 3. The test-statistic values 390 and 481 ($p = .376$) indicate that the change observed in the entrepreneurial career desirability was not significantly associated with exposure to role models.

Table 3
Non-parametric Tests of Role Models and Career Desirability

Descriptive Statistics					
	N	Mean	Std. Dev.	Min	Max
Desirability	84	0.172	1.137	-3.42	2.53
Exposure	84	0.845	0.364	.00	1.00

Mann-Whitney Test

Ranks				
	Exposure	N	Mean Rank	Sum of Ranks
Desirability	No Exposure to Role Models	13	37.00	481.00
	Exposure to Role Model	71	43.51	3089.00
	Total	84		

Test Statistics	
	Desirability
Mann-Whitney U	390.00
Wilcoxon W	481.00
Z	-0.885
Asymp. Sig (2-tailed)	.376

Hypothesis 2 (Entrepreneurial career feasibility will be positively associated with exposure to venture founder role models) was tested using the Mann-Whitney U statistic for two groups. The grouping variable for this analysis was also “exposure.” To test H2, the Mann-Whitney U test statistic was obtained for the career desirability scale score derived from the factor analysis. Descriptive statistics and results of the non-parametric analysis of the variables included in the analysis of hypothesis 1 can be found in Table 4. The test-statistic values 428.5 and 519.5 ($p = .618$) indicate that the change observed in the entrepreneurial career feasibility was not significantly associated with exposure to role models in the current sample.

Table 4
Non-parametric Tests of Role Models and Career Feasibility

Descriptive Statistics					
	N	Mean	Std. Dev.	Min	Max
Feasibility	84	0.294	0.995	-2.00	2.67
Exposure	84	0.845	0.364	.00	1.00

Mann-Whitney Test

Ranks				
	Exposure	N	Mean Rank	Sum of Ranks
Feasibility	No Exposure to Role Models	13	39.96	519.50
	Exposure to Role Model	71	42.96	3050.50
	Total	84		

Test Statistics	
	Feasibility
Mann-Whitney U	428.50
Wilcoxon W	519.50
Z	-0.411
Asymp. Sig (2-tailed)	.681

To test hypothesis 3a (The entrepreneurial career desirability of high school students will be greater with exposure to venture founder role models through a combination of speakers and books rather than through exposure to either speakers or books alone) and 3b (The entrepreneurial career

feasibility of high school students will be greater with exposure to venture founder role models through a combination of speakers and books rather than through exposure to either speakers or books alone), were assessed using the Kruskal-Wallis non-parametric one-way analysis of variance for testing equality of population medians among groups by ranks. Descriptive statistics and the results of the analyses associated with H3a and H3b can be found in Table 5. The analysis demonstrates no significant impacts along the entrepreneurial career desirability ($\chi^2 = 4.674$; $p = .197$) and entrepreneurial career feasibility ($\chi^2 = 3.147$; $p = .369$) dimensions.

While overall exposure is found insignificant, a closer examination of the differences between types of role model exposure does provide potentially valuable information. These scales measure perceptions of the career of entrepreneurship and the perceptions of one's ability to carry out tasks associated with new venture creation. Examination of Mean Ranks associated with this analysis indicates H3a is not supported. While a combination of speakers and narratives has a more powerful impact on expressed desirability for pursuing a career in entrepreneurship than narratives (i.e., book exposure) alone, exposure to role models via in-person speakers has the most impact, contrary to the hypothesized relationship. H3b is not supported. Results indicate that exposure via narratives alone has a more powerful impact on entrepreneurial career feasibility than a combination of speakers and narratives, as well as speakers alone.

Table 5

Non-parametric Tests of Role Models Exposure Type and Entrepreneurial Career Desirability and Feasibility

Descriptive Statistics					
	N	Mean	Std. Dev.	Min	Max
Desirability	84	0.172	1.137	-3.42	2.53
Feasibility	84	0.294	0.995	-2.00	2.67
Experimental Group	84	1.536	0.950	0.00	3.00

Kruskal-Wallis Test

Ranks			
	Experimental Group	N	Mean Rank
Desirability	Control	13	37.00
	Book Exposure Only	27	37.46
	Speaker Exposure Only	30	49.98
	Both Book and Speaker	14	41.29
	Total	84	
Feasibility	Control	13	39.96
	Book Exposure Only	27	36.63
	Speaker Exposure Only	30	46.80
	Both Book and Speaker	14	46.96
	Total	84	

Test Statistics ^{a,b}		
	Desirability	Feasibility
Chi Square	4.674	3.147
Df		3
Asymp. Sig (2-tailed)	.197	.369

- a. Kruskal Wallis Test
b. Grouping Variable: Experimental Group

Table 6 presents the results of correlation and regression analyses of hypothesis 4 (The entrepreneurial career intention of high school students will be positively associated with entrepreneurial career desirability) and hypothesis 5 (The entrepreneurial career intention of high school students will be positively associated with entrepreneurial career feasibility). H4 students' reported desirability of entrepreneurship as a career option positively predicts their intention to pursue an entrepreneurial career"; H5 students' perceptions of their ability/feasibility of successfully pursuing an entrepreneurial career positively predicts their intentions to pursue such a career. The results of the analyses indicate both H4 ($r=.420$, $p = .000$ and $B = .280$, $p = .006$) and H5 ($r = .486$, $p = .000$ and $B = .385$, $p = .000$) were supported. Consistent with the findings of previous research, this study finds that the perceptions of the desirability and feasibility of a career as an entrepreneur of high school students, who are considering career choices, is significantly associated with their intention to choose this career.

Table 6

Results of Regression Analysis of the Relationship Between Entrepreneurial Career Desirability and Feasibility and Entrepreneurial Intention

Correlations									
	N	Mean	Std. Dev.	Ent Intention	Desirability	Feasibility			
Ent Intention	84	0.101	1.304	1.000					
Desirability	84	0.269	0.930	0.420 (p=.000)	1.000				
Feasibility	84	0.172	1.137	0.486 (p=.000)	0.361 (p=.000)	1.000			
Model Summary									
Coefficients									
		Unstandardized		Standardized					
		Beta	Std. Error	Beta	T	Sig			
1	Constant	-.058	.135		-.427	.671			
	Desirability	.588	.141	.420	4.185	.000			
2	Constant	-.081	.125		-.650	.518			
	Desirability	.393	.139	.280	2.821	.006			
	Feasibility	.442	.114	.385	3.877	.000			
Model	R	R Square	Adj. R Square	Std Err.	R Sqr Chg	F Chg	Df1	Df2	Sig F
1	0.420	0.176	0.166	1.191	0.176	17.513	1	82	.000
2	0.552	0.305	0.288	1.101	0.129	15.051	1	81	.000

ANOVA						
Model		Sum of Sqrs	Df	Mean Sqr	F	Sig
1	Regression	24.849	1	24.849	17.513	.000
	Residual	116.351	82	1.419		
	Total	141.200	83			
2	Regression	43.061	2	21.530	17.770	.000
	Residual	98.140	81	1.212		
	Total	141.200	83			

Discussion

Summary

This study sought to determine the impact of incorporating venture founder role models, in a classroom of high-school students not previously exposed to entrepreneurship education, by focusing on an effective introduction of the entrepreneurship concept and career. Literature and theory suggested that role models should impact the perception of the desirability and feasibility of pursuing a career in entrepreneurship which would, in turn, impact individual intentions toward entrepreneurial actions. The design used to obtain the information necessary to test the proposed relationships, though not without flaw, was appropriately detailed to maximize effects. Hypotheses were tested with mixed results. The results suggest that, while the impact of narratives, speakers, and a combination of both differ, overall, role models are not found to influence the development of entrepreneurial career desirability or feasibility. The results indicate support for the hypotheses addressing the relationship between desirability and feasibility and entrepreneurial intentions.

Contributions to Scholarship

A study of entrepreneurship as a career by Henderson and Robertson (1999: 242) found that teachers and career guidance counselors were perceived by students to have little direct impact on entrepreneurship as a career choice. Indeed, they were considered to have insufficient knowledge of small firms and entrepreneurship as a career to provide information of value. Results from this inquiry point directly and indirectly to several factors that should be considered within the realm of entrepreneurship education from this point forward. The results of this study suggest that perceptions of entrepreneurial career desirability and feasibility are linked to intentions to engage in behaviors, even while in high school, that can more adequately prepare one to start a business.

Implications

This study argues that entrepreneur role models must be included in any serious attempt to teach the perspective and introduce the skills that can result in more students choosing to make jobs. This research begins to demonstrate that entrepreneur role models can be an effective means of exposing a significant number of high school students to the careers in entrepreneurship. As such, it may be possible for high schools to increase the total number of potential entrepreneurs at a relatively low cost and with few structural changes. This study focuses again on the roots of entrepreneurship education in terms of content and process, emphasizing a proper introduction of the concept and careers of entrepreneurship from entrepreneurs themselves. Understanding how to better teach entrepreneurship is a worthy endeavor, however, effectively introducing entrepreneurship is a necessary precursor to effective education, as it is the introduction that will help to create the demand

for the education. One simply cannot assume that most students understand what entrepreneurship is, nor understand what it takes to become an entrepreneur. Students are not likely to pursue entrepreneurial directions, contributing to the creation of more businesses, if they are unaware of the potential of entrepreneurship as a career. The importance of this study lies in the potential to learn some simple and cost-efficient ways in which students may be encouraged to consider various entrepreneurial directions which will enhance entrepreneurial perspective and thereby increase the likelihood of new venture creation.

Results from this inquiry point directly and indirectly to several factors that should be considered within the realm of entrepreneurship education from this point on. First, entrepreneurship can be introduced as a career choice. Previous research reveals that the vast majority of students have little direct interaction with the process of starting a business by the time they reach adolescence. Additionally, career theory suggests that without exposure to various careers, an individual's spectrum of career alternatives is severely narrowed. Combining previous evidence with the findings of this study, it is clear that an effective introduction to entrepreneurship may be important as the appropriate starting point for all entrepreneurship education.

Second, entrepreneurship should be introduced as a career option in high school. Adolescence is a time characterized by a great deal of dissonance. Evidence suggests that this is not only a time during which students are beginning to consider and evaluate various career options, but also a time during which independence and freedom are of primary importance. Entrepreneurship educators should focus on capitalizing on these two aspects of the high-school student by introducing and fostering an environment which encourages entrepreneurship. Moreover, a number of articles in the popular press (e.g., Bandyk, 2009; Jayson, 2006) are reporting on the distinctive entrepreneurial orientation of Generation Y. The new generation would seem to call for even more attention to entrepreneurship.

Finally, despite the lack of significance revealed in this initial inquiry, theoretical evidence presented in the literature review offers a strong argument that exposure to role models who have gone through the process of starting a business can positively affect the intentions of high school students to pursue a career in entrepreneurship. Findings from this study also indicate various types of exposure produce different amounts of change in Entrepreneurial Intentions. This study, then, provides entrepreneurship educators and curriculum development specialists with information to act upon. Career educators and curriculum developers should consider creating a powerful introduction to entrepreneurship to be included in a required course.

Limitations and Future Research Directions

The venture founders selected for the narratives may have been inherently different than those selected as guest speakers. Three-fourths of the venture founder narratives were about organizations with which the students were likely familiar, and which were well into the growth or maturity stages of their business life cycle. There is the potential that students had different perceptions about these entrepreneurs than they might have had about the guest speakers, who were founders of smaller organizations generally in much earlier stages of their business life-cycle. It is also possible that the students attributed the attractiveness of the venture founders' business type (e.g., landscaping company) with the attractiveness of entrepreneurship itself. This limitation threatens the internal validity of the study in the sense that the type of exposure was not as isolated as intended.

The sample obtained for purposes of the study was disappointing to say the least. The first and most significant impact of the small sample was the resulting group sizes. Using in-tact groups delineated by classes yielded vastly unequal and small groups. The small numbers did not provide a sufficient point of comparison for the other experimental groups. In general, the small unequal groups

threatened to mask the role of venture founder models in the classroom by not offering enough data points to demonstrate the effects.

Second, the small sample compromised statistical power and limited the types of analyses appropriate for the data. Exploratory factor analysis necessitates a minimum of 50 participants per factor. This had implications for the construct validation, in which analyses parameters had to be specified to retain only one factor. A full-fledged exploratory factor analysis could not be conducted to see if three distinct factors were indicated by the factor loadings, due to the overall sample size. Additionally, the small size and unequal groups contributed to the violation of statistical assumptions requiring the use of non-parametric statistics (a change from the originally planned parametric analyses). This limitation also increased the potential for a Type II Error.

Finally, the small sample size compromised generalizability of the findings. The majority of the sample came from one urban, public school. It is highly likely that differences exist between students of public and private or parochial schools, based on, among other things, socio-economic status. Similarly, there are likely differences between urban and rural students, based on learning environments and experiences. This aspect of the limitation compromises the ability to generalize the findings beyond urban public schools.

Effective research is distinguished by both the quality and quantity of answers to questions it answers, as well as the quality and quantity of questions it generates. Through the findings and limitations of this study, several productive areas for future research can be ascertained. In the present study, attempts were made to keep the actual exposure to venture founder role models relatively consistent. As it happened, there was a potential difference in the type of entrepreneurs to which participants were exposed. The only criteria mentioned in the literature to date regarding model exposure is “positive” or “successful,” which encompasses a broad range of venture founders. As

demonstrated in this study, selection of models solely based on this criterion compromised internal validity. Is the impact of a model more powerful if the model comes from a large well-known organization because of the associations an individual has with success? Or, are smaller, local models more powerful because they are more relatable? This would be a complex inquiry, likely necessitating several stages of research. A starting point would be determining whether or not differences are attributable to the type of model. Also, the benefits of role models for entrepreneur career choice should be investigated in different cultures. The Global Entrepreneurship Monitor research program has demonstrated that there are similarities and differences in venture creation in different cultures. It might be interesting to discover whether new venture role models differ in their influence by culture.

Conclusion

This report began with an introduction to a multi-faceted problem: How can interest in entrepreneurship be generated through education to the point of action? To scratch the surface of the posed problem, this initial inquiry was developed to determine the capacity of role model exposure to deliver an effective introduction to entrepreneurship by examining the impacts of such exposure on a choice of a career as an entrepreneur. Results from this research unveiled a research path worthy of travel. By demonstrating that a relationship exists between the components of career choice and an entrepreneurial career, this research provides educators with practical information and tactics which are easily implemented. Furthermore, the results of the study raise a number of questions to be explored, including, modifications of the current study and new areas of research. The bottom line is that strategically honing entrepreneurship education efforts is important and there is much work to be done to ensure that the mission associated with this education is efficiently and effectively carried out.

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