EXPLORING THE ROLE OF EDUCATION IN INFLUENCING PERCEIVED DESIRABILITY, FEASIBILITY AND INTENTIONS TOWARDS ENTREPRENEURSHIP

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ABSTRACT
This paper explores the potential for education to influence attitudes towards entrepreneurship. The impact of Enterprisers, an extra-curricular, programme designed to build skills and positive attitudes towards enterprise in university students, is considered through its effect on self-efficacy, given its influence on desirability, feasibility and intentions. Following discussion of theoretical issues, the paper describes the programme, evaluation methodology and measure of entrepreneurial self-efficacy. Relationships between programme elements and lessons learned are explored with a particular focus on the impact on female students of entrepreneurial role models known personally to participants and others who are introduced as speakers during the programme.

INTRODUCTION
Based upon the premise that it is possible to develop interventions capable of changing attitudes and intentions towards entrepreneurship, a range of intensive entrepreneurship programmes are being developed which complement curriculum-based offerings within schools, colleges and universities. This focus on young people is driven, in part, by a desire to cultivate a more entrepreneurial culture in which innovation and enterprise become normal behaviours. Attitudes acquired whilst young tend to influence later intentions and behaviours; if shifts in attitudes are to be achieved, arguably, they may be easier to realise in young people than those who have already embarked upon a particular career path. In the context of developing and delivering educational interventions, research points to the need to convey both knowledge about enterprise and to employ approaches which encourage students to strengthen their enduring belief that they have the ability to perform specific tasks (Cooper & Lucas 2006). Building confidence in skills and abilities underpinning innovation and entrepreneurial behaviour is vital to bring about changes in attitudes and behaviours, as it is an individual’s perceived abilities in aspects such as recognising, developing and implementing plans to exploit opportunities which influence the likelihood of them pursuing their future use and persisting in the face of difficulty.

High levels of self-efficacy are required to choose and be successful in fields perceived as challenging and it can be seen how persistence is highly relevant for entrepreneurship and starting a company. An individual’s perception of an opportunity depends upon whether they consider the action to be feasible and the outcome to be desirable where feasibility is built around perceived competency to carry out a specific behaviour and desirability relates to how personally rewarding the behaviour/task is perceived to be. Kreuger et al. (2000) suggest that intentions are shaped by raising perceived desirability and feasibility. If education programmes are to increase motivation towards entrepreneurship they need to have a positive impact on confidence in areas associated with enterprise to attract individuals towards a venturing career path, encouraging them to try new things and to persist when faced by difficulty.

This paper explores the effects of role models on women’s entrepreneurial self-efficacy using data from three offerings of the Enterprisers programme. Enterprisers is an extra-curricular, week-long, residential entrepreneurship education programme which seeks to build skills and positive attitudes towards enterprise in a diverse group of young people from universities in the United Kingdom (UK) and overseas. Since its UK-launch in January 2003 twelve full programmes have been offered, involving over 750 participants. Research reported elsewhere has demonstrated the positive impact of Enterprisers on self-efficacy in areas central to entrepreneurship, effects shown to endure.
six-months or more post-programme (Cooper & Lucas 2006). Enterprisers has also been shown to have a positive immediate impact on entrepreneurial intentions, although findings of research six months or more after the programme suggest its impact here is more transitory.

The purpose is to use Enterprisers to explore the effects of role models in entrepreneurship education. The programme makes extensive use of entrepreneurs as guest speakers, who in acting as role models, offer a rich source of vicarious learning; therefore, guest speakers and others to whom participants are “exposed” during the programme, are a focus of enquiry, as are other entrepreneurs known to the participants. After a presentation of the larger UK context and some relevant literature on role models to guide the enquiry, the paper briefly describes the programme, the repeated measures evaluation methodology, and the measure of entrepreneurial self-efficacy employed. The paper then draws upon the data collected from three offering of the programme and uses statistical analysis to explore relationships between lessons learned from entrepreneurial speakers and changes in self-efficacy related to the pursuit of an entrepreneurial career path. Implications of the findings are explored in the conclusion to the paper.

**THE GOVERNMENT AGENDA FOR ENTERPRISE AND EDUCATION**

Government agencies in many countries are constantly searching for ways to inject new economic dynamism and boost domestic innovation and productivity. An innovative and talented workforce is viewed as a key resource for all organisations, and while evidence suggests that many of the skills and ways of thinking associated with innovative and enterprising behaviour are developed through authentic experience (Harrison et al. 2004, Cooper 2006, Majid 2006), growing attention is being paid to methods by which these attitudes and skills might be cultivated at an earlier stage. Many governments are looking to educational institutions, from primary schools to universities, to address a wide issues associated with creativity, innovation and enterprise.

In the United Kingdom (UK) the last decade has witnessed the government placing the education system at the centre of its policy agenda to develop a more competitive and productive economy, evidenced by initiatives such as Science Enterprise Challenge (SEC) (Hartshorn & Hannon 2005). Through its SEC programme the UK government has placed significant resources in the hands of universities to deliver enterprise education to science, engineering and technology (SET) faculties (Cooper et al. 2004, Cooper & Hetherington 2005). This has enabled many institutions to engage with the enterprise agenda to develop curriculum- and non-curriculum-based modules/courses and activities such as business plan competitions (McGowan & Cooper 2007). Increasing numbers of institutions are extending engagement into non-management and SET faculties so that enterprise is embraced as a university-wide issue. Education programmes may be effective at raising awareness of key issues; the extent to which they nurture and develop critical skills and attitudes, influence intentions and, ultimately, behaviour, depends upon a range of factors, since research suggests the importance of conveying not only knowledge about enterprise but also adopting approaches to teaching and learning which contribute to strengthening aspects such as confidence.

When individuals leave the formal education system, whether secondary or tertiary, only a small minority start ventures immediately; most seek employment where their knowledge of enterprise, developed through school/college/university-based education, means they are better-placed to understand the challenges which their employers face on a short- and longer-term basis. Authentic experience which they gain in the workplace provides the chance to build upon earlier learning and identify opportunities suitable for exploitation. After a period in employment some individuals will opt to pursue an entrepreneurial path; evidence suggests that the majority who start ventures, particularly in technology-based sectors, are in their mid- to late-thirties (Cooper 1973, Cooper 2006, Harrison et al. 2004, Majid 2006, Roberts 1991), so the skills and attitudes which they use to identify and shape their own opportunity are nurtured for, on average, a decade or more within the workplace.

Education has a role to play in raising awareness of enterprise and entrepreneurship and developing the skills and attitudes which provide the foundation for venturing activity. Thus, particular attention is being paid to the nature and content of enterprise education programme offered particularly within the university environment to establish what should be delivered and how best to provide a window into enterprise. Research suggests the importance of conveying knowledge about enterprise and using approaches to teaching and learning which stimulate learners to strengthen their confidence and commitment to pursue entrepreneurial careers and enhance their entrepreneurial self-efficacy, defined as their belief that they can successfully carry out the tasks they will be required to perform if they are to become entrepreneurs (Anna et al. 1999, Cooper & Lucas 2006, De Noble et al. 1999). If individuals lack this self-confidence they are much less likely to form companies (Shapero & Sokol 1982) and to be successful in businesses they do start (Anna et al. 1999, Wood & Bandura 1989).
BELIEFS, SELF-EFFICACY AND INTENTIONS

An individual’s levels of confidence and self-belief in his or her abilities to perform successfully the tasks associated with establishing a new venture will have a very strong influence upon whether or not he or she, subsequently, undertakes such behaviours (Chen et al. 1998, Shapero & Sokol 1982) and whether he or she is successful in their pursuit. Self-efficacy (Bandura 1997) is central to an individual’s willingness to act entrepreneurially across a wide range of activities which include identification of opportunities capable of supporting the creation of a new venture and the pursuit of such opportunities. According to Bandura self-efficacy beliefs are, “beliefs in one’s capabilities to organise and execute the courses of action required to produce given attainments” (1997, p. 3). Self-efficacy with respect to a range of aspects will have a significant impact upon the likelihood that individuals will engage in those activities, particularly if they are seen as difficult or challenging; those with low levels of self-efficacy will be likely to shy away from challenge, or, if they do try an activity will be more inclined not to persist in the event of early failure. By contrast, highly self-efficacious individuals will tend to take on challenges beyond their current known capabilities, and if they do not succeed first time, will still be enthusiastic to try again in the belief that they are capable of achieving the desired outcome, given sufficient effort or favourable circumstance. Highly self-efficacious individuals are inclined to reach beyond their known limits, which means that when they are successful their self-efficacy rises to new heights, stretched beyond its previous level. Lucas & Cooper (2004) suggest that self-efficacy underpins a range of dimensions and behaviours highly relevant to the enterprise agenda, such as innovation and opportunity recognition (Ardichvili et al. 2003) and career persistence (Mau 2003). Gender differences in self-efficacy have been shown to exist as women frequently demonstrate lower levels of self-efficacy than their male counterpart, particularly in domains such as maths and science which relate to male-dominated careers (Pajares 1996a, VanLeuven 2004). Betz & Hackett (1981) found that despite no differences between verbal and quantitative ability on standardised tests, male college students had an equally high sense of efficacy for both male-dominated and female-dominated occupations while female students judged themselves more efficacious for occupations traditionally held by women and had a weaker sense of efficacy regarding their abilities to enter occupations dominated by males. This is highly relevant given the view that entrepreneurship is perceived as a male activity (Gupta et al. forthcoming).

A number of behavioural models are founded upon the concept of self-efficacy and point to how it may influence intentions and behaviour. Intention to start a venture is central to entrepreneurship (Bird 1988, Krueger 1993, Krueger at al. 2000) and an individual’s beliefs regarding his or her abilities in associated tasks are likely to influence whether or not he or she pursues such behaviour. A series of steps, however, lie along the causal path between beliefs and behaviours, owing to the fact that beliefs inform attitudes, which in turn inform intentions which, ultimately, lead to behaviour (Fishbein & Ajzen 1975). Realising shifts in beliefs and attitudes is not in itself enough to deliver changes in behaviour; individuals require to form intentions to behave differently as a pre-requisite to action. In forming intentions an individual will take into account constraints imposed by his or her background/experience as well as by the external environment. Boyd & Vozikis (1994) refer to Ajzen’s (1987) work which links perceived control over behaviour with Bandura’s self-efficacy concept. Both are built around the idea of perceptual factors associated with attaining particular goals. Shapero & Sokol (1982) introduce aspects of desirability and feasibility whereby perceived desirability, or personal attractiveness of starting a new business, and perceived feasibility, built around a sense of personal capability which itself relies strongly on the individual’s self-efficacy levels, will both be influential in shaping intentions to act. It is suggested by Krueger et al. (2000) that raising perceived desirability and feasibility of entrepreneurship will help to shape positively intentions towards the activity.

Betz and Hackett (1981, 1997) argue that self-efficacy is a key determinant in career intention since confidence to succeed in pursuit of a particular career is likely to influence which path is chosen. If individuals are to select a route which is non-standard, difficult or challenging they require higher levels of self-efficacy; here the link between self-efficacy and the ability to persist in the face of difficulty is highly relevant to those in pursuit of entrepreneurial pathways, where confidence is central to starting a company. Prospective venturers require confidence in their abilities in areas which include innovation, opportunity recognition and the intention to start a venture (Anna et al. 1999, Ardichvili et al. 2003, Baum & Locke 2004, Chandler & Jansen 1992, Chen et al. 1998, Krueger 1993, 2000, Krueger & Brazeal 1994, Markman et al. 2002). The research reported here uses a measure of entrepreneurial self-efficacy to explore the impact of role models in education and society since self-efficacy, related as it is to perceived capability to act, is important in influencing perceived feasibility of entrepreneurship.
Vicarious Experience and Modelling

A key question relates to the sources of self-efficacy; performance of authentic tasks is one source, the others being vicarious performance, social influence and emotional states (Bandura 1997). Bandura emphasises the primacy of performing authentic tasks in developing self-efficacy and some education programmes incorporate placements and company-based projects (Cooper et al. 2004, Heinemann et al. 1992). More commonly, educators build vicarious learning opportunities into the curriculum via, for example, written, video or live case studies which present entrepreneurs as possible role models. Utilising entrepreneurs as live case studies allows students to listen to, observe and have a modest degree of interaction with the speakers. Introducing a range of guest entrepreneurs enables students to draw social comparisons between themselves and the entrepreneurial personalities and to learn directly from those with first-hand experience of venturing (Chen et al. 1998). The part played by bodily/emotional states in developing self-efficacy suggests that the extent of student engagement is important; the greater the level of active engagement the greater the likelihood that the experience will result in positive changes in self-efficacy. Thus, it is important to consider theoretical and conceptual issues during programme development and to “design-in” elements with the potential to increase self-efficacy and nurture positive perceptions around desirability and feasibility of entrepreneurship.

Several theoretical constructs underpin the use of guest entrepreneurs as role models in the classroom as well as the impact which other entrepreneurs who are known to students may have on their beliefs and attitudes towards entrepreneurship in general, and their own capability to follow an entrepreneurial career in particular. Work within career theory and organisational behaviour points to contributions which role models make in shaping the development of individuals (Schein 1978, Dalton 1989); from the career perspective good role models are associated with success while career failure may be attributed to lack of a role model. At a macro level the more models there are in society the more likely it is that individuals will be encouraged to form firms (Shapero & Sokol 1982).

Role models are “cognitive constructions based on an individual’s needs, wants and ambitions” (Gibson 2004) and are based upon the perception and cognition of the observer who “selects, organizes and transforms stimuli” (Decker 1986) in advance of behaviour (Mantz & Sims 1981); “knowing that a given person’s (the model) behaviour is effective in producing valued outcomes or avoiding punishing ones increases the observer’s attentiveness to the model’s actions” (Decker 1986). Traditionally, role models were perceived to be individuals, such as parents or teachers, in influential roles who provided a basis for imitation. More recently Gibson (2004) has proposed that role models are “active, cognitive constructions devised by individuals to construct their ideal, or “possible” selves based upon their own developing needs” (Gibson 2003).

Gibson (2003) characterises the process of identifying a role model according to two cognitive dimensions (positive/negative, global/specific) and two structural dimensions (close/distant, up/across-down). Cognitive dimensions refer to the observer identifying a model in both positive and negative terms in relation to their behaviour, attributes and style, and in both general and specific terms. The structural dimensions reflect how a model can be influential from a distance, for example through the media, or can be located in close proximity to the individual, for example by being a family member, friend or employer. Gibson (2004) notes the tendency for “individuals to be attracted towards people with whom they perceive some similarities or occupation of a position which is deemed desirable by the observer”; bases of similarity include age, gender and ethnic background. The observer identifies both positive behaviours, which they will seek to emulate, thereby increasing similarities between themselves and the model, and negative aspects which they will try to avoid replicating, thereby avoiding unnecessary trial and error (Gibson 2004, Decker 1986, Mantz & Sims 1981). Observers may draw lessons from a number of individuals and develop their ideal selves, thus piecing together dimensions and lessons from a number of sources to develop a composite model.

Models influence behaviour of the observer by influencing expectancies, “the mechanism through which past experiences and knowledge are used to predict the future” (Gatewood et al. 2002). Expectancies are developed from beliefs about oneself, about others and about the non-social world, such as, event expectancies: thus, beliefs themselves originate from direct and indirect experience and the beliefs of others. Mantz and Sims (1981) identify two types of expectations likely to be influenced by role models, self-efficacy expectations and outcome expectancies (Mantz & Sims 1981). Levels of effort expended by the observer will be greater and the period of persistence will be longer the stronger the perception of self-efficacy. By observing a model an observer will gain information which will form and shape outcome expectancies (Mantz & Sims 1981). Mantz and Sims (1981) suggest that observers identify more with the model who has had to overcome difficulty than they do with those models who appear to have had no problems, and they suggest that “positive models may engender positive outcomes in the observer, negativity or fear will also translate so that individuals develop fears and avoidance patterns.”
Models can also play an important role in influencing perceptions of the characteristics needed to succeed in a particular profession. This is important since individuals make career choices on the basis of their “perceptions of and personal fit with a given profession … individuals who see a fit between success in a given profession and their sex-role personality characteristics are more likely to perceive themselves as viable candidates for that profession” (Fagenson & Marcus 1991). This can be particularly important in the context of entrepreneurship which is seen as a male-dominated profession. Gupta et al. (forthcoming) suggest that the characteristics associated with the business world tend to be masculine, and, therefore, women may be less inclined to identify with roles in the entrepreneurial domain, particularly in high-growth areas. If individuals perceive a lack of fit between themselves and role stereotypes they will be inclined to underestimate their skills to pursue a pathway within that domain. For females considering entrepreneurial venturing as a viable career option the presence of a same-sex models in the target occupation can be particularly powerful and may help to shift views regarding gender stereotypes (Bandura 1973, Krumboltz et al. 1976, Gupta et al. forthcoming) which might encourage more women to engage in the activity, potentially increasing the pool of female role models. The current shortage of female role models in fields perceived to be male bastions, such as technology sectors, provides little by way of encouragement to would-be female entrepreneurs, particularly those who are less self-efficacious and may be in need of evidence that women can be successful as entrepreneurs, before embarking on such a pathway themselves.

Attention has been paid to the contribution of family role models in shaping the attitudes and careers of other family members and a number of studies have shown that those wanting to start their own business are likely to come from households where parents owned their own business (Blackburn & Curran 1993, Harrison & Hart 1992, Scott & Twomey 1988, Shapero & Sokol 1982). In their work Shapero and Sokol revealed that family members, and particularly the father or mothers, have the most influence in establishing the desirability and credibility of entrepreneurial action. According to Krueger et al (2000) the presence of entrepreneurial role models is only a weak predictor of future entrepreneurial activity: it is the subjective impact of role models which is a stronger predictor, such that role models affect intentions towards entrepreneurship only if they affect key attitudes such as self efficacy, hence the focus in this research on their impact on self-efficacy towards entrepreneurship.

The Enterprisers Programme
Enterprisers brings together university students for a week-long, highly interactive and participative, residential programme, designed to develop entrepreneurial skills, build confidence and create positive relationships between participants from diverse international backgrounds and subject areas. From its base in the Centre for Entrepreneurial Learning at the University of Cambridge, since its UK launch in January 2003 more that 750 individuals have participated in twelve programmes held around the UK and in Australia. Curriculum content and delivery have been developed to equip participants with project/venture skills which include networking, team building and creativity. Participants gain knowledge about resources required to undertake new activities and build a network of like-minded individuals from different countries and universities. Emphasis is on helping participants to unleash their entrepreneurial spirit, cultivating a “can do” attitude and encouraging them to acquire the skills, confidence and contacts to realise ambitions within a “safe” environment. Early programmes brought together around ten students and two facilitators from each of six universities; recent programmes have included students from a larger number of universities, with fewer from each institution. While students have mainly been university undergraduates, some programmes (not those considered here) have targeted mainly graduate students.

Programmes draw upon human capital in the enterprise community by bringing in guest speakers (including social and profit-based entrepreneurs) to act as role models and provide opportunities for students to network with and learn from those who have created their own ventures. The programme is built around four key themes intended to support students through the development of ideas/opportunities from new business to not-for-profit ventures/initiatives. Each theme broadly forms the focus for a day of the programme: The entrepreneur within each of us (Moi) focuses on defining and understanding entrepreneurship and self, including personal motivations, values, ethics and goals; Launching a great idea (Ideation/Peopleology) explores what an entrepreneur is, processes of creativity and idea generation, how to meet the needs of customers and elements in the project plan; What it will take to succeed (Nuts ‘n’ Bolts) examines leadership and teams, identifying and acquiring resources, and how to build and utilise networks to acquire project resource; finally, Keeping the dream alive (Crystal Ball) celebrates progress during the programme and explores how to maintain and sustain motivation and commitment in the future.

A range of pedagogical techniques is used to deliver the curriculum, thereby creating contrasting learning environments in which students gain new perspectives on the venture/project.
creation process. Elements of the core curriculum, including ethics, creativity, pitching and networking are delivered in large group sessions; however, frequently during such sessions students are broken into small, tutor-facilitated groups to undertake participative, highly interactive exercises. On some occasions students work independently, for example, when developing their own pitch and project idea. Core to these activities is the desire to encourage students to engage in a highly experiential and hands-on way, increasing their emotional involvement. The appearance of guest entrepreneurs from a range of backgrounds and representing diverse ages, markets and experiences, provides participants with opportunities to learn vicariously from practicing entrepreneurs, and to develop their own appreciation of the positive and negative dimensions of project development and implementation. Via vicarious observation participants may derive personal lessons regarding entrepreneurial careers, particularly in terms of desirability, feasibility and their personal capability to succeed. Students are encouraged to reflect on their experience of the learning process and record their thoughts in a daily journal.

METHODS

The data used to explore the place of role models in entrepreneurship education are taken from the evaluation of the Enterprisers programme. Enterprisers was originally organised and funded by the Cambridge-MIT Institute (CMI), and first offered at MIT in 2003. Starting in 2004 it has been led in the UK by the University of Cambridge Centre for Entrepreneurial Learning. The event has typically had 64 participating students, led by a pair of leaders and a dozen facilitators who work in pairs to work with small breakout groups of eight to ten students. While graduate students participated in later offerings, this work focuses on events that included almost exclusively undergraduates.

Because of CMI’s mission and obligation to report on results to the then Department of Trade and Industry, an unusual level of effort was invested in assessment measures that were supported by an on-going metrics development activity. Rather than relying only on event post-test data, typically focusing on issues of student satisfaction, the assessment design began with a pre-test questionnaire administered when students arrived on site, followed by a post-test on the last day of the programme. Concerned with the possibility that any results from courses of short duration might be transitory, consisting largely of student enthusiasm that would disappear over time, the students were then found six months later back at their home universities, and surveyed again.

While a large part of the surveys used have been held constant over time, sections of the instruments have been used to probe a series specialised issues. The third, fourth and fifth offering of Enterprisers included questions intended to measure the effects of outside speakers during the event both to guide future speaker selection, and to understand the most effective messages that should be invited. This paper then focuses on 78 undergraduate women who attended those three events, including the data on 46 of them who returned the six-month follow-up survey.

Role Model Identification and Categorisation of Lessons Learned

The following analysis was made possible by asking questions about the speakers, content analysis of open-ended questions and additional coding of each participant’s relationship, in terms of similarities, to each speaker. To test if speakers can be said to have an effect on the participants, the post-programme survey included a series of questions that asked each student whether they had realised or learned something important from the experiences of the speakers, and if yes, they were asked to name the speaker and write a few words that described the lesson they thought they had learned from that speaker. The question was then repeated for a second and a third speaker. At least one speaker was named by 84.6% of the participants, and 42.1% of the women participants named a woman speaker even though they made up only 10% of the speakers at the events.

Their answers were then read by different members of the research team to arrive at broad categories of lessons learned, including the need for Persistence, that one can accept Risk, or one should try again after Failure. A set of six dummy variables were then created for each speaker that a participant named, indicating whether or not each speaker had provided them with each of the lessons.

The next step created a new set of variables that aggregated the lessons learned, captured for each speaker, into a combined profile that represented all of the lessons learned by each participant. If any of the speaker lessons a participant mentioned involved persistence, for example, then a value of one was entered into the Persistence variable for the presence of Persistence in the set of composite lessons learned for the individual.

A third type of variable based on speaker lessons was then created for lessons learned by female participants from female speakers. Most of the Enterprisers speakers had been men, but 24.2% of the female participants reported a woman speaker first for lessons learned, and 17.9% reported a women speaker second or third as a source of lessons learned. A new set of dummy variables for was created
and set to one for each lesson that was attributed to a woman speaker. The remaining fields were coded with a zero for the 26.9% of the women participants who did not list a women speaker among those they reported had taught them a lesson. The values for the 15.4% who picked no speakers at all were left as missing data.

**Outcome Measures**

This paper relies on an outcome measure of entrepreneurial self-efficacy modeled on the work of Betz and Hackett’s (1997) measure of career self-efficacy. Self-efficacy plays a pivotal role in the intention model, and line of research (Ajzen 1987, Krueger 1993, Krueger et al. 2000, Krueger & Brazeal 1994, Shapero & Sokol 1982) that continues to demonstrate the importance of entrepreneurial self-efficacy in predicting the intention of becoming an entrepreneur. The measurement of self-efficacy most often employs an approach associated with Bandura (1986, 1997) that asks individuals how confident they are that they can perform rather specific tasks that are representative of a well defined domain (Bong 2006, Lucas et al. 2006), an approach seen in the work of Anna et al. (1999), Chen et al. (1998) and De Noble et al. (1999). The approach is only successful, however, if the individuals have a substantial understanding of what is involved in the performance of each of the tasks, and the Enterprisers assessment sought an alternative approach. Another choice was found in the literature for what has been generally referred to as career self-efficacy (Pajares 1996b). Used widely in the field of vocational counseling (Lent and Hackett 1987), career self-efficacy measures have proven effective for assisting adolescents and young adults make career choices and for research on the development of career choice. The work of Betz and Hackett (1981) is particularly relevant to the current study because it is used to study young women to understand how their relative lack of confidence in pursuing traditionally male careers limits their career behaviour. In their approach, they ask two questions for a series of occupations like teacher and doctor, asking if they can meet the requirements, and can they carry out the tasks one needs to perform the work, involved in each occupation.

The questions used in this study included both a measure of business venturing in the Bandura style (2006) and a form of career self-efficacy for entrepreneurship. For this paper, we rely primarily on a scale of entrepreneurial career self efficacy that consists of two items asking how confident they are that they understand what is involved in becoming an entrepreneur, and how confident they are that they could become an entrepreneur should they decide they wanted to pursue that career course (Betz & Hackett 1997). The scale has a reliability of .891 using the pretest data and .878 using the data collected in the six month follow-on survey, alpha reliability statistics consistent with its use in prior studies (Cooper & Lucas 2006) where the scale has proven to be a useful diagnostic. The use of the Bandura scale is limited in this study to serving to provide some validation data. The Bandura task-based scale and the entrepreneurial career self-efficacy scales correlate r = .431, p < .001 at the pre-event survey, and r = .399, p < .01 six months later on the follow-up survey.

**Initial Results**

The first result (Table 1) is that female students arrive at the Enterprisers event with lower self-efficacy than men (3.18 compared to 3.66 for men, where a 3.0 represents a student ranking their skills as “adequate”). Looking at the panel data from surveys administered before and after the programme, at the end of the event women have gained more perceived self-efficacy for entrepreneurship than the men. Women have an average ranking of 4.57 compared with 4.86 for men, where 4.0 represents a self-ranking of skills as “good”, approaching a 5.0 point representing a self-ranking of “very good”). At this point the women have increased in self-efficacy to a degree that noticeably closes the gap between the sexes.

<table>
<thead>
<tr>
<th>Table 1: Change in female participants entrepreneurial self-efficacy</th>
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<tbody>
<tr>
<td>Entrepreneurial career self-efficacy</td>
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<tr>
<td>------------------------------------</td>
</tr>
<tr>
<td>All men participants</td>
</tr>
<tr>
<td>All women participants</td>
</tr>
<tr>
<td>Women participants and speaker selection</td>
</tr>
<tr>
<td>Selecting women speakers</td>
</tr>
<tr>
<td>Not selecting any women speakers</td>
</tr>
</tbody>
</table>

*Significance questionable, with p < .1; *p < .05; **p < .01; ***p < .001.
The panel data for those that completed the follow-up survey six months later show that the levels of self-efficacy drop for both male and female participants, but the average self-efficacy for the panel of women at six months has fallen more sharply. The follow-up survey panel suggests the 55 men have increased their self-efficacy from 3.53 to 4.46, while the 46 women have increased their self-efficacy from 3.21 to 3.90. At this point, Enterprisers can no longer be said to decrease the gap between male and female participants.

Looking more closely for the role of women speakers in entrepreneurship programmes, we can separate the women into those who did and those who did not report that women speakers had taught them a useful lesson. It is seen that women who chose women speakers have much lower self-efficacy (2.86, ranking their skills as between “not very good” and “adequate”) than women who chose only male speakers at the start of the programme (with an average ranking of 3.41). The self-efficacy of both sets of female participants increased substantially with those who chose female speakers gaining more from the programme as self-efficacy rose to 4.50, close to the self-efficacy (4.62) of those not selecting female speakers. Then after six months the self-efficacy of those selecting women speakers fell precipitously to 3.61, while women not selecting female speakers dropped far less and stayed much closer to the self-rankings of the male participants.

These results are far from intuitive. One might surmise that young women who are lower in self-efficacy will be more drawn to women speakers, explaining the differences found at the beginning of the events, but the reason for the decline in self-efficacy among women who are drawn to women speakers is less apparent. The answer is found in taking a broader view of role models.

The Role of Other Background Models for Women Participants
Any study of role models in education programmes must necessarily take into consideration those that precede and run concurrently with the programmes being studied. It is well established that having a father who is an entrepreneur has a consequential influence on one’s entrepreneurial intention (Blackburn & Curran 1993, Harrison & Hart 1992, Scott & Twomey 1988, Shapero & Sokol 1982), and other family members might have a similar effect. Other important sources of potential role models are the individual’s friends and colleagues who might also be running companies. We begin with a consideration of the place of family and peer role models to look for any possible role model effects at the end of the event to determine if they rather than programme speakers explained any changes that occur during the course.

The first result is the discovery that the women participants in the Enterprisers programme are highly self-selected, bringing with them a substantial understanding of entrepreneurship that comes with knowing family members and peers who run their own businesses (Table 2). Of the 78 women in the study, 53 (69%) reported that a member of their family runs a business and 33 (42%) reported that one of their friends had a business. One can see the influence of these background factors by correlating those that did and did not have these background role models with entrepreneurial self-efficacy at three points in time.

<table>
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<tr>
<th>Table 2: Background role models and selection of women speakers</th>
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</thead>
<tbody>
<tr>
<td><strong>Member of Immediate family runs own business</strong></td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Did not select a female speaker</td>
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<tr>
<td>52.0%</td>
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<tr>
<td>Total (N)</td>
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<tr>
<td>(25)</td>
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<tr>
<td>Tau B = -.135, p not sig.</td>
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</tbody>
</table>

Those that already have substantial role models appear to have much less need for women speakers. Half (52.0%) of the women participants who do not have a family role model chose women speakers as a source of useful lessons, compared with 37.7% of women participants who do have family members who are running their own companies, a difference that is interesting but not statistically significant. The evidence is that friends who run their own businesses have an even greater effect, however. If women participants have friends who have started companies, only 15.2% reported that they had learned something useful from a female speaker. Given that a comparatively small number of women spoke at the three Enterprisers programmes, this approaches what one would have expected by chance, while 62.2% of women without friends who started companies chose women
speakers. It would appear that hearing the stories of women entrepreneurs is of less importance for women who already have family or peer role models, and of considerable importance for those that do not have such role models.

**Gender-based Identification and Lessons Learned**

Using the variables created to characterise the speakers and the lessons that were learned from them, we can carry this analysis further by using entrepreneurial career self-efficacy to study the importance of the lessons learned from the speakers, and whether lessons learned have more effect if they are learned from women speakers.

The original plan was to compare women speakers, the first reported speaker regardless of gender, and the composite speaker based on using all lessons learned from whatever number of speakers was reported on by each student. The results from the composite speaker found no correlations with self-efficacy and the lessons learned, however, so here we compare the lessons from the first, most salient speaker and lessons learned from women speakers regardless of whether that speaker was reported first, second or third (Table 3).

<table>
<thead>
<tr>
<th>Lessons learned</th>
<th>Entrepreneurial Career Self-efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At programme close</td>
</tr>
<tr>
<td>Need for persistence</td>
<td></td>
</tr>
<tr>
<td>Lesson learned from female speaker</td>
<td>.081 (78)</td>
</tr>
<tr>
<td>Lesson learned from most salient speaker</td>
<td>.067 (78)</td>
</tr>
<tr>
<td>Need to accept risk</td>
<td></td>
</tr>
<tr>
<td>Lesson learned from female speaker</td>
<td>-.015 (78)</td>
</tr>
<tr>
<td>Lesson learned from most salient speaker</td>
<td>.067 (78)</td>
</tr>
<tr>
<td>Acceptability of failure</td>
<td></td>
</tr>
<tr>
<td>Lesson learned from female speaker</td>
<td>.139 (78)</td>
</tr>
<tr>
<td>Lesson learned from most salient speaker</td>
<td>.128 (78)</td>
</tr>
<tr>
<td>Assurance of individual capabilities</td>
<td></td>
</tr>
<tr>
<td>Lesson learned from female speaker</td>
<td>.099 (78)</td>
</tr>
<tr>
<td>Lesson learned from most salient speaker</td>
<td>.049 (78)</td>
</tr>
<tr>
<td>Assurance of feasibility of starting company</td>
<td></td>
</tr>
<tr>
<td>Lesson learned from female speaker</td>
<td>-.136 (78)</td>
</tr>
<tr>
<td>Lesson learned from most salient speaker</td>
<td>-.049 (78)</td>
</tr>
</tbody>
</table>

Interestingly, none of these lessons learned appear to have had any consequential impact on self-rankings on the self-efficacy scale at the end of the Enterprisers programme, and only two of the correlations found based on the six-month data would deserve comment. The first involves lessons from women speakers about the need for persistence, a correlation of -.219 is near the level of statistical significance and is negative. It flags the possibility that should be remembered in future research that the lessons taught could have negative effects. Persistence in the face of difficulty was one of the most common themes of all the speakers, and it is possible that while some find stories about successfully overcoming numerous difficulties to be inspiring, some may be prepared to learn from a speaker like themselves that starting a company is a more difficult task than what they are prepared to undertake.

The strongest relationship found in this analysis involves a lesson that was for the most part learned from male speakers. The lesson that one need not fear failure is shown to have a significant correlation with heightened self-efficacy ($r = .314$, $p < .05$). For the most part, this lesson was learned from a speaker who came to several Enterprisers events, and was available throughout several days, giving the students numerous opportunities to talk to him further. He told a personal story of starting a company and failing, starting a second company and again failing, and then succeeding with his third company. His self-deprecating manner and casual shrugging off any stigma that might be associated with failure was charming and effective, and seems to have had an enduring effect when the transitory increases in self-efficacy had fallen away.
Peers as Role Models and Continuing Social Support

The level of role models among families and friends was a surprise, and it confounds the role of women speakers in several ways, but the most important finding is the influence of friends who have started companies. One of the limits of the influence of programmes, speakers and lessons learned is that they are soon in the past. The rapid retreat of levels of self-efficacy over the six months following the Enterprisers could be attributed in large measure to the absence of social support for the changes that occurred. Absent an environment that encourages continued interest in entrepreneurship, one would predict the return of pre-programme beliefs.

Notably if one has friends who have started companies, one returns to environments where one finds that common interest and support. Peer role models play an unusual role in that they both precede and follow entrepreneurship programmes, and give us some insight into what occurs when students go back to contexts and cultures that support their heightened interest and self-efficacy. Table 4 shows these effects: Those with friends who have started companies start the programme with self-ranked ability at 3.53, compared to 2.93 for those without friends of this kind. Both those with and without friends with companies show a substantial increase in self-efficacy to 4.83 and 4.39 respectively. After returning to home and their universities for six months, those without friends starting companies have fallen back to a level of self-efficacy of 3.42, which is still a significant increase, but nonetheless lower than the starting point of those that report having friends with companies. This group of women have a self-efficacy ranking of 4.48, retaining a substantial portion of their gains and matching the six month self-efficacy levels of men in Table 1.

### Table 4: Participant entrepreneurial self-efficacy by having peer role models

<table>
<thead>
<tr>
<th>Do participants have friends who run their own businesses?</th>
<th>At event start</th>
<th>At event closing</th>
<th>N</th>
<th>At event start</th>
<th>After six months</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>3.53</td>
<td>4.83***</td>
<td>32</td>
<td>3.60</td>
<td>4.48*</td>
<td>21</td>
</tr>
<tr>
<td>No</td>
<td>2.93</td>
<td>4.39***</td>
<td>45</td>
<td>2.90</td>
<td>3.42*</td>
<td>46</td>
</tr>
</tbody>
</table>

DISCUSSION AND CONCLUSION

Any discussion of the results from these three Enterprisers events must begin with a reminder that every programme is different. One of the lessons learned by the participants was likely to result from the presence of one particularly popular speaker, and the number of women participants from families and friends that include someone running their own business is remarkably large. Other undiscovered differences are also likely to be present, so one must be very careful about generalising the results found here to similar entrepreneurship programmes.

Nonetheless, the results do suggest that speaker-participant similarity matters, and that it matters a great deal for those with lower self-confidence that they have the knowledge and skills to start a new company. Planners of future programmes would do well to schedule speakers who serve as models for the particular audience being served. Seeing someone like oneself who has tried and been successful can in this instance provide a powerful example for young women considering entrepreneurship, and more generally one would be well advised to provide exemplars for other identifiable participant groups to provide opportunities for as many participants as possible to have at least one individual with whom they might be able to identify.

While the lessons that one learns from different speakers is not found generally to be a factor, the one speaker offering the lesson that failure does not have to be feared has lasting effects. Interestingly, the removal of the stigma of failure was powerful where the lesson that one must accept risk was not. This may of course turn on the effectiveness of the speakers who delivered the messages, but one must consider the possibility that if failure can be shrugged off, then risk has no worrisome consequences and it is the former that is more important lesson to deliver. While we have no quantitative data to support this view, a number of students seemed to have developed greater strength of purpose by embracing the lesson that failure is simply a lack of success that constitutes an invaluable learning opportunity.

A last point comes from generalising from the importance of having friends who have started companies. This result is important in its own right, suggesting that women, and students in general, who come from and return to entrepreneurial environments where one’s peers have started companies will benefit far more than other participants. An equally if not more important point is found, however, in the reverse: for the most part the programme effects for students who do not return to supportive environments will soon disappear. This evidence provides some support of Boyd and Vozikis’s (1994) view that, “Entrepreneurial intentions will be the strongest, and the probability of entrepreneurial actions will be highest when there is a high degree of self-efficacy stemming from
enactive mastery, an entrepreneurial role model, social persuasion derived from social support, and a high degree of goal setting and goal commitment.” A week at Enterprisers is spent in just such an environment where the “can do” spirit is nurtured and supported; indeed, a common comment at the end of the programme from participants when asked to reflect on the most important thing which they had learned about themselves as a prospective venturer was what they now believed that they could “do it,” they had confidence in their capabilities to do what was required to start a venture.

The research literature has found the consistent result that entrepreneurial intention plays a pivotal role in predicting entrepreneurial action, and that intention is itself predicted by individuals’ desire to be an entrepreneur and their confident self-perception that they have the capability to perform the tasks necessary to become one. Entrepreneurship education in the classroom can only provide limited opportunity for students to practise the array of necessary tasks to gain self-efficacy through authentic performance, increasing the need to integrate role models effectively into course design so that social influence and vicarious experience can play their part in increasing support for heightened interest and confidence in student ability to pursue entrepreneurial careers.

REFERENCES


