

Volume 14

Printed ISSN 1098-8394

PDF ISSN 1528-2651

JOURNAL of ENTREPRENEURSHIP EDUCATION

JoAnn and Jim Carland
Carland College
Co-Editors

The *Journal of Entrepreneurship Education* is owned and published by the DreamCatchers Group, LLC, and printed by Whitney Press, Inc.

All authors must execute a publication permission agreement taking sole responsibility for the information in the manuscript. The DreamCatchers Group, LLC is not responsible for the content of any individual manuscripts. Any omissions or errors are the sole responsibility of the individual authors.

The *Journal of Entrepreneurship Education* is owned and published by the DreamCatchers Group, LLC, PO Box 1708, 51 Blake Drive, Arden, NC 28704, U.S.A., (828) 670-1588. Those interested in subscribing to the *Journal*, advertising in the *Journal*, submitting manuscripts to the *Journal*, or otherwise communicating with the *Journal*, should contact the Executive Director of the Allied Academies at info@alliedacademies.org.

Copyright 2011 by the DreamCatchers Group, LLC, Cullowhee, NC

JOURNAL OF ENTREPRENEURSHIP EDUCATION EDITORIAL BOARD MEMBERS

Joe Aniello
Francis Marion University

Stephanie Bardwell
Christopher Newport University

Tom Box
Pittsburg State University

Thomas J. Boyle
Seton Hall University

Kent Byus
Texas A&M University – Corpus Christi

James W. Cagley
University of Tulsa

Jim and JoAnn Carland
Western Carolina University

Sanjib Chowdhury
Eastern Michigan University

Larry R. Dale
Arkansas State University

Jo Ann M. Duffy
Sam Houston State University

R. Ganesan
Indian Institute of Technology Delhi

Robert D. Gulbro
Athens State University

Abdalla Hagen
Grambling State University

Michael Harris
Eastern Michigan University

Kirk Heriot
Western Kentucky University

Robert J. Hockin
TechArch, Inc.

Mark Hoelscher
Illinois State University

William T. Jackson
University of South Florida, St. Petersburg

Kenneth J. Lacho
University of New Orleans

Bill Laing
Anderson University

Jonathan Lee
University of Windsor, Ontario

Kenneth K. Mitchell
Shaw University

Deependra Moitra
Lucent Technologies

Donatus Okhomina
Alabama State University

David P. Paul, III
Monmouth University

Terry Pearson
West Texas A&M University

Steven E. Phelan
University of Nevada, Las Vegas

Keramat Poorsoltan
Frostburg State University

JOURNAL OF ENTREPRENEURSHIP EDUCATION
EDITORIAL BOARD MEMBERS

Sujata Satapathy
Indian Institute of Technology Delhi

Susan E. Saxton
Capella University

Gerald J. Segal
Florida Gulf Coast University

Linda Shonesy
Athens State University

William L. Smith
Emporia State University

Charles R. B. Stowe
Lander University

Rodney C. Vandever
Purdue University

V. P. Wani
National Institute of Technology

Paul G. Wilhelm
Cameron University

Denise Woodbury
Southern Utah University

Tom Wright,
University of Nevada, Reno

JOURNAL OF ENTREPRENEURSHIP EDUCATION

CONTENTS

EDITORIAL BOARD MEMBERS	iii
LETTER FROM THE EDITOR	vii
TRAINING WOMEN FOR SUCCESS: AN EVALUATION OF ENTREPRENEURSHIP TRAINING PROGRAMS IN VERMONT, USA	1
Ken Bauer, Oxford University	
THE SBDC IN THE CLASSROOM: PROVIDING EXPERIENTIAL LEARNING OPPORTUNITIES AT DIFFERENT ENTREPRENEURIAL STAGES	25
Tami L. Knotts, Bridgewater State College	
CONCERNS AND EXPECTATIONS OF AFRICAN AMERICAN ENTREPRENEURSHIP STUDENTS	39
Melinda D. Harris, Norfolk State University Paulette K. Edmunds, Elizabeth City State University Jim Chen, Norfolk State University	
EGG-DROP EXERCISE REVISITED: AN IN-CLASS ENTREPRENEURSHIP EXERCISE	49
Diane M. Sullivan, University of Dayton	
UNIVERSITY-WIDE TRENDS IN ENTREPRENEURSHIP EDUCATION AND THE RANKINGS: A DILEMMA	75
Deborah H. Streeter, Cornell University Romi Kher, Cornell University John P. Jaquette, Jr., Entrepreneurship at Cornell	

A COMPARISON OF ENTREPRENEURSHIP/SMALL BUSINESS AND FINANCE PROFESSORS' REACTION TO SELECTED ENTREPRENEURIAL AND SMALL BUSINESS FINANCIAL PLANNING AND MANAGEMENT ISSUES	93
Paul Dunn, University of Louisiana at Monroe Kathleen Liang, University of Vermont	
INNOVATIVE TEACHING TO ENGAGE AND CHALLENGE TWENTY-FIRST CENTURY ENTREPRENEURSHIP STUDENTS: AN INTERDISCIPLINARY APPROACH	105
Paul Lane, Grand Valley State University Jodee Hunt, Grand Valley State University John Farris, Grand Valley State University	
ENTREPRENEURIAL AND ACCOUNTING EDUCATION THROUGH ACTION-BASED LEARNING: THE GENESIS PROJECT	125
Thomas Gstraunthaler, University of Cape Town Stuart Hendry, University of Cape Town	
THE MYTH OF ENTREPRENEURSHIP EDUCATION: SEVEN ARGUMENTS AGAINST TEACHING BUSINESS CREATION AT UNIVERSITIES	147
Arndt Lautenschläger, University of Applied Sciences Jena Heiko Haase, University of Applied Sciences Jena	

LETTER FROM THE EDITOR

The *Journal of Entrepreneurship Education* is owned and published by the DreamCatchers Group, LLC. The Editorial Board and the Editors are appointed by the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The *JEE* is a principal vehicle for achieving the objectives of the organization. The *JEE* is dedicated to the study, research and dissemination of information pertinent to improvement of methodologies and effectiveness of entrepreneurship education. The editorial board considers three types of manuscripts. First is empirical research which examines the many facets of entrepreneurship and which expands the body of knowledge of entrepreneurship education. Second, case studies that have a demonstrated effectiveness and bring new perspectives to entrepreneurship education are considered. Third, manuscripts which document successful applied innovations in entrepreneurship education are solicited.

We are actively soliciting papers for the next volume of the *Journal of Entrepreneurship Education*. The process for submission of papers has been centralized through Allied Academies. All submissions are now electronic and go directly to Allied Academies. You may learn more about this process at www.alliedacademies.org. We are working to streamline our processes and we strive to have all papers reviewed and authors notified within three months of submission.

We are also seeking to grow our Editorial Review Board. If you are interested in reviewing submissions for the Journal, please submit a request by email to info@alliedacademies.org.

Thank you for your interest in The Journal of Entrepreneurship Education.

JoAnn and Jim Carland
Carland College

TRAINING WOMEN FOR SUCCESS: AN EVALUATION OF ENTREPRENEURSHIP TRAINING PROGRAMS IN VERMONT, USA

Ken Bauer, Oxford University

ABSTRACT

This paper evaluates the outcomes of two entrepreneurship training programs operating in the state of Vermont, USA. As part of an Applied Research Methods course at the university students conducted interviews (n=43) with alumna of two programs: (1) the Women's Small Business Program (WSBP), which is run by Mercy Connections, a non-profit organization based in Burlington, and (2) the Micro Business Development Program (MBDP), of the Vermont Community Action Agencies. Interviews with these entrepreneurs focused on their motivations to start their own businesses, their definitions of success, the challenges and barriers they faced, and the effects that training had. The findings presented here provide empirical evidence and augment previous research on the factors that motivate women to become entrepreneurs and suggest concrete and actionable ways that public agencies and private organizations can better address the needs and motivations of aspiring entrepreneurs.

INTRODUCTION

Before delving into the case at hand – the effects that two training programs have had on women aspiring to be entrepreneurs in Vermont – it behooves us to recognize the greater significance of micro-businesses in the American economy. According to Census Department data, ninety percent of all U.S. businesses employ fewer than five workers, the basic definition of micro-businesses (SBA, 2005). The Association for Enterprise Opportunity (AEO) defines micro-business as a business with five or fewer employees, which requires \$35,000 or less in startup capital, and does not have access to the traditional commercial banking sector. For the purpose of this study, micro-business is defined as a business with five or fewer employees, including the owner. The AEO estimates that there are over 20 million micro-businesses operating in the U.S. and that micro-business jobs represent 16.6% of all private (non-farm) employment in the United States. This percentage is higher in rural communities, where micro-businesses are the primary creators of jobs (Birch, 1987). Recent economic trends heighten the need for micro-businesses in the American economy: in particular, lower paying jobs and less secure jobs are increasingly common in America,

which pushes individuals to supplement their low-paying and often insecure jobs with self-employment (Klein et al., 2003; Edgcomb & Klein, 2005; Servon, 2006).

Women are becoming important players in the micro-business sector of the US economy and women-owned firms now account for nearly 40 percent of U.S. businesses (Langowitz 2006). The number of women entrepreneurs is increasing at an extraordinary rate, growing at four to five times the national pace of business formation between 1997 and 2002 (Loscocco & Smith-Hunter, 2004); in Vermont, there has been a 94.3 percent increase in the number of women-owned businesses since 1987 (<http://www.mercyconnections.org/>). Given the increasing importance of micro-businesses to the American economy as well as women's manifest interest in entrepreneurship, there is a growing demand for training programs that can prepare individuals to succeed.

While self-employment does not require an advanced education (Dumas, 2001), it does entail a set of technical and personal skills that lend themselves to practical training. Those who lack the resources or education to start their own business can look to micro business development programs for help. Micro-business development programs train aspiring entrepreneurs through classes, individual counseling, technical assistance, post-start-up support, loan packaging services, and referrals to outside resources (Schmidt et al., 2006). These programs assist an estimated 150,000 to 170,000 people each year (Plummer, 2006). At the national level, clients of micro enterprise training programs predominately comprise women (60 percent), low or moderate-income (60 percent), and ethnic or racial minorities (50 percent); a significant proportion of these clients come from very low-income situations, with about 30 percent below the poverty line and 11 percent receiving welfare (Plummer, 2006). Micro-enterprise programs have especially targeted welfare recipients for training as well as technical assistance and loans to help them start, formalize, or expand businesses. These programs recognize that for a portion of the welfare population, self-employment is a viable alternative to wage employment, and for some it may be the only work option available. Such programs are well suited to serve welfare recipients for several reasons – clients seek additional ways to earn income while balancing family responsibilities and work; the type of work otherwise available to clients is low-wage, offers few benefits and is characterized by high turnover; and in many locations, particularly in rural areas, even low-wage jobs are unavailable (c.f. Godwyn, 2009). Beyond the potential benefits to individuals of starting their own business, the dividends of entrepreneurship for community development can be cited as a chief rationale for starting or supporting micro-business training programs like the ones evaluated here. Studies show that these programs go beyond the benefits to individuals and can help to revitalize depressed neighborhoods and communities (Klein & Wayman, 2006). Individuals who participate in these programs are more likely to open up small businesses in their own community, which translates into opportunities for neighbors to obtain jobs. In addition to their direct and indirect economic benefits, programs like the WSBP and MBDP are in themselves vehicles for building community. For instance, the interactions that occur during training and in the classroom can spark new relationships among shop owners, better business bureaus, residents of the town, etc., building community through social and

economic networking. Especially in small-scale communities, training programs can set a powerful example by facilitating the success of individuals, who then inspire others in similar positions to take steps to change their professional or personal situation. In sum, micro-business development programs also have positive non-monetary effects on their clients such as increased satisfaction with life, community development, more neighborliness, etc.

Evaluations have shown that micro-business development programs like Women's Small Business Program and the Micro-Business Development Program are effective at improving both the economic and non-economic lives of business owners (c.f., Spalter-Roth et al., 1994; Raheim & Alter, 1998; Schreiner, 1998; Sanders, 2002; Soto, 2002; Klein et al., 2003). Such training programs are particularly important for Vermonters, where self-employment represented 22.7% of private employment in 2004, which is second highest rate in the United States (Levy-Benitez et al., 2005). Data from a statewide survey (Vermont Poll) conducted by the Center for Rural Studies at the University of Vermont corroborates these figures, with 21.3% of respondents reporting being self-employed (Schmidt, 2007). A survey of 140 Vermonters who received training in entrepreneurship found that, after training, over fifty percent of the clients reported that they had successfully started their own business and 25% were profiting from their business (Schmidt et al., 2006). Notably, since 1987 there has been a 94.3% increase in the number of women-owned businesses in Vermont (<http://www.mercyconnections.org>). In addition to the potential financial boons of entrepreneurship training, this study evaluates the non-monetary outcomes for participants along with the factors that constrained or catalyzed them in the course of moving from idea to implementation. Within this context, it is now possible to discuss the two Vermont-based micro-business training and development programs evaluated here.

Mercy Connections is a 501(c)(3) non-profit corporation that supports people in transition and helps them find the tools they need to make lasting changes in their lives (<http://www.mercyconnections.org>). The Mercy Connections Women's Small Business Program (WSBP) trains women in the skills needed to own, run, and staff a business (<http://www.wsbp.org>). WSPB started in 1989 after research had shown that women in Vermont were underemployed and unemployed, even though there were many who described themselves as nascent entrepreneurs. Women participating in the WSBP seek help at different stages of their business – some simply have an idea, but don't know where to start, while others have started an enterprise, but need help with marketing, financing, etc. WSPB aspires not only to impact individuals but more broadly seeks to expand women's economic influence, encouraging them to achieve independence (<http://www.mercyconnections.org>). Significantly, WSPB accepts woman trainees of all income levels into their program rather than admitting students based on income levels, as is the case in the Micro Business Development Program, described below. WSBP has over 600 alumnae who have participated in more than forty sessions. Despite these numbers, the WSPB lacked information on the impacts their program has had on its clients.

The Micro Business Development Program (MBDP) of the Vermont Community Action Agencies has, since 1988, assisted over 9,000 Vermonters to strengthen their economic self-sufficiency and the economic vitality of their communities (<http://www.vtmicrobusiness.org/>). The MBDP provides technical assistance and training to low to moderate income Vermonters planning so they can start or expand a small business. MBDP partner agencies have supported the launch or expansion of over 1,600 micro businesses and helped Vermonters access more than \$12 million in financing for their businesses (<http://www.vtmicrobusiness.org/>). The Vermont MBDP avails its services only to lower income clients (based on federal rules, earnings limit for a low income, single-parent family was \$12,036/year in 2005) but trains men *and* women; in the present study, only female respondents from the MBDP were included in our analysis.

While the curricula of the two programs are quite similar, we were vigilant to note the potential differences between the two programs particularly in terms of socio-economic divergences in clientele. In evaluating the impacts of entrepreneurship training among female clients interviewed for this study, it is important to consider that the motivations to engage in such programs and to start a business may be gendered as well as related to socio-economic differences; moreover, these motivations may be mixed along these axes, i.e., a well-to-do woman interested in starting a business may have more in common with her male counterparts than a economically marginalized woman who encounters challenges in terms of finding start-up capital, hiring labor, commuting to work, etc.

METHODOLOGY

The context of this research was relatively unique and, as will be demonstrated, opportune for eliciting value-added information on the experiences of women entrepreneurs who underwent entrepreneurship training. The instructor for a course in research methods at the University of Vermont was approached by Mercy Connections during a university-community networking event and was asked by a representative of the WSBP if he could help them to conduct an evaluation of their program. Knowing that the curriculum of the methods course required learning about evaluation research, a partnership was forged: the course would train students in interview techniques, instructor advice would be given on the selection of questions, and students would be partnered with alumna of the WSBP training program for in-depth interviews (Spring 2008). The following semester (Fall 2008), a similar partnership was created with the Vermont Community Action Agencies to conduct an evaluation of their Micro-Business Development Program.

The choice to engage students in real-world interviews and evaluation experience was both pedagogical and strategic. First, the premise was that students would learn more about research methods if they were dealing with real data in the form of information they had collected themselves. The department of Community Development and Applied Economics at the University of Vermont emphasizes educational experiences in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to

promote cooperative learning and get involved with work that has community benefits. Recognizing the synergy between assisting local non-profits by evaluating their programs, the research methods course was designated a ‘service-learning’ course by the university, which explicitly ties classroom learning to broader outcomes. Second, there was a strategic advantage to deploying 75 students over the course of two semesters to conduct interviews – not only could more data be collected but students were able to establish a real rapport with their interlocutors: time and again, interviewees and program administrators said that the interactions which alumna had with students were engaging, encouraging, and non-threatening.

In order to evaluate these training programs, a qualitative approach was chosen (c.f. Weiss, 1998; Patton, 2002; Neuman, 2003; Singleton & Straits, 2005). Sampling was purposive, with the respondents meeting the established criteria of having graduated from one of the two training programs. We talked to owners of different kinds of industries in an effort to elicit a variety of views with respect to the relevance of the training programs to the diversity of businesses run by Vermont women. The actual interviews were based on a convenience sample, being individuals for whom the organizations had current contact information. That being said, UVM students interviewed 27 graduates of the Women’s Small Business Program (April-May 2008) and 16 graduates of the Micro-Business Development Program (November-December 2008). Teams of two to three students carried out the semi-structured interviews, which were guided by lists of questions that were reviewed and shaped in a participatory manner during class periods. Similar questions were asked of all respondents. The questions were open-ended and subjects were asked generally to think about their businesses in terms of what motivated them to choose entrepreneurship, how the training had affected them, and the barriers they had encountered along the way. The interviews were transcribed, compiled, coded, and organized according to key categories based on: motivations to become an entrepreneur; definitions of success; challenges in starting businesses; impacts of training programs on business outcomes.

Using this data and a qualitative approach, this paper has four goals: (1) synthesize a growing body of literature on women entrepreneurs and micro-business training programs; (2) provide empirical data on key issues in entrepreneurship in the form of narrative accounts and personal quotes from women who have opened a micro-business; (3) evaluate the effectiveness of two Vermont-based entrepreneurship training programs; and (4) discuss action implications for government agencies and non-profit organizations supporting current, or planning future, funding for such programs, particularly with the goal of fostering community development, innovation, and economic growth.

MOTIVATIONS FOR STARTING A BUSINESS

Previous research places motivations for self-employment into two general categories: “push” and “pull” factors (Scott, 1986; Cannon & Carter, 1992; Davies-Netzley, 2000). “Push”

factors include those that discourage individuals from working in the traditional economy because they feel blocked in terms of career advancement or their options for achieving personal aspirations. Insufficient family income, dissatisfaction with current occupation or salary, boredom, and difficulty in finding other work are common “push” factors that impel self-employment (Buttner & Moore, 1997; Orhan & Scott, 2001). Often mentioned as a push factor for women to engage in entrepreneurship is the “glass ceiling.” A euphemism for sexism, the glass ceiling effect makes women feel that their position in a organization’s hierarchy does not reflect their potential. More than 40% of the women surveyed by Gundry et al. (2002) mentioned the glass ceiling as an important factor in their decision to leave their former place of employment. Similarly, according to a survey of aspiring women business leaders, 59% of respondents in their 20s and 30s said being a woman will hurt their chances of reaching the highest ranks in business (Ryckman, 2005). Women who start businesses may be pushed into leaving their current employment because of dissatisfaction with pay inequities and gender discrimination. Nguyen’s (2005) study reported 44% of the women business owners had felt devalued and that their contributions were not being recognized at their previous jobs. In fact, in a survey of over 600 women, Mattis (2004) found that 58% of the women who had left the traditional sector reported that *nothing* could attract them back to male dominated corporations. Importantly, Langowitz’s (2006) study clarifies that women are not abandoning their careers to transfer out of male-dominated fields; in fact, the top three fields for female business owners are in professional services, technology, and construction, all industries in which men dominate.

“Pull” factors are those that attract individuals to self-employment, including flexible working hours, the desire for greater autonomy, and the opportunity for personal challenge (Chen & Heilman, 2003; Walker and Webster, 2007). In general, pull factors relate to independence, self-fulfillment, social status, and power (Orhan and Scott, 2001). The self-employed often share a desire for autonomy and independence, and may articulate this as a commitment to individualism rather than collectivity, e.g., an antipathy to large businesses. Another “pull” factor examined in the literature as a motivation for self-employment is, not surprisingly, profitability. Scott (1986) conducted a survey of women entrepreneurs in Georgia to examine why women were drawn to business ownership. Out of 154 respondents, 54 said that they were motivated by the opportunity to make more money. Herington and Scott (2006) found that women perceive small business ownership as a vehicle for rapid growth and wealth creation. In a study conducted by Buttner and Moore (1997), 129 women self-reported their rationale for leaving the traditional workforce to become entrepreneurs. The study’s findings suggest that “pull” factors – specifically, the promise of greater financial benefits and the opportunity to be one’s own boss – were the most important. On the other hand, Orhan and Scott (2001) reject the hypothesis that a majority of women become entrepreneurs by necessity, and instead identify an individual’s background as integral to the factors that motivated them to make this decision. The desire for new challenges with greater freedom and the desire for a better balance between work and family have also been cited by women as critical

pull factors (Ndemo & Miana, 2007). In addition to financial incentives, then, many women become entrepreneurs in search of independence, control over their work, and the desire not want to be devalued by men in larger corporations (c.f. Bauer, 2007; Lee, 2007). Women hope to find greater flexibility, more job satisfaction, and a measure of control over their personal destiny if they start their own business.

Langowitz and Minniti (2007) investigated which variables influence the entrepreneurial propensity of women and whether those variables differ significantly across gender. Using survey data collected in 2001 by the Global Entrepreneurship Monitor Project, their findings show that the following are all significant factors in women's inclinations to start new businesses: age, income, employment status, and education (demographic variables); knowing other entrepreneurs (social networks); opportunity perceptions, risk tolerance, and self-confidence (worldview/psychographic variables). These results highlight the fact that a network and the ability to recognize market opportunities as well as clear understanding of one's risk tolerance and an abiding self confidence are critical factors in successful entrepreneurship. Critically, these are some of the very skills in which training programs like WSBP and MBDP can assist fledgling entrepreneurs to gain traction. Rarely are these motivating factors isolated and, as we learned in the course of interviews with Vermont entrepreneurs, the factors are often combined. A central factor that motivated Vermont respondents to start their own business was financial gain. Many of the respondents figured that, if they received training on how to successfully run their own business, they could leverage a unique set of skills, which would allow them to receive more in return for their services. In particular, interviewees highlighted the importance of being able to name their own price as a major reason to start their own business.

Beyond financial gain, interviews with alumna of the WSBP and MBDP training programs revealed a variety of motivations to become an entrepreneur. Among the most prominent of the non-financial motivating factors were a desire for self-confidence, a personal interest and passion in a chosen field, family support, and previous work experiences. Our interlocutors repeatedly told us that a key motivating factor to open a business was a desire to have a job that was both intellectually stimulating and that accommodated other areas of their lives. While a sense of financial independence is a significant factor in a woman's decision to be self-employed, most studies show that changes in her lifestyle are her greatest gain (Sato, 2006). Self-employment instills a sense of self-worth, self-control, and self-sufficiency that is difficult to attain when employed by someone else (DiMeglio, 2006; Klein, 2006). Individuals choose to be entrepreneurs because it allows for social mobility, integration, and legitimacy for the business owner. In this vein, one respondent reported that her business had elevated her sense of wellbeing and self-esteem because, "finishing something feels good." Interviewees also noted that the programs' repetition of the mantra – "You cannot fail" – along with the support of classmates boosted their self-confidence. In considering which factors lead students to later success in opening businesses, it behooves administrators and instructors of these programs to consider ways that the camaraderie and shared sense of

empowerment that are part and parcel of the training experience can be fostered in the classroom and beyond.

Striking a balance between work and life is one of the most difficult challenges facing families in the twenty-first century: a majority of Americans now require two full incomes to meet the rising costs of living (Bilimoria & Piderit, 2007). A major challenge to women's entrepreneurial success is the fact of established societal gender roles, which still hold that women should care for families while men should focus on their careers (Lombard, 2001). Many women in self-run small businesses are the sole caregivers to their children, with further responsibilities for domestic work at home (cooking, cleaning, etc). As such, there is a "double shift burden" such that women are still expected to do household chores even if they also choose to open a business or pursue a career (Ndemo and Miana, 2007). One of the most difficult tasks for women entrepreneurs is mediating their roles as businesswoman, mother, and wife. Indeed, a prominent consideration in women's choices for self-employment is being able to make their own schedule to work around raising a family (Mattis 2004). A common reason, then, for women start their own business is to find time to raise a family while still earning money. Dumas (2001) notes that self-employment can increase household income, while still allowing the flexibility that is needed to care for children or accommodate other family needs. Self-employment or business ownership can provide more flexibility to accommodate both work and home responsibilities. For instance, one of our interviewees had worked as a school counselor for years only to realize that she spent more time with other kids than her own. This realization motivated her to open an educational consulting business that allowed her to set her schedule up so that she could spend more time with her children. Research suggests that the reasons why women enter self-employment may differ from those of their male counterparts. Women appear to base their entrepreneurial decisions, at least in part, on lifestyle and family factors, while men make choices based on earnings potential. Research indicates that women more often become entrepreneurs in order to balance work and family, while more men become entrepreneurs for the purposes of wealth creation and economic advancement (DeMartino & Barbato, 2003, National Women's Business Council, 2006; Hopkins, 2006). In Hopkins' (2003) study, 65% of women and 29% of men state that a top reason for starting their own company is to create "family-friendly" benefits. Marcel (2001) asserts that women-owned firms allow mothers to "call-the-shots" and also to spend adequate time at home with family. Owning a business means you can adapt rules to fit you own needs, for instance, by bringing a baby, if necessary, to the office.

The type of household to which a woman belongs also plays an important role in her employment choices. Budig (2006) examined the relationship between family responsibility and self-employment and observed that women with more family responsibilities (i.e., more children) were more likely to be self-employed. Additionally, women who did not have a salaried position were found to be even more likely to enter into self-employment after having children, as the economic opportunity cost for them was lower. Donald Bruce's (1999) research suggests that married women are twice as likely to become self-employed; likewise, having a husband with prior

self-employment experience has an important yet quantitatively smaller effect on a woman's decision to choose self-employment.

As we have seen, employment and family are intertwined in women's decision to work for themselves. Indeed, the convenience and flexibility afforded by starting one's own business was a prominent motivating factor to become an entrepreneur among the Vermonters interviewed. As one respondent noted, "When you are your own boss, you can also make your own hours, which makes it easier to spend more time with your children." Entrepreneurship provides for a flexible schedule, a rarity in jobs in which you are not your own boss. By creating their own businesses, women can make their own hours. In our interviews, business owners with children consistently noted that, as their own boss, they were able to plan their own schedules, which enabled them to spend more time with their children and to reduce childcare costs. Connelly (1992) noted a positive correlation between having young children and being a self-employed. Being able to schedule their own hours, having the freedom to choose jobs, taking vacation time when they wanted, and being self-reliant were all cited by our interlocutors as important factors that motivated them to start their own business. In addition to the need for flexibility while earning money, the desire for independence drives many individuals' decisions to start a business. Particularly in the context of balancing family demands, the women entrepreneurs we interviewed place a high value on having control over their business without having a boss constantly looking over the work they performed.

As one would expect, given the initiative and drive that are needed to conceive of, and follow through on, an idea for a business, many of the entrepreneurs we interviewed mentioned their abiding personal interest and passion in a field as a motivating factor. For example, an avid piano player decided to start giving lessons while another woman's interest in photography inspired her to start wedding photography business. One woman related that she had always had a love for vintage pieces and unique second hand items. It was this fervor that encouraged her to open a boutique store, a dream that was only realized subsequent to completing entrepreneurship training. Other respondents noted that creativity permeates in their personal lives and they wanted to use their businesses to express themselves and to help them find meaning. A former math teacher who had started a tutoring service said that, in addition to wanting to be self employed, she was motivated to start her own business so she that she could interact more broadly with members of her community particularly those having different economic and educational backgrounds. In particular, she was motivated by a desire to show students that math is not scary and that there are a variety of techniques students could learn to succeed. Another entrepreneur leveraged her passion for cooking by opening an ethnic food market. Not only did she think it would find a commercial niche, offering Vermonters a cultural food that no other store carried, but she was also motivated by an intense desire to learn better English. Indeed, her business gave her opportunities to converse with local community members and to make more friends. It was clear from our interviews that the women who participated in entrepreneurship education had an intense passion for their chosen field of

enterprise yet they were frequently stymied by a lack of outlets: the desire was there but the tools were not. Spurred by their lack of business knowledge, they enrolled in training programs.

Other more prosaic factors may also lead individuals to pursue entrepreneurship. One interviewee reported that, after having a successful chemotherapy treatments as an alternative to brain surgery, she decided that she wanted to help people by performing treatments for them and she started her own micro-business. Another interviewee explained that she had started her business subsequent to a serious accident, the result of which was that she was unable to work long hours for multiple days in a row. She had thought about starting her own business before, but the accident propelled her into taking on such a venture; starting her own business allowed this entrepreneur to structure work around her physical limitations. One interviewee related that her daughter was learning disabled. She had identified a Vermont summer program for her child but could not afford a commitment of three full weeks in terms of time and finances. This prompted her to model her own program that runs for just one week at a time. She used her experience and passion to help others, who were in the same predicament she had been, to access a literacy camp to help their children. Still another respondent told us that she had battled long-term depression and a disability that had kept her from prospering. In this state, she knew that she needed a hobby to keep her busy and to express her love of nature. She drew upon her artistic ability not only to help her get over depression, but also to start designing and selling her own hats.

Family was a recurring – and, arguably, an under-acknowledged – factor in entrepreneurs' decision to take the proverbial plunge. Many of the entrepreneurs with whom we engaged said they had been inspired by family members to start their own businesses. Bruce (1999) notes that the probability for a married woman to enter self-employment is greater when her husband has self-employment experience. A number of the women who were interviewed explained that they would not be where they are today without the support of their families. Not only did their family members encourage them throughout the training, they remained supportive of the business and often provided a helping hand – working in the family store, for example – at critical points. One subject credited every part of her successful journey in business to her family: it was her husband who pushed her to enter the program, and later her sons who became her employees. In addition to emotional support, family members can be instrumental in providing the financial resources needed to launch a business. A team of three entrepreneurs who were interviewed related that they had been college students with little money in their pockets when they started their business. But with the financial support of the grandparents of one of the three, they were able to launch the business and to make their first transactions. Their business had also benefited from a well-developed business plan, which had been written by the aunt of one members of team – quite an advantage considering that this relative was a professional grant writer.

A family history of business ownership was another common motivating factor reported by interviewees. Individuals whose parents and grandparents were successful entrepreneurs observed that they had gained invaluable insight into running a business as they were intimately aware of the

costs and benefits inherent to starting their own ventures. Among several of our interlocutors, it was found that entry into self-employment was a matter of directly inheriting a parental business. For example, two interviewees noted proudly that they could trace three generations of business ownership in their families. Many of the entrepreneurs interviewed also credited their parents for teaching them valuable skills from a young age. In short, a family history of entrepreneurship provides familiarity with operating a business and affords new business owners a built-in support system. In addition to family members who supported their entrepreneurial ambitions, our interviewees also credited friends and acquaintances for inspiring them to start their own businesses. One woman credited a past employee with igniting her deep interest in clothing, while another mentioned a former boss as a role model for her entrepreneurial undertakings.

Family background and geographic context may be particularly relevant to women's employment strategies in the case of a rural state like Vermont. Statistical analysis of interviews with more than 25,000 adults by the Global Entrepreneurship Monitor showed that women living in rural communities were almost twice as likely to start up their own business as those living in urban areas (Moules, 2006). Similarly, Bird and Sapp (2004) conducted a study in Iowa that evaluated how location (rural or urban) affected the outcomes of small business initiatives. According to their findings, the percentage of women-owned businesses was higher in rural areas than urban areas – a function, they argue, of the fact that rural areas experience less business competition, making it easier for a micro-enterprises to survive. These findings are relevant to Vermont because of its predominantly rural nature. In a state like Vermont, which prides itself on its agricultural identity, self-employment for women may often be the result of inheriting the family farm, which is passed from generation to generation. National trends in farm ownership seem to corroborate these trends towards increased involvement of women in agricultural enterprises. One of the most significant changes observed in the United States Department of Agriculture's 2007 Census is the increase in female farm operators, both in terms of the absolute number and the percentage of all principal operators. National trends were reflected in Vermont, too, where 1,432 female principal operators were counted in 2007, up from 1,226 in 2002 – an increase of almost 15 percent (NASS, 2009).

Previous work experiences are also influential in the decision-making process leading to starting a business (Schmidt & Kolodinsky, 2007). Although many of the women we interviewed needed training to start their own a business, by no means did they necessarily lack business experience. Many entrepreneurs observed that they had learned to distinguish what characteristics they would seek in future employment. By experiencing a series of jobs in the work world, another interviewee was able to distinguish which characteristics she sought in her future job. "Working at the country club made me realize that I didn't want to have a job where I was always outdoors, and while I was working with my father at his car dealership, I realized that his stressful way of life wasn't appealing to me." One of our interlocutors had ten years of experience managing a store. The actual owner of the store lived out of state. So when he decided to sell, she knew that she wanted

to buy the store. She was prepared, but needed help to learn the ins and outs of being the owner, rather than a manager of a business. A respondent realized that there was an untapped market for Pakistani food in Vermont having spent several years working in the food service industry. Yet another interviewee had graduated from the Culinary Institute of America after working in several different bakeries. Through her previous work experiences, she explained that she had plenty of knowledge about baking, but lacked business acumen.

While helpful, previous experience is not a pre-requisite to making a start in business, and our interviews suggest that strong interest and personal belief are also integral. Ibrahim and Goodwin (1986) identified characteristics of successful micro-enterprises through case studies of firms in Montreal, Vermont, and New York. Their study suggests that personality attributes, specifically ‘entrepreneurial behavior’ and competence in management skills were key factors in the success of small businesses (Ibrahim and Goodwin, 1986). What is interesting is that both these key factors are amenable to training programs like the ones evaluated here.

DEFINITIONS OF BUSINESS SUCCESS

When assessing the performance of businesses, the majority of indicators are based on financial gains, losses, or turnover. But not all businesses succeed, obviously. Even if micro-business owners make a profit, they still may feel that finances are tough, particularly with respect to achieving stability in income. Practically all of the entrepreneurs interviewed claimed that they struggled with finances, especially in the beginning. Although a company may seem to be thriving, finances may still be tight. One subject related that a few months prior to her interview, she was exhausted and her relationships were being negatively affected by her business, which brought her to the verge of giving up. In other words, financial stability can greatly affect the business owner’s perspective and determination to continue an operation into the future. Financial instability can place great burdens upon any entrepreneur. Indeed, self-employed people are more than twice as likely as employees to have reported earning below the thresholds at which income tax and national insurance contributions are payable (Varma 2001). One woman interviewed said that, although she loves her business, too much of her time is spent worrying about financial burdens and struggling to generate funds to relieve the stress that her business creates. She went on to discuss the fact that it is very difficult for a small retail business to survive, and financially it may not be realistic for her to continue with her plans for the business. Although she adores being surrounded by the products in her shop, she disclosed that she might simply fall back on her college degree. Amidst the current financial crisis and decelerating consumer demand, owning and operating a small business has its additional stresses in terms of liquidity, access to credit, reliability of supply chains, employment decisions, and so on. In this context, it is understandable why people still choose salaried employment over self-employment: the security of a regular and predictable income as well as benefits. This is one area where training programs can be especially useful: they can provide for

aspiring entrepreneurs a reality check on the likelihood of financial success and the likelihood of exposure to risk.

While entrepreneurship training programs like the ones evaluated here strive to facilitate the success of their graduates, profits are often elusive and other economically oriented indicators such as business longevity, time to profitability, etc. may prove hard to track. And yet the funders of government agencies and non-profits administering these training programs frequently measure their effectiveness (and consequently decisions on future funding) on the basis of these selfsame indicators. Nevertheless, given the intensely individual nature of micro-businesses, the measures of success should, arguably, be equally oriented around non-monetary factors (Chell & Baines, 1998). Recognizing this reality, micro-business training programs have sometimes struggled to define success in terms of outcomes beyond the narrow confines of profitability or business longevity. Non-financial measurements of success are outside the conventional economic paradigms, but may be more relevant to the personal objectives and goals of the micro-business owner. Some of these non-monetary measures that can be used to define success include self-fulfillment, flexible lifestyles, or the achievement of personal goals (Buttner and Moore, 1997; Walker and Brown, 2004). These measurements are not substitutes for, but are instead complimentary to, financial goals. Interviews from a cross section of Vermont businesses suggest that a range of measurements is used by owner/managers, with non-financial factors playing an important role. These conversations provide insight into entrepreneurs' own notions of success and thereby may help training programs redefine, or at least expand their notions (and those of their funders), of positive outcomes.

A qualitative study of ninety-five women entrepreneurs conducted by Fenwick and Hutton (2000) concluded that, in addition to financial success, women seek a meaningful vocation in opening their own businesses. As such, they judge their success equally on non-economic factors such as their ability to choose their daily activities, the relationships they establish, contributions to their communities, and overall perceived quality of life. Keeping busy and having a sense of pride in their business were also prominently mentioned by our interviewees as important aspects of both professional satisfaction and personal happiness. As much as profit incentives drive them, women's views of business success are also shaped by a desire to improve the quality and overall satisfaction with their life even if that means generating less of a profit. For instance, Wilson's (2007) study showed that women believe being self-sufficient is much more important than men find it to be. Eddleston and Powell (2008) found that women are more content with smaller and less profitable businesses than are men and that men measure business success more in terms of financial growth and revenue than women. Nearly all of our interviewees asserted that money was not the only way to measure success. When asked what she believed to be the most important element of success, one respondent said, "taking pride in the product that I produce. It is also important for me to be happy and laugh a lot." Another interviewee who runs a pet-related business said, "it's not about the money...I have helped so many people and animals, and that's enough for me."

Another element of success mentioned by our interviewees was customer satisfaction and creating long-term customer relationships (c.f. Komppula & Reijonen 2007). Several entrepreneurs said that they thought about success in terms of happy clients, good customer service, and enjoying what they do. For example, one of our interviewees measured success in many forms, beginning with happy customers. “The most satisfying part of my business is when a customer expresses appreciation for our work and products, and tells me that they will recommend the store to friends.” This entrepreneur also considered herself successful because her employees thought they were successful. Her main concerns, in other words, were customer and employee satisfaction, as well as living a balanced lifestyle. In other interviews, micro-business owners reported that they define success as the ability to work with people, the opportunity to get to personally know their customers, and the chance to give back to their community. In this vein, several of the entrepreneurs interviewed asserted that, even though the revenues generated by their business were modest, they still were happy because of the positive changes they were able to effect in people’s lives as a result of their business. Many respondents were elated simply with the fact that they were running their own business and derived satisfaction from knowing that they had worked hard for a goal and actually made it happen.

OBSTACLES AND RISKS TO ENTREPRENEURSHIP

In training women for success in entrepreneurship, it is imperative to recognize and, hopefully, anticipate the obstacles and risks they may face as they open their own business. Despite many recent advances, gender discrimination persists in the working world and is an obstacle that prevents women from succeeding in the realm of micro-business, too. Lee and Denslow’s (2005) study identifies the following as major obstacles for women who own small businesses: obtaining credit, lack of collateral, lack of capital, establishing credibility, delegating authority, lack of business experience, lack of respect, and labor issues. Even though women entrepreneurs in the United States are the fastest growing segment in the small business community (Davis, 2000), in comparison with men, women-run businesses have more limited access to capital (Johnson, 2006). According to Yang et al (2005), the most significant problem that women entrepreneurs face when they start enterprises is funding bias, particularly with respect to credibility and capability. A major barrier for women business owners has been access to government contracts (Butterfield 2005). In 2000, only two percent of government contracts were granted to women, which prompted the formation of advocacy groups like Women Impacting Public Policy and the American Small Business Coalition to fight for equal access for women business owners. Many women seem to be reluctant to use equity financing to start or operate their business. Instead, when opening a business, personal savings, credit cards, and borrowing from family/friends are often used as alternatives (Conrad, 2007).

In fact, several of our respondents reported that they had to use all of their own money to get their businesses off the ground and many of them took significant financial losses. Even so, Dorothy Moore (1997) argues that financial discrimination is not the only obstacle women face when attempting to create a small business. Bird and Sapp (2004) attribute gender gaps in small business success to owners' human capital, social networks, and personal commitment, among other characteristics. In these authors' view, men have more established networks of supporters based on generations of participating in, and being owners of, businesses; relatively speaking, women are newer to micro-businesses ownership (Davis, 2000). As such, we may expect that men have more startup experience as well as more friends and neighbors with businesses. Writing about micro enterprise programs in rural areas, Wallace (2005) cites a lack of networking as a major barrier to the success of businesses: because of the geographic characteristics and low population density of rural areas, it can be difficult to build necessary human and social capital.

Beyond capital requirements and access to networks, another major obstacle faced by women is the time commitment entailed in order to become a successful entrepreneur. A number of respondents noted that they did not realize how intensive a time commitment it would be to start one's own business; in many cases, the women we interviewed described the experience as "overwhelming" and "completely absorbing of all my time." A full-time, self-employed person may spend eighty hours a week to earn what she once made in forty. Which adds importance to finding joy in the work performed since so little time is left for leisure activities. Not surprisingly, then, the self-employed may not cite money as their primary incentive, but instead describe the activity or product as their biggest source of motivation. One woman observed that the startup alone required immense effort and time of her. While enduring weeks of working 10-plus hours, seven days a week, she began to feel completely consumed by her project, which eventually drained her. Although she had the drive and commitment to start a business, she was unprepared for the amount of physical and emotional work that the whole process would entail of her. In preparing trainees for this reality, several of the respondents felt that the programs had not adequately highlighted the fact that starting one's own business is often more of a time investment than a monetary one. Some respondents underscored this as their greatest challenge and alluded to its enervating effects.

Although stress may be a given in any business, the training programs evaluated here seem not to have prepared students for some situations. Late nights and an unhealthy diet, coupled with limited financial resources, were all mentioned as symptoms of the stress that women felt threatened the viability of their endeavors. One individual explained that she needed to completely regroup and assess her situation before continuing with her business. During this re-evaluation, she realized that some elements of her strategy had to be revised before she could return to her business with less stress. Providing trainees with tools to cope with stress may be a valuable and, ultimately, critically needed part of the repertoire aspiring entrepreneurs need to develop through training programs like the WSBP and MBDP.

Many of our interviewees also mentioned the need to overcome significant barriers in terms of learning the technologies required to run their businesses. Website development and management is typically a central part of owning one's own business, particularly in terms of reaching larger markets. Older individuals, especially, described themselves as being not computer savvy and not adept at navigating the Internet with ease. Yet, neither of the Vermont programs featured significant technological training. In addition, many of the participants felt as though their programs could have involved more technological training, but most of these women did not have access to home computers with the programs they were using. Given the expansive set of possibilities in terms of entrepreneurship curricula, it may be unrealistic to assume that basic business development courses can also teach website development, Internet marketing, etc. As such, it behooves government agencies and non-profits administering programs like these to offer parallel training in specialized business skills such as computing.

IMPACTS OF TRAINING

Most of the interviewees were extremely positive about the entrepreneurship trainings in which they participated. Respondents emphasized that key to the programs was that they were hands-on and helped trainees appraise what entrepreneurship would entail for their lives. According to the directors of both the WSBP and the MDBP programs, trainers are instructed to encourage their students but also to realistically advise them not to jump in blindly nor let their businesses become too big too fast. Consistently, respondents identified learning how to build a business plan as one of the most significant aspects of their training even if though they were at different stages. Through the course of training, several respondents noted that they were able to better structure their ideas and to narrow their focus on one business idea. For example, one woman noted that even though she had decided not to expand her company as outlined in her business plan, the process itself had refined and clarified her goals. Another respondent related that, by completing the WSBP program, she realized that she couldn't make a living from selling the greeting cards she had designed; still, she left the training satisfied, knowing that she could become an entrepreneur if she found an alternative (and more profitable) route to pursue.

Throughout the interviews, it was clear that the marketing and advertising skills gained through the training programs benefited many of the entrepreneurs. "You gotta' jump in to swim," said one woman, when asked how she began with her first marketing campaign. One of the most difficult parts of starting a business is to discover a market niche that has yet to be (fully) exploited. Staying patient throughout this process of market discovery was mentioned by the entrepreneurship trainees as one the major struggles they faced. One interviewee noted that, in her impatience, it was difficult to keep in mind that she had started his business not for monetary gain, but mostly to have fun and pursue one of her passions. The owner of a tutoring business said that entrepreneurship training she received helped her come up with marketing ideas and ways to get the word out about

the services she offered. Interestingly, several interviewees mentioned the fact that the training program itself became an effective vehicle for word-of-mouth marketing. Several women interviewed mentioned that they would have benefited from specific lessons on building a customer base and reinforcing customer loyalty. Beyond the challenge of simply running a business, respondents noted that it was difficult to spend time marketing their products to the public.

Many of our interlocutors attested to the fact that they emerged from the training programs with greater confidence in the financing, accounting, and operational aspects of their business. One subject noted that these skills are elementary business knowledge, but without the training, she would have “gone belly up at least three times.” In learning how to properly manage money, several interviewees noted that they appreciated learning the finer elements of software programs to organize their finances and, as a result, they had been able to save money. One would-be entrepreneur had planned to hire a bookkeeper, but with the financial training she received, she was able to take charge of her own accounting. The skills that one interviewee gained by completing the training program were critical in establishing contacts with community leaders who helped her procure a loan; this loan, in turn, allowed her to pursue jobs for which she wouldn’t have been able to compete in the past. Another respondent concurred, saying that the financial training gave her increased confidence in preparing for loan meetings, knowing that she had already submitted her plan to heavy critique during her time with the program. She also stated that she able to better manage her finances having completed a business plan that could be constantly updated and changed.

One interviewee observed that the WSBP program had greatly increased her confidence, which was critical for getting her ‘feet off the ground’ and developing a feasible course of action. As a result of starting her own business, one interviewee said that she continues to educate herself in new techniques every day. In addition to learning how to organize and maintain their finances, a key positive aspect of entrepreneurship training that was cited by interviewees was the network of contacts they accrued through these programs. Not only were aspiring entrepreneurs able to connect with others in their position, these would-be business owners were able to create networks with other local micro-business owners – very often past alumni of the training programs – who shared their experiences, resources, and knowledge.

The most common negative responses towards the programs were that the bulk of experience-based teaching was directed towards those who only had an idea for a business even though many of the women participants had already opened their business and were looking to refine their skills. Another gap in the training programs evaluated here was inadequate preparation for dealing with labor issues. Several respondents stated that the longevity of their business had been strongly affected by the quality of the employees they had hired. Critically, neither of the training programs included significant elements employee management in their curricula. Another problem frequently mentioned was that the training programs tended to be directed towards specific types of businesses, excluding some of the women participants; one respondent noted that she was

disappointed that the program catered more to women that were looking to open retail oriented businesses.

DISCUSSION AND RECOMMENDATIONS

Collectively, the women who participated in this study found that they walked away from the WSBP and MDBP with four major assets: a solid business plan, financial training, some education in marketing education, and a higher confidence level. Overall, a majority of participants felt that the training programs in which they participated were a key factor in their later business success. Respondents credited the programs with providing them with the assessment skills they needed to accurately decide whether they were ready to start their own business and whether there was a need in the community for their business. Many of the women interviewed mentioned that it would be very beneficial for the programs to conduct follow up training with graduates.

Micro-enterprise oriented welfare-to-work initiatives like Vermont's Micro Business Development Program (MBDP) may attract TANF recipients with higher levels of education and experience than the general caseload (Blair and Klein 2001). This suggests that the most inexperienced individuals may be those least likely to seek out services and perhaps less likely to succeed in starting a business. Thus, micro-enterprise programs such as MBDP that seek to serve these populations will need to find ways to recruit and retain individuals with less experience and education as well as address their different needs in terms of business knowledge, access to capital, perceptions of risk and opportunity, etc. Price and time are often factors when making the decision to enter into an entrepreneurship training program. Starting a business by oneself is, in itself, financially risky, so potential students may have to turn down the opportunity to join a training program like the ones evaluated due to tuition costs. As such, financial support or aid may be critical in attracting and retaining would-be entrepreneurs, and increased financial aid could encourage more women to their options in entrepreneurship.

ACKNOWLEDGMENTS

The author would like to acknowledge and thank the following individuals who contributed to the collection and compilation of data for this paper: Michele Schmidt, Rachel Brett, Hilary Koerner, Courtney Bridges, and students enrolled in the Applied Research Methods course (CDAE 250, Department of Community Development & Applied Economics) during the spring and fall semesters of 2008. Financial and administrative support from the Office for Community-University Partnerships in Service-Learning (CUPS) and the Women's Center at the University of Vermont were instrumental to this research.

REFERENCES

- Bauer, J. (2007). Few area businesses owned by women. *Grand Rapid Press (Michigan)* December 26.
- Bilimoria, D. & S. Piderit (2007). *Handbook on women in business and management*. Northampton, MA: Edward Elgar
- Birch, D. (1987). *Job creation in America: How our smallest companies put the most people to work*. NY: Free Press.
- Bird, S. & S. Sapp (2004). Understanding the gender gap in small business success: Urban and rural comparisons. *Gender & Society*, (18), 5-28.
- Blair, A. & J. Klein (2001). *Microenterprise as a welfare to work strategy: Client Characteristics*. Washington, DC: The Aspen Institute.
- Bruce, D. (1999). Do husbands matter? Married women entering self-employment. *Small Business Economics*, 13(4), 317-329.
- Budig, M. (2006). Gender, self-employment and earnings: The interlocking structures of family and professional status. *Gender & Society*, 20(6), 725-53.
- Buttner, H. & D. Moore (1997). Women's organizational exodus to entrepreneurship: self-reported motivations and correlates with success. *Journal of Small Business Management*, 35(1), 34-46.
- Butterfield, E. (2005). Business groups team to boost opportunities for women entrepreneurs. *Washington Technology*. December 30. . Retrieved from http://www.washingtontechnology.com/online/1_1/27667-1.html.
- Cannon, T. & S. Carter (1992). *Women as entrepreneurs: A study of female business owners, their motivations, experiences, and strategies for success*. San Diego, CA: Academic Press Limited.
- Chen, J. & M. Heilman (2003). Entrepreneurship as a solution: the allure of self-employment for women and minorities. *Human Resource Management Review*, 13(2), 347-364.
- Chell, E. & S. Baines (1998). Does gender affect business performance? A study of microbusinesses in business services in the UK. *Entrepreneurship & Regional Development* (10), 117-35.
- Conrad, L. (2007). What do women (owners) really want - and need? *US Banker*, 117(1), 38.
- Cranwell, M. & J. Kolodinsky (2002). The impact of microenterprise development on low-income Vermonters: Building social and human capital to work towards economic and self-sufficiency. *Consumer Interests Annual*, (48), 1-7. Retrieved from <http://www.consumerinterests.org/files/public/Microenterprise-02.pdf>.
- Cranwell, M. & J. Kolodinsky (2003). *Micro business development program of Vermont: Client outcome report*. Burlington, VT: The University of Vermont, Center for Rural Studies.
- Davies-Netzkey, S. (2000). *Gendered capital: entrepreneurial women in American society*. New York: Garland Publishing, Inc.

- Davis, S. (2000). Women entrepreneurs: What do they need? *Business and Economic Review*, 45(4), 25-27.
- DeMartino, R. & R. Barbato (2003). An analysis of the motivational factors of intending entrepreneurs. *Journal of Small Business Strategy*, (13), 26-36.
- DiMeglio, F. (2006). Women leading the way in startups. *Business Week Online*, March 9.
- Dumas, C. (2001). Evaluating the outcomes of microenterprise training for low-income women: A case study. *Journal of Developmental Entrepreneurship*, 6(2), 97-128.
- Eddleston, K. & G. Powell (2008). The role of gender identity in explaining sex differences in business owners' career satisfier preferences. *Journal of Business Venturing*, 23(2), 244-56.
- Edgcomb, E. & J. Klein (2005). *Opening opportunities, building ownership: Fulfilling the promise of microenterprise in the United States*. Washington, D.C.: The Aspen Institute. Retrieved from <http://www.fieldus.org/Publications/FulfillingthePromise.pdf>.
- Fenwick, T. & S. Hutton (2000). Women crafting new work: The learning of women entrepreneurs. *Proceedings of the International Conference of the Canadian Association for the Study of Women in Education*. University of Alberta, Edmonton Alberta, May, 2000. Retrieved from <http://www.edst.educ.ubc.ca/aerc/2000/fenwick&huttons1-final.PDF>.
- Gelinas, S., L. Reeves & J. Sullivan (2006). Sustainable social policy? An examination of policy affecting working women and their families. *Atlantic Conference of Public Administration* Halifax, Nova Scotia, February 1-2, 2006.
- Godwyn, M. (2009). 'This place makes me proud to be a woman': Theoretical explanations for success in entrepreneurship education for low-income women. *Research in Social Stratification and Mobility*, 27(1), 50-64.
- Gundry, L., M. Ben-Yoseph & M. Posig (2002). The status of women's entrepreneurship: Pathways to future entrepreneurship development and education. *New England Journal of Entrepreneurship*, April 1, 2002, 39-50.
- Gurley-Calvez, T., K. Harper & A. Biehl (2008). *Self-employed women and time use*. U.S. Small Business Administration. SBAHQ-07-M-0409. February 2009, No. 341. Retrieved from <http://www.sba.gov/advo/research/rs341>.
- Herington, C., W. Scott (2006) Female franchisors: How different are they from female independent business owners? *Academy of Marketing Science Review*. Retrieved from <http://www.allbusiness.com/marketing-advertising/4073139-1.html>.
- Hopkins, J. (2006). African American women step up in business world: More women of color take lead on path to entrepreneurship. *USA Today*, August 4, 3B.
- Hopkins, J. (2003). Mars vs. Venus extends to entrepreneurs, too. *USA Today*, May 19.

-
- Ibrahim, A. & J. Goodwin (1986). Perceived causes of success in small business. *American Journal of Small Business*, 11(2), 41-50.
- Johnson, B. (2006) Small biz: Taking the pulse of women entrepreneurs. *Business Week Online*, May 1. Retrieved from http://www.businessweek.com/smallbiz/content/apr2006/sb20060431_307092.htm.
- Kautto, M. (2001). *Gender equality in earnings at work and at home*. London: Routledge.
- Klein, J., I. Alisultanov & A. Blair (2003). *Microenterprise as a welfare to work strategy: Two-year findings*. Washington, D.C: The Aspen Institute.
- Klein, J. & C. Wayman (2008). Encouraging Entrepreneurship: A Microenterprise Development Policy Agenda. *Community Investments*, Winter, 15-30. Retrieved from http://www.frbsf.org/publications/community/investments/0812/klein_wayman.pdf.
- Klein, K. (2006). Make way for female entrepreneurs. *Business Week Online*, March 6.
- Komppula, R. & H. Reijonen (2007). Perception of success and its effect on small firm performance. *Journal of Small business and Enterprise Development*, 14(4), 689-701.
- Langovitz, N. (2006). *Myths and realities about women entrepreneurs*. The Center for Women's Leadership at Babson College. Retrieved from <http://www3.babson.edu/CWL/research/Myths-and-Realities-of-Women-Entrepreneurs.cfm>.
- Langowitz, N. & M. Minniti (2007). The entrepreneurial propensity of women. *Entrepreneurship Theory and Practice*, 31(3), 341-364.
- Lee, S. & D. Denslow (2005). A study on the major problems of U.S. women-owned small businesses. *Journal of Small Business Strategy*, 15(2), 77-89.
- Lee, S. (2007). Margaret Heffernan and financial planners discuss how women entrepreneurs are changing the rules. *Journal of Financial Planning*, (20)7, 20-25.
- Levy-Benitez, M., S. Sanders & J. Hansen (2005). *Microenterprise employment statistics in the United States by rural-urban breakout*. Arlington, Virginia: Association for Enterprise Opportunity. Retrieved from <http://www.microbizny.org/USRuralUrban.pdf>.
- Lombard, K. (2001). Female self-employment and demand for flexible, nonstandard work schedule. *Economic Inquiry*, (39), 214-237.
- Loscocco, K. & A. Smith-Hunter (2004). Women home-based business owners: Insights from comparative analyses. *Women in Management Review*, 19 (3), 164-173.
- Marcel, J. (2001). Vermont's women entrepreneurs: Finally becoming well heeled. *Vermont Business Magazine*, Sept. 1.

- Mattis, M. (2004). Women entrepreneurs: out from under the glass ceiling. *Women in Management Review*, 19(3), 154–163.
- Moore, D. (1997). *Woman entrepreneurs: moving beyond the glass ceiling*. Thousand Oaks, CA: Sage Publications.
- Moules, J. (2006). Rural women twice as likely to form start-ups. *Financial Times*, November 15, 2006. p. 4.
- National Agricultural Statistics Service (NASS). 2009. *The census of agriculture: 2007 census*. Washington, D.C.: United States Department of Agriculture. Retrieved from http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/index.asp.
- National Women's Business Council (2006). *African American women and entrepreneurship*. Retrieved from URL <http://www.nwbc.gov>.
- Ndemo, B. & F. Wanjiku Maina (2007). Women entrepreneurs and strategic decision making. *Management Decision*, 45(1), 118-130.
- Neuman, W. (2003). *Social research methods: Qualitative and quantitative approaches, 5th edition*. Boston: Allyn and Bacon.
- Nguyen, M. (2005). Women entrepreneurs: Turning disadvantages into advantages. Retrieved from <http://www.preflightventures.com/resources/WomenEntrepreneursLitSurvey01-2005.pdf>.
- Office of Advocacy of the U.S. Small Business Administration (SBA) 2005. *Small business profiles for the states and territories, 2005 Edition*. Retrieved from <http://usgovinfo.about.com/od/smallbusiness/a/sbadrives.htm>.
- Orhan, M. & D. Scott (2001). Why women enter into entrepreneurship: An explanatory model. *Women in Management Review*, 16(5/6), 232-247.
- Patton, M. (2002). *Qualitative Research and Evaluation Methods, 3rd Edition*. Thousand Oaks, CA: Sage Publications.
- Plummer, V. (2006). Microbusiness, macro-impact: Capitalizing on potential. *Community Investments*, Spring Issue, 10-14.
- Raheim, S. & C. Alter (1998). Self-employment as a social and economic development intervention for recipients of AFDC. *Journal of Community Practice*, 5(1/2), 41-61.
- Rhodes, H. (2000). *Mid-Life Career Change to Home-Based Self-Employment in a Group of Women*. Vancouver, Canada: Simon Fraser University.
- Ryckman, P. (2005). More women choose entrepreneurial path. *The New York Sun*, p. B8. December 12.
- Sanders, C. (2002). The impact of micro enterprise assistance programs: A comparative study of program participants, non-participants, and other low-wage workers. *Sociological Service Review*, 76(2), 321-342.

-
- Sato, H. (2006). When mom means business. Increasing number of family women are taking to entrepreneurship. *The Lowell Sun*.
- Schmidt, M. (2007). *Micro and small business ownership in Vermont: Vermonter Poll 2007*. Burlington, VT: The University of Vermont, Center for Rural Studies.
- Schmidt, M. & J. Kolodinsky (2007). Microenterprise development program success: A path analysis of factors that lead to and mediate client success. *Journal of Developmental Entrepreneurship*, 12(1): 47-69.
- Schmidt, M., J. Kolodinsky, C. Flint & B. Whitney (2006). The impact of microenterprise development training on low-income clients. *Journal of Extension*, 44(2). Retrieved from <http://www.joe.org/joe/2006april/a1.shtml>.
- Schreiner, M. (1998). Self-employment, micro enterprise, and the poorest Americans. *Social Service Review*, 73(4), 496-523.
- Scott, C. (1986). Why more women are becoming entrepreneurs. *Journal of Small Business Management*, 24(4), 37-44.
- Servon, L. (2006). Microenterprise development in the United States: Current challenges and new directions. *Economic Development Quarterly*, 20(4), 351-367.
- Singleton, R. & B. Straits (2005). *Approaches to social research, 4th edition*. New York: Oxford University Press.
- Soto, E. (2002). *Understanding self-employment success among participants of microenterprise training programs*. Unpublished doctoral dissertation, American University.
- Spalter-Roth, R., E. Soto, L. Zandniapour & J. Braunstein (1994). *Micro-enterprise and women: the viability of self-employment as a strategy for alleviating poverty*. Washington, DC: Institute for Women's Policy and Research.
- Ssewamala, F., M. Lombe & J. Curley (2006). *Using individual development accounts for microenterprise development*. CSD Working Paper 06-08. St. Louis: Washington University, Center for Social Development.
- Taniguchi, H. (2002). *Determinants of women's entry into self-employment*. University of Louisville: Social Science Quarterly.
- Varma, S. (2001) *Micro-loans, peer lending, social support and business development: A case study of a United States-based microenterprise program and its members*. Unpublished doctoral dissertation, University of North Carolina at Chapel Hill.
- Weiss, C. (1998). *Evaluation: Methods for studying programs and policies, 2nd Edition*. Upper Saddle River, NJ: Prentice Hall.
- Walker, E. & B. Webster (2004). Gender issues in home-based businesses. *Women in Management Review*, 19(7/8), 404-12.
- Walker, E. & A. Brown (2004). What success factors are important to small business owners? *International Small Business Journal*, 22(6), 577-94.

Wallace, G. (2005). Using microenterprise programs in the rural United States. *Rural America*, 15(1). Retrieved from <http://www.ers.usda.gov/publications/ruralamerica/RA151/RA151F.pdf>.

Wilson, F. & D. Marlino (2007) Gender, entrepreneurship self-efficiency, and entrepreneurial career intention: Implications for entrepreneurship. *Entrepreneurship: Theory and Practice*, 31(3), 387-407.

Yang, I., M. Chang, & N. Kim (2005). Policies on facilitating startups of enterprises by specialized female resources. *Women's Studies Forum*, (21), 71-78.

Websites

Mercy Connections. Retrieved from URL <http://www.mercyconnections.org>.

Micro Business Development Program (MBDP) of the Vermont Community Action Agencies. Retrieved from <http://www.vtmicrobusiness.org/>.

Women's Small Business Program website. Retrieved from URL <http://www.wsbp.org>.

THE SBDC IN THE CLASSROOM: PROVIDING EXPERIENTIAL LEARNING OPPORTUNITIES AT DIFFERENT ENTREPRENEURIAL STAGES

Tami L. Knotts, Bridgewater State College

ABSTRACT

The Small Business Development Center (SBDC) can be a classroom resource for entrepreneurship courses. This paper describes three class projects that provide experiential learning opportunities for students related to idea feasibility, business planning, and small business operations. For students, the projects provide consulting experience, advice regarding their own business plan, and firsthand knowledge of entrepreneurial activities with no risk. For the SBDC, the projects increase their exposure and value among students, new and existing clients, and the community.

INTRODUCTION

The United States Small Business Administration (SBA) is a federal agency that maintains and protects the interest of small businesses. The SBA's mission is to "help Americans start, build and grow businesses," and it relies on Small Business Development Centers (SBDCs) and other agencies to educate entrepreneurs about the business process (United States Small Business Administration). This educational focus for Small Business Development Centers generally applies to community members; however, this paper will demonstrate how SBDCs can help educate entrepreneurship students as well through experiential learning projects. While the projects described in this paper may seem similar to a Small Business Institute (SBI) program, no SBI resources or course materials were used to develop these experiential learning methods. Rather, all of these projects were created by the professor and refined through end-of-the-semester meetings with the SBDC Director to discuss each project's strengths and weaknesses.

Kolb (1984) defines experiential learning as "knowledge that results from the combination of grasping and transforming experience." Experiential learning improves student skills in the areas of time management, decision making, critical thinking, human relations, and communications (Warren 1997). In the entrepreneurship curriculum, experiential learning is common. Experiential

applications in entrepreneurship include students writing business plans, launching venture startups, and conducting interviews of successful entrepreneurs (Solomon, Duffy and Tarabishy 2002).

The purpose of this paper is to show how entrepreneurship courses and the SBDC can work together to provide experiential learning opportunities for students and clients. This information is useful to both classroom instructors and SBDC officials because it provides a framework for coordinating experiential teaching methods with community outreach opportunities, resulting in enhanced learning and economic development. The paper provides some background information on experiential learning in entrepreneurship education and the role of Small Business Development Centers. Then it describes three class projects that provide students with firsthand knowledge of the entrepreneurial process—idea evaluation, business planning, and small business operations.

ENTREPRENEURSHIP EDUCATION

According to Solomon et al. (2002), entrepreneurship education is different from typical business education because experiential learning is a common classroom practice. Entrepreneurship students do not simply learn small business information; they use it by writing business plans, launching and managing venture startups, and providing consulting services to prospective business owners. Hawtrey (2007) contends that experiential learning is more engaging than traditional learning. Students cannot simply get by with classroom attendance; instead, they must apply concepts, solve problems, and make decisions for real-life situations.

Experiential activities not only enhance learning, but they also help students manage their time better, make more informed and thoughtful decisions, and improve their ability to communicate (Warren 1997). Referred to as “soft” skills, Peterson and Albertson (2006) agree that students can learn more about interpersonal relationships and problem-solving from an experiential exercise than they can from a classroom lecture.

For example, McCarthy and McCarthy (2006) found that business students preferred experiential learning techniques such as job shadowing over non-experiential ones such as business cases. And Hawtrey (2007) noted that students are no longer satisfied with straight lectures; they expect innovative teaching methods that emphasize communication quality over quantity. Through experiential learning, students can make the connection between their academic studies and real-world experiences because they have more control over the learning process.

SMALL BUSINESS DEVELOPMENT CENTERS

Small Business Development Centers (SBDCs) provide potential and existing entrepreneurs with individualized assistance related to venture startup and performance assessment. As part of a larger network, Small Business Development Centers must adhere to extensive reporting and paperwork requirements related to any services offered to the community. Basic SBDC services

include business assistance in areas such as management, marketing, finance, operations, and technology for prospective and current business owners. Specialized services focus on international trade, procurement, venture capital, and rural development. SBDCs, which are typically located in colleges or universities, cater to local communities by developing special programs for economic development and offering educational seminars based on community needs (United States Small Business Administration).

Some Small Business Development Centers offer student consulting services for their clients, with topics ranging from business planning to logistics to human resources. At the Wharton SBDC, for example, undergraduate students assess business problems, conduct industry research, and present their findings (On the Job Learning). Temple University offers similar student consulting services at the graduate level (QS Top MBA), while Drexel University focuses on non-profit consulting by top undergraduate students (Business Consulting). While many colleges have projects like the ones described above, it is unclear how many of these universities utilize the SBDC to the extent described in this paper, with participation in multiple entrepreneurship courses at different stages of the entrepreneurial process.

This paper focuses on a regional Small Business Development Center, which serves the southwest corner of a Midwestern state by offering multiple training seminars for community members ranging from financial management to international trade. Although this SBDC is affiliated with a university, its primary educational focus has been on community members. In 2005, however, a partnership was formed between the Small Business Development Center and several entrepreneurship classes in the business college. This partnership emphasizes experiential learning by allowing students to work on real-life projects with SBDC clients and consultants. Each class project focuses on a different entrepreneurial activity such as idea evaluation, business planning, and small business operations.

EXPERIENTIAL LEARNING PROJECTS

This section describes three class projects that incorporate the SBDC and its resources into the entrepreneurship classroom—the Feasibility Project which assesses the potential of a business idea, the Business Plan Project which requires extensive research and preparation of a written business plan, and the SMART Project which evaluates the operations of an existing small business. The process for each project, the SBDC’s role, and project problems and solutions are also explained.

Feasibility Project

The Feasibility Project is for juniors and seniors in a basic entrepreneurship class. It provides students with an experiential learning opportunity related to idea development. Student

teams work with clients from the Small Business Development Center (SBDC) to evaluate their business idea and prepare a feasibility study. The Feasibility Project provides potential entrepreneurs with approximately 100 hours of research on critical business issues, ranging from market segmentation to capital equipment requirements to breakeven analysis. The Project helps students learn the evaluation process firsthand by requiring continuous research and reassessment of the client's idea. At the end of the semester, the student teams present their Feasibility Study to the client and make a "go or no go" recommendation based on their interpretation of the research findings.

The Feasibility Project consists of the Feasibility Study and Presentation. The eight parts of the Feasibility Study include the following: (1) Title Page, (2) Business Overview, (3) Marketing Assessment, (4) Operations/Management Assessment, (5) Financial Assessment, (6) Feasibility Decision, (7) Appendices, and (8) References. Students are assigned a major part (e.g.—2, 3, 4, or 5), and then they coordinate their information to complete the study. For the Feasibility Presentation, the students have 45 minutes to present their information to the client and justify their feasibility recommendation.

The Feasibility Project, which was implemented in Spring 2005, helps students gain practical knowledge of the entrepreneurial process. Since 2005, 280 students and 34 clients have been involved in the Feasibility Project. Each client has two teams working on their business idea, with teams varying in size from 4 to 5 members. The clients' business ideas have ranged from simple ones (e.g.—teahouse and doggy daycare) to more complex ones (e.g.—indoor water park and multi-entertainment complex). About 60 percent of the business ideas have been deemed not feasible by the students, while the other 40 percent have received positive feedback and the research needed to pursue their business opportunity.

Process

Prior to the start of each semester, the professor and SBDC officials select the most appropriate candidates for the Feasibility Project based on the following criteria: validity of business idea, passion for business idea, investment funds, availability for student meetings, willingness to respond to student questions in a timely manner, and openness to student suggestions. From there, the SBDC notifies the clients about their selection, and the professor has the students sign a confidentiality and professionalism agreement, which explains their responsibilities as a business consultant. During the semester, students meet with the clients 4-5 times, conduct primary and secondary research, report their research hours to the SBDC, submit rough drafts of the Feasibility Study for professor review, and schedule group meetings to prepare and practice the Feasibility Presentation. At the end of the semester, the student teams present their feasibility recommendation to the client and SBDC officials to answer questions about their research methods and reasoning.

SBDC's Role

The SBDC's role in the Feasibility Project begins with their solicitation of participants. Through their business planning course, they identify aspiring entrepreneurs who would benefit from the project, inform them of the requirements, and assist the professor in selecting the most appropriate candidates. The SBDC also assigns a graduate assistant (GA) to the Feasibility Project to oversee student/client relations, coordinate meetings, and answer client questions. This graduate assistant, an MBA student, has either a marketing or finance background and works specifically for the SBDC. Additional GA duties include teaching students how to report their consulting hours, providing reminders about client meetings, and helping students conduct market research reports. Other SBDC assistance includes answering research questions for students, providing access to online research databases and startup entrepreneurship manuals, monitoring client satisfaction with student progress during the semester, and offering follow-up support for clients participating in the Feasibility Project. This follow-up support includes helping clients interpret the proforma financial statements, prepare bank loan requests, and reassess feasibility recommendations. The SBDC Director and consultants also attend each Feasibility Presentation and question the students about their research methods and rationale. These questions typically lead to a class discussion that becomes a learning opportunity for the students.

Problems and Solutions

No classroom project is without problems, and the Feasibility Project is no different. Two recurring issues that require attention are the lack of proofreading by students and the lack of participation by clients (see Table 1 comments below). Multiple solutions for the proofreading issue have been implemented. First, two rough drafts of each section of the Feasibility Study are required prior to the students submitting their final version. With the professor being able to view the student's work twice, it increases the quality of the final submission. Second, the students are required to submit their final version electronically to the professor several days before their presentation. This gives the professor time to review the final version, check for major errors, and make corrections before it is presented to the client. Third, students receive a point deduction for mistakes related to a lack of proofreading (e.g.—spelling, grammar, formatting, etc.). The number of errors has decreased since these policies were implemented.

Lack of participation by clients refers to their slow response time to student questions and their loss of interest in the project due to personal reasons or the belief that their idea may be unfeasible. This client-related issue has been addressed in multiple ways. Specific criteria guide the client selection process in an effort to ensure high-quality participants, and the SBDC GA stays in contact with clients on a regular basis to keep them informed. In addition, the clients are required to attend the SBDC's business planning course and pay a small fee for participating in the Feasibility

Project, both of which create a financial commitment on their part. Even with these policies in place, proper client selection is the most challenging part of the Feasibility Project.

Results

Results from the Feasibility Project include three new startups, the continuance and expansion of two existing business, and the launch of an e-business within the next year. The success of the Feasibility Project cannot be measured by economic development alone. Positive feedback regarding the learning process is a better indicator of educational achievement. A sample of student and client comments regarding the Feasibility Project are listed below in Table 1.

Table 1: Feasibility Project Comments	
Student Comments	
◆	I learned more relevant information from this project than any other single project that I have ever done in my life.
◆	I enjoyed how hands-on this was. I feel like it really exemplified what it is like to start up a business only we didn't have to take any risk.
◆	I learned more about human behavior in this class than I ever could in any psychology class!
◆	I liked how the study encompassed all aspects of business. Although this is a management class, we had to do aspects of marketing, operations, and finance.
◆	I liked the project because I can put on my resume that I helped produce a feasibility study.
◆	The part of the feasibility study I liked was the research part.
◆	I think a screening process is needed for the entrepreneurs to avoid situations where they are unreliable. Our client did not even attend the presentation!
◆	I would suggest that if clients are going to seek the help of students and the SBDC that they should sign something saying that they will show up for meetings and the presentation or at least explain why they won't be able to attend.
Client Comments	
◆	Great way to get research completed when you don't have the time or resources.
◆	All the information we received was so valuable. It wasn't something that we could have done on our own in the amount of time the students had.
◆	You can't get this much data and research at this price anywhere else.
◆	This is an excellent project for everyone involved. It not only engages the students in real life scenarios but also keeps the client engaged in his/her idea.
◆	Some of their information was not correctly worded.
◆	Students procrastinated on some details. More attention to detail (for example, proper writing) on their part would have made the project better.

Business Plan Project

The Business Plan Project is for seniors in a new venture management class that focuses on business planning, which is a standard requirement in most entrepreneurship curricula. Because the class size is limited, students can write their own individual plans and receive extensive feedback throughout the semester. In this class, students develop a business idea, submit it to the professor and class for feedback, and prepare a complete business plan based on the revised version of their idea. The major parts of the business plan include an industry analysis, products/services plan, marketing plan, operations plan, management plan, and financial plan.

Process

As part of the class, students participate in an internal business plan competition. To prepare for the competition, students complete an Idea Assessment assignment early in the semester that requires them to determine whether their idea is a valid market opportunity. Once their business opportunity is identified, students make an Elevator Pitch to their classmates about the opportunity. Students then spend the majority of the semester conducting primary and secondary research, submitting rough drafts of different sections for professor review, and preparing their business plan presentation. At the end of the semester, students present their business plan to a panel of judges, consisting of community experts (e.g.—marketing directors, bank executives, etc.) and SBDC consultants, to determine the best business opportunity. The judges provide each student with verbal and written comments about their presentation and business plan, and the top two plans from the class receive prize money and are eligible to represent the university in an external business plan competition.

SBDC's Role

For the Business Plan Project, the SBDC allows students to use their Resource Library and assists them with market and financial research. SBDC consultants also serve as judges for the internal business plan competition. They spend approximately two hours reviewing, correcting, and scoring each plan. The SBDC Director and consultants attend each business plan presentation and ask the students challenging questions that require them to demonstrate their knowledge and understanding of each business area. After the semester is over, the SBDC offers post-class assistance to students who want to strengthen their business plan and prepare it for external review. *Problems and Solutions*. Because the Business Plan Project does not involve clients, the problems associated with this project are different in nature (see Table 2 comments below). The first problem relates to the number of students in the class. By allowing students to write individual business plans, the professor can quickly become overwhelmed with numerous questions and requests for

meetings. Limiting class sizes and/or allowing students who do not have a strong business idea to assist other students with their business plan research are both viable solutions. The second problem for the Business Plan Project deals with student enthusiasm about the competition. While winning is enough motivation for some students, the idea of receiving prize money is a better motivator. Having local businesses sponsor the business plan competition is an appropriate way to solicit financial support and involvement from the community. It also sends a signal to the students that the competition is important and that their business plans must be quality material in order to win. *Results.* Over the last two years, 30 students have participated in the business plan competition. Two students have started their businesses, two more have launched a modified version of their original ideas, and one will start up this summer. These business ideas range from property management and law firms to art supply websites and landscaping services. Last year was the first time that seed money was awarded to the first and second place business plans. Both student entrepreneurs who received initial funding are finishing their degrees and plan on starting their businesses after graduation.

Table 2 below lists some of the student comments that have been given about the Business Plan Project. While the project is a lot of work for the students, they enjoy developing their own idea into a potential business opportunity rather than working on a textbook case.

Table 2: Business Plan Project Comments	
Student Comments	
◆	The most beneficial class for me has been new venture management. I was able to write a business plan for my idea. This really helped me understand the detail and planning that goes into starting a business and running it for a long time.
◆	This class not only helped me realize that I wanted to go into my family business but helped me develop a real business plan that I will be putting into action!
◆	This class has given me the proper tools and knowledge to run my future business, as well as a great jumpstart. I feel very confident that I will succeed in my entrepreneurial quest.
◆	Writing a business plan is a lot of work, but I learned that it takes hard work to make a business successful. Thank you!
◆	I liked having the chance to win money from the BP competition even though I didn't get any!
◆	This was my favorite class because I didn't have to work in a group. I got to write my own business plan.

SMART Project

The SMART Project is for graduating seniors and graduate students in a practicum class that focuses on small business operations. The SMART (Strategic Management Assessment Review Tool) is based on criteria from the Malcolm Baldrige Quality Award. The SMART was created to provide SBDCs with a tool for assessing the operations of existing business clients and to teach them how different business processes are linked to quality improvement (SMART).

In this class, students use the SMART to provide a current entrepreneur/SBDC client with an evaluation of key business processes. The project provides an existing business owner with over 75 hours of in-depth analysis of their key operations with strengths, opportunities, and recommendations identified. The SMART Project helps students understand the day-to-day operations, challenges, and growth opportunities that small firms face on a regular basis. At the end of the semester, the student groups present their findings to the client along with an action plan that outlines specific steps that should be taken to improve their business.

The SMART Project, which began in Spring 2008, consists of the SMART Report and Presentation. The six categories of the SMART Report include the following: (1) Customer and Market Focus, (2) Strategic Planning, (3) Process Management, (4) Human Resource Focus, (5) Information and Analysis, and (6) Leadership. Student teams interview the client using a set of pre-arranged questions for each category and then determine strengths, opportunities, and recommendations based on the client's responses. For the SMART Presentation, each student team has 45 minutes (not including the Q&A period) to present their information and recommendations for improvement to the client.

Process

Before the semester begins, the professor and SBDC officials select the most appropriate business for the SMART Project based on the following criteria: amount and type of business assistance needed, willingness to share information with students, openness to student suggestions, and availability of personnel for student questioning. Once a business is selected, the SBDC notifies the owner, and the professor has the students sign a confidentiality and professionalism agreement, which explains their responsibilities as a business consultant. During the semester, students conduct four interviews at the client's place of business, set up additional meetings with key employees, analyze interview responses, submit rough drafts of each section of the SMART Report for professor review, and report their research hours to the SBDC. The students also schedule regular meetings with the professor and the SBDC consultants to discuss the strengths and weaknesses for each SMART category. At the end of the semester, the student teams present an action plan to the client that lists the most critical recommendations for improvement, along with a process for implementation.

SBDC's Role

The SBDC's role in the SMART Project is similar to their participation in the Feasibility Project. SBDC consultants identify an existing client that needs assistance in multiple areas and informs them of the project's time commitment and informational requirements. For the SMART Project, it is imperative that the client allow on-site visits by the students and be truthful when answering any interview questions. The SBDC helps ensure this by suggesting which business owners will work well with the students and be a good fit for the Project. An SBDC graduate assistant is also available to help students report their consulting hours properly and to coordinate meetings.

The most important assistance that the SBDC provides for the SMART Project is an assigned consultant. The consultant manages the relationship with the existing business owner while the professor manages the classroom. Prior to the first meeting between the students and the client, the consultant interviews the business owner to find out his/her expectations for the project and to get an in-depth look at the business. Throughout the semester, the consultant communicates with the client to determine their satisfaction with the project's progress. The consultant also meets with the students to discuss their findings related to the business and reviews their rough drafts. The assigned consultant attends each SMART Presentation to hear the project recommendations and to make sure that the client understands what the students are suggesting.

Problems and Solutions

As with the Feasibility Project, two of the most common problems for the SMART Project focus on student proofreading and client participation (see Table 3 comments below). For the proofreading problem, the same policies—multiple rough drafts, early final version, and point deductions—are in place to resolve this issue. A second problem for the SMART Project has to do with the mentality of existing business owners. Since the SMART clients are already in business, it seems more difficult for them to accept the recommendations provided by the students. While the clients hear what the students are saying and may even agree with the basic idea, they usually find reasons why the business may not be able to implement the recommendation. Perhaps the clients believe that no one knows the strengths and weaknesses of their business better than themselves. As a solution to this problem, the students attempt to sell the recommendations portion of the SMART Report to the clients as if it were their idea. In other words, the students refer to comments that the clients made during the interview process which indicated the need for the recommended changes. This method helps the clients see that the necessary changes are not just perceived by the students but by them as well.

Results

The classroom results associated with the SMART Project are limited due to its recent implementation. While most of the student comments (see Table 3) are positive, the business results are not yet known.

Table 3: SMART Project Comments	
Student Comments	
◆	I liked how this project took a professional approach at analyzing a business. It really makes me feel that I have a better understanding of how to look at a company and make critical decisions.
◆	I feel like I actually got a realistic application of the built up knowledge that I've learned.
◆	This was definitely a beneficial project. I enjoyed the class and project, and I know it will definitely help prepare me for the future and my business endeavors.
◆	I really liked working with a real client. He was really interested in what we had to say and was open-minded to our suggestions.
◆	It seemed like the client didn't agree with our suggestions during the presentation.
◆	Our client didn't tell us everything we needed to know in order to make the best recommendations. I thought he could have helped us more.
Client Comments	
◆	The students made me think about issues that I had ignored for years (e.g.—succession planning).
◆	While I didn't agree with every recommendation, I appreciated the students' genuine concern for my business.
◆	Some of the groups did a better job writing their report. I felt this showed that some students took the project more seriously than others. All of them did a really good job on their presentations.
◆	I enjoyed helping the students understand how a real small business works.

CONCLUDING REMARKS

The SBDC can be a classroom resource for entrepreneurship courses. This paper describes three projects that involve the SBDC in the learning process. Each project is related to a different level of entrepreneurial activity, which gives students the opportunity to not only learn about entrepreneurship but to actually apply it through real-life scenarios. With the Small Business Development Center present in the classroom, students have the opportunity to experience entrepreneurship firsthand and engage in processes related to idea evaluation, business planning, and operations assessment.

Prior to the SBDC's involvement in these classes, only a few business students at the university even knew that it existed. Now students understand the SBDC's role in the community and benefit from their involvement in the classroom. Through the three class projects described in this paper, students receive firsthand knowledge of the entrepreneurial process and feedback regarding their own business ideas. As Senge (1990) suggested, students tend to learn entrepreneurship best when they experience it not just hear about it, and student comments regarding these three projects support that notion. For both the Feasibility Project and SMART Project, students also enhance their resume by providing small business consulting services to SBDC clients.

From both the Feasibility and SMART projects, the Small Business Development Center benefits from about 100 hours of student research time, which are reported as consulting hours. Both projects also increase the SBDC's exposure and value among students, new and existing clients, and the community. New ventures that start up as a result of the Feasibility Project lead to economic development in the community, and according to at least one SBDC Director, this type of impact is a critical measure of success for any Small Business Development Center.

The three projects described in this paper—related to feasibility, business planning, and small business operations—have positive outcomes for students and the Small Business Development Center. Involving the SBDC in the classroom can provide students with more experiences and resources than a textbook, and it can provide potential and existing SBDC clients with market research that is difficult to find or too expensive.

LIMITATIONS AND FUTURE RESEARCH

While this paper examines the advantages of involving the SBDC in the classroom, it is important to note that none of these benefits are possible without a positive working relationship between the professor and the SBDC Director. In addition, no classroom project is without problems, especially when dealing with two different sets of expectations—SBDC clients versus college students. This paper focuses on only the most common problems encountered with each project. Finally, the professor's role in each project is not described in detail. The intended focus

of this paper is how the SBDC's involvement, rather than the professor's involvement, enhances student knowledge of the entrepreneurial process through three experiential learning projects.

Future research needs to measure the level of learning that occurs for the student and the entrepreneur during this experiential process. A simple pre-test and post-test could capture entrepreneurial knowledge prior to and after each project in order to determine the project's effect on the participants. This measurement would also allow the researchers to track which projects benefit entrepreneurial learning the most and at which stage SBDC involvement seems to have the greatest impact for students and clients. Even without this information, however, it is clear that from an educational perspective, this type of learning is invaluable because students get to act like an entrepreneur without incurring any risks, and potential or existing entrepreneurs get information at little to no cost.

ACKNOWLEDGMENT

The author would like to thank Rayanna Anderson, SBDC Director, for her assistance in the development and implementation of the projects described in this paper. Her knowledge and input increased student learning and led to numerous project improvements.

REFERENCES

- Business Consulting* (n.d.) Retrieved August 9, 2008, from Drexel University LeBow College of Business, <http://www.lebow.drexel.edu/Prospects/Undergraduate/DUing/index.php>.
- Hawtrey, K. (2007). Using experiential learning techniques. *Journal of Economic Education*, 38, 143-152.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. New Jersey: Prentice-Hall.
- McCarthy, P. R. & H. M. McCarthy (2006). Why case studies are not enough: Integrating experiential learning into business curricula. *Journal of Education for Business*, 81, 201-204.
- On the Job Learning: Consulting for Wharton's Small Business Development Center (n.d.) Retrieved August 9, 2008 from http://whartonugrad.typepad.com/ugrad_division/2009/02/on-the-job-learning-consulting-for-whartons-small-business-development-center.html.
- Peterson, R. M. & D. E. Albertson (2006). Running a micro business in marketing class: Experiential learning right out of the gate. *Marketing Education Review*, 16, 105-109.
- QS Top MBA Business School Profiles: The Fox School of Business and Management, Temple University* (n.d.) Retrieved August 9, 2008, from http://www.topmba.com/mba_programs/business_school_profiles/profile/article/temple_university_the_fox_school_of_business_and_management.
- Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.

SMART: Strategic Management Assessment Review Tool (n.d.) Retrieved August 9, 2008, from <http://www.missouribusiness.net/consulting/smart.asp>.

Solomon, G. T., S. Duffy., & A. Tarabishy (2002). The state of entrepreneurship education in the United States: A nationwide survey and analysis. *International Journal of Entrepreneurship Education*, 1, 65-86.

United States Small Business Administration: Office of Small Business Development Centers Entrepreneurial Development (n.d.) Retrieved August 9, 2008, from <http://www.sba.gov/aboutsba/sbaprograms/sbdc/index.html>.

Warren, R. G. (1997). Engaging students in active learning. *About Campus*, 2, 16-20.

Wink, C. (2008). Advice is cheap at business schools. *Philadelphia Business Journal*, Retrieved August 9, 2008, from <http://philadelphia.bizjournals.com/philadelphia/stories/2008/03/17/focus5.html>.

CONCERNS AND EXPECTATIONS OF AFRICAN AMERICAN ENTREPRENEURSHIP STUDENTS

Melinda D. Harris, Norfolk State University
Paulette K. Edmunds, Elizabeth City State University
Jim Chen, Norfolk State University

ABSTRACT

Entrepreneurship education encourages and prepares those who want to become entrepreneurs or entrepreneurial thinkers to be successful. Entrepreneurship education has grown astronomically over the last thirty years. In fact, now the Boy Scouts and Girl Scouts of America offer an “Entrepreneurship Badge” (Timmons, 2008).

Though 11.8 percent of U.S. population is African American, they only own five percent of business firms in the U.S. Moreover, 90 percent of African-American owned firms have no paid employees. Yet between 1997 and 2002, of all groups, African American businesses experienced the highest growth rate, an astounding 45.4 percent (Ying, 2007). Recent growth has not been so strong. Therefore, it is imperative to understand the factors that influence career expectations and concerns of African American entrepreneurship students to ensure their continued economic growth and prosperity. A successful entrepreneurial landscape requires participation from all population sectors. The ethnic breakdown of the U. S. population has and will continue to become increasingly diverse; the contribution of minority business ownership makes a significant impact on the nation’s economy (Department of Labor, 2009).

This study investigated African American entrepreneurship students’ perceptions regarding (1) the level of importance of the factors that positively influenced their decisions to pursue an undergraduate degree in entrepreneurship, (2) the financial sources that support their undergraduate education, (3) the level of importance of the supportive elements that they expect will be important in their initial job assignments, and (4) their highest career expectations. Our findings would contribute to the efforts of the business schools and professional organizations in recruiting, retaining, and educating African American entrepreneurship students.

INTRODUCTION

America's small businesses employ more than 50 percent of the private workforce and generate more than half of the nation's gross domestic product (Department of Labor, 2009). It is obvious that entrepreneurs are the main driving force of America's economy. Since more than 95

percent of businesses employ 500 or fewer individuals (Bandyk, 2009), a strong, vibrant, entrepreneurial small business community is critical to a healthy economy and thriving society. Twelve percent (11.8%) of the U.S. population is African American. However, they only own five percent of business firms in the U.S. Moreover, only ten percent of African American owned firms have paid employees, which is significantly below the national average of 25 percent (U. S. Census Bureau, 2002).

The U.S. Census Bureau reports that 64 percent of business owners had at least some college education at the time they started or acquired ownership in their businesses. Further, 34.5 percent of Asians had a bachelor's degree or higher level of education, compared to 22 percent for whites, 16.4 percent for Islanders, 10.9 percent for African Americans, 9.2 percent for Native Americans, and 6.8 percent for Hispanics. Receipts vary for all groups based on size and industry. Of all African American owned firms, 50.8 percent made less than \$10,000, in 2002; whereas 33.7 percent of white-owned firms and 28.8 percent of Asian-owned firms fell into this category (U.S. Census Bureau, 2002).

Surveys by the Department of Labor indicate that nearly 80 percent of would-be entrepreneurs in the United States are between the ages of 18 and 34 and close to 70 percent of the teenagers wanted to become entrepreneurs (Department of Labor, 2009). Entrepreneurship education offers a solution to encourage and prepare those who want to become entrepreneurs or entrepreneurial thinkers to be successful. According to a Harris Poll survey, sponsored by the Kauffman Foundation, of 2,438 youths between the ages of 8-21 from July 12 to August 2, 2007, four out of ten respondents indicated that they would like to start their own businesses (Kauffman Foundation, 2007).

The purpose of this research is to investigate African American entrepreneurship students' perceptions regarding (1) the level of importance of the factors that positively influenced their decisions to pursue an undergraduate degree in entrepreneurship, (2) the financial sources that support their undergraduate education, (3) the level of importance of the supportive elements that they expect will be important in their initial job assignments, and (4) their highest career expectations. The findings would contribute to the efforts of the business schools and professional organizations in recruiting, retaining, and educating African American entrepreneurship students.

METHOD

Questionnaires were distributed to African American entrepreneurship majors in their senior year of a bachelor's degree program at three universities in the Southern region of the United States in March 2009. The questionnaires primarily utilized numerical ranking with 3 denoting very important, 2 denoting fairly important, and 1 denoting not too important or not important at all. A total of 88 usable responses were collected. Results of the survey may apply to African American

entrepreneurship students in the Southern region and may be generalized to other parts of the country only with caution.

FINDINGS

To determine whether there are significant differences among the survey respondents' rankings on the primary reasons for pursuing an undergraduate major in entrepreneurship, the primary reasons were sorted in ascending order based on the mean of ranks (Table 1), and stepwise F tests for equality of means were conducted. At first, we compared the means of ranks between long-term earnings potential (X_1) and interest in entrepreneurship (X_2), i.e., we tested the hypotheses

$$H_0: \mu_1 = \mu_2$$

$$H_1: \mu_1 \neq \mu_2$$

Since there was no significant difference, we included employment opportunity (X_3) in the hypotheses, i.e., we tested

$$H_0: \mu_1 = \mu_2 = \mu_3$$

$$H_1: \text{not all } \mu_i \text{ are equal}$$

We continued to add a factor to the hypotheses until the null hypothesis was rejected. When the following hypotheses were tested

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$$

$$H_1: \text{not all } \mu_i \text{ are equal}$$

We rejected the null hypothesis ($F=2.72$, $P=0.04$) and classified the first three factors as Group 1.

To identify the second group, we started by testing $H_0: \mu_4 = \mu_5$ and $H_1: \mu_4 \neq \mu_5$ and repeated the same process we used to identify the first group. The fourth through sixth factors are classified as Group 2. The results are given in Table 1.

Table 1 reveals (1) that long-term earnings potential, interest in entrepreneurship, and employment opportunity are more important than initial salary position, private business owner potential, and professional prestige in selecting a major, and (2) many entrepreneurship students are more interested in corporate entrepreneurship than in private business ownership. Astin et al (1987) studied undergraduate students' selection of major fields of study from 1966 through 1985 and found

that the fields which have shown increases in popularity are fields with highest job opportunities. After twenty years, their findings are still applicable to entrepreneurship students.

Table 1: Primary Factors in Selecting an Undergraduate Major in Entrepreneurship

Factors (X_i)	Frequency of Rank			Total	Mean of Rank	F-Value	Group Rank
	3	2	1				
Long-Term Earnings Potential (X_1)	68 (77%)	12 (14%)	8 (9%)	88 (100%)	2.68	$H_0: \mu_i = \mu, i=1, \dots, 3$ F=0.74 P=0.48	Group 1
Interest in Entrepreneurship (X_2)	64 (73%)	16 (18%)	8 (9%)	88 (100%)	2.64		
Employment Opportunity (X_3)	54 (61%)	30 (34%)	4 (5%)	88 (100%)	2.57		
Initial Salary Position (X_4)	49 (56%)	27 (31%)	12 (13%)	88 (100%)	2.42	$H_0: \mu_i = \mu, i=4, \dots, 6$ F=0.38 P=0.68	Group 2
Private Business Owner Potential (X_5)	48 (55%)	24 (27%)	16 (18%)	88 (100%)	2.36		
Professional Prestige (X_6)	48 (54%)	20 (23%)	20 (23%)	88 (100%)	2.32		

Table 2 displays the financial sources for obtaining education in entrepreneurship. It shows that a whopping 82% of the students have to work either full time or part time to financially support their college education. This finding is an indication of the economic status of most African American undergraduate students. It is also indicative of the fact that HBCUs must try different methods to persuade their students to study more and work less.

African American students must be convinced that a good well-rounded education is the best investment for their careers. While acknowledging the need for employment during their academic training, creating study time and learning will give them the best returns for career success. According to U.S. Census Bureau, people with a bachelor's degree, on average, earn more than 70% more than those with just a high school diploma (Willis, 2005).

Table 2 also shows that 70% of survey participants applied for guaranteed loans, supportive grants, and/or other forms of financial aid in order to obtain their undergraduate entrepreneurship education. Clearly there is a strong need to continue federal, state, and local financial support to African American undergraduate students.

Table 2: Financial Sources for Obtaining Education in Entrepreneurship

Financial Sources	Frequency	Percent*
A Job	72	82%
Guaranteed Loans, Supportive Grants and/or Other Financial Aids	70	80%
Scholarships	62	70%
Parents	58	66%
Internship and/or Work-Study Programs	58	66%
Tuition Rebate Programs	54	61%
* Total is over 100% because a student may depend on more than one financial source.		

Table 3 lists the supportive elements that respondents expect will be important in their initial job assignments. The stepwise F tests were used again to test the equality of the means of ranks. Sixty three percent (63%) of them rated knowledge and skills obtained from college education very important in their future initial job assignments. Table 3 also reveals that the respondents expect their initial success in a job assignment will include assistance from their supervisors and in-house training. Thirty two percent (32%) of respondents do not expect assistance from peers. This finding may indicate that due to competition, some may hesitate to seek assistance from peers, a tendency which may negatively impact their job performance.

Table 3: Important Supportive Elements in Initial Job Assignment

Factors	Frequency of Rank			Total	Mean of Rank	F-Value	Group Rank
	3	2	1				
Knowledge & Skills Obtained From College Education (Y ₁)	53 (63%)	22 (26%)	9 (11%)	84 (100%)	2.52	H ₀ : $\mu_1 = \mu_2$, F=4.12 P=0.04	1
Assistance From Supervisor (Y ₂)	40 (47%)	32 (37%)	14 (16%)	86 (100%)	2.30	H ₀ : $\mu_2 = \mu_3$, F=0.03 P=0.87	2
In-House Training (Y ₃)	41 (47%)	31 (35%)	16 (18%)	88 (100%)	2.28	H ₀ : $\mu_i = \mu$, $i=2, \dots, 4$ F=3.61 P=0.03	
Assistance From Peers (Y ₄)	30 (34%)	30 (34%)	28 (32%)	88 (100%)	2.02		3

Indeed, to provide students with the knowledge and skills, including developing a strong mentor relationship to become successful as entry-level professionals, is one of our missions. The

environment in which business professionals operate has changed dramatically due to, among other factors, the rapid development of information technology, globalization, competition among business professionals, and severe unanticipated economic downturns (Albrecht and Sack, 2001; Boritz, 1999; Wessels, 2004). Therefore, it is imperative for entrepreneurship educators to continuously revise and enrich entrepreneurship curricula and course content to meet the dynamic and fast-changing needs of the business world and excite students to pursue entrepreneurship as a career.

Table 4 displays the highest career expectations of those responding. It clearly shows a significant lack of interest in academia. Business schools are facing a shortage of academically qualified faculty (Bisoux, 2009). According to AACSB International, (1) there was a shortfall of more than 1,000 business doctorates in 2008 and the shortfall could reach 2,000 in ten years, (2) the proportion of academically qualified faculty has decreased substantially, and (3) business school faculty salary growth has outpaced inflation – an obvious consequence of supply-and-demand imbalance (AACSB International, 2008).

Professors are role models who can positively influence the career choices of their students, and thus should constantly encourage African American entrepreneurship students who show significant potential to become entrepreneurship educators. The strong job market for entrepreneurship faculty and heightened salaries may attract more African American students into the academy.

Of the respondents, 41% have a career goal to reach the position of CEO or another key administrative position within a corporation. Executive management is a great way to prepare for an entrepreneurial career.

Table 4: Highest Career Expectations of Entrepreneurship Students

Highest Career Expectations	Frequency	Percent
CEO via growing a private business into a publicly traded company	29	32.95%
CEO via climbing the corporate ladder	23	26.14%
A Key Corporate Executive Position	13	14.78%
Owner of Private Business	10	11.36%
A Key Academic Executive Position	7	7.95%
A Middle Management position	2	2.27%
School Principal	2	2.27%
College Professor	1	1.14%
School Teacher	1	1.14%
Total	88	100%

SUMMARY AND CONCLUSIONS

Our analyses of data collected indicate that 82% of the African American entrepreneurship students have to work to financially support their college education. Though there is a strong need for continuing federal, state, and local financial support of these undergraduate students in pursuing careers in entrepreneurship, we feel that, in addition to guaranteed loans and grants, internship programs should also play an important role in the financial support effort. Internship programs will not only offer a viable financial support alternative, but also provide real-world experiences while students are still in school. Internships can create an “intern to employee” model in which the company wins, and the student wins.

While internships provide the “real world experience,” students also depend on the knowledge and skills obtained from a strong college education to function effectively in their initial job assignments. Moreover, more than 40% of the entrepreneurship students are interested in corporate entrepreneurship, rather than private ownership. In a rapidly and dramatically changing business world, it is imperative for entrepreneurship educators to continuously revise and enrich entrepreneurship curricula and course content to meet the needs of employers and students.

Extremely few of the respondents were interested in academia. This is an area of great concern and an area ripe for further examination. Entrepreneurship educators must exercise their role-model status to positively influence the career choices of their students. We hope entrepreneurship educators’ influences accompanied by the efforts of professional organizations, a strong job market, and lucrative salaries will attract more African American students into academia. Given the current population situation with “Baby Boomers” retiring, the need for more educators has become even more important.

A large majority of our respondents have a desire to reach a key administrative position in corporate America. But with limited entry-level middle-management ranks, graduates will face slow promotion and sharp competition. To those who intend to pursue intrapreneurship or social entrepreneurship as a vehicle to climb the corporate ladder, and/or eventual private entrepreneurship, we have the following suggestions:

1. Focus on a strong education. Education will always pay back more than the initial investment required. Education is the competitive advantage. The better students are hired and promoted first.
2. Develop leadership skills. Students must distinguish themselves through not only their grades, but also their leadership activities and potential, e.g., internships, community, and civic volunteer activities. Such projects provide excellent opportunities to strengthen leadership, communication, interpersonal relations, and team skills.

3. Be Patient. Downsizing, rightsizing, and restructuring have eliminated many middle management positions. The fewer the available positions, the slower the hiring and promoting.
4. Be ready for sharp competition. Fewer positions also mean strong competition. Promotions will not come quickly and easily. One has to outperform one's peers in order to be promoted. In addition to being well schooled in entrepreneurship, entrepreneurship students must also be knowledgeable of the business functional areas, e.g., marketing and finance.
5. Improve communication skills. Excellent communication (oral, written, and listening) and interpersonal skills (the ability to get along with everyone) are critical to a successful career.
6. Join a high-growth company. In a high-growth firm, positions are more readily available; there is usually more room for growth, and these firms generally have excellent benefits, e.g. tuition reimbursement, which support continued education.
7. Change employers when blocked. When peers are promoted, one must honestly evaluate why. First evaluate oneself, then evaluate the entire environment. Changing employers may be one of the best ways to move ahead in one's career.
8. Learn a foreign language. Many firms in America have expanded or are going to expand globally. Those who are fluent in other languages have a clear competitive advantage over their peers.
9. Develop a mentor relationship. Identify and develop a strong relationship with a mentor within the organization can be instrumental to career success.

In conclusion, one's education, perseverance, commitment, and dedication are all keys to one's success in entrepreneurship or any other field (Timmons, 2008). Further, innovation is what drives successful entrepreneurship. Students must innovate to compete in the corporate environment and to create successful businesses.

REFERENCES

- AACSB, *Business School Faculty Trends 2008*, (n.d.) Retrieved June 23, 2009 from <http://www.aacsb.edu/knowledgeservices/home/trend-rpt-desc.asp>.
- Albrecht, W.S. and R. J. Sack (2001). *The CPA Vision Project 2011 and beyond*. AICPA.
- Astin, A. W., Green, K. C., and Korn, W. S. (January, 1987), *The American Freshman: Twenty-year trends 1966-1985*, Cooperative Institutional Research program, American Council on Education, University of California, Los Angeles.
- Bandyk, Matthew (July, 2009), *Small Businesses Hold on Despite Economy*, *U.S. News & World Report*, Retrieved August 1, 2009 from <http://www.usnews.com/money/business-economy/small-business/articles/2009/07/22/small-businesses-hold-on-despite-economy.html>.

-
- Bisoux, Tricia (March/April 2009), Solving the Doctoral Dilemma, *BizEd*.
- Boritz, J.E. (1999). *The Accounting Curriculum and IT*. University of Waterloo.
- Department of Labor, Business Ownership-Cornerstone of the American Dream, (n.d.) Retrieved June 25, 2009 from <http://www.dol.gov/odep/pubs/business/business.htm>.
- Department of Labor, *Encouraging Future Innovation: Youth Entrepreneurship Education*, (n.d.) Retrieved June 5, 2009 from <http://www.dol.gov/odep/pubs/fact/entrepreneurship.htm>.
- Kauffman Foundation, *Entrepreneurial Attitudes and Knowledge of Black Youth Study*, (n.d.) Retrieved June 5, 2009 from www.kauffman.org,
- Kauffman Foundation (2007), *Harris Survey on Youth Entrepreneurship*, Retrieved June 5, 2009 from <http://www.kauffman.org/entrepreneurship/harris-survey-on-youth-entrepreneurship.aspx>,
- Timmons, Jeffrey (2008). *New Venture Creation*, 8th Edition, McGraw Hill
- U. S. Census Bureau, *Survey of Business Owners - Characteristics of Business Owners: 2002*, (n.d.) Retrieved June 5, 2009 from <http://www.census.gov/econ/sbo/02/cbosof.html>.
- Wessels, P. L. (2004). Information technology and the education of professional accountants. *Meditari Accountancy Research*, 12(1), 219–234
- Willis, G. (2005, March), *Paying for College 5 Tips: Bringing College Costs within Reach*, Retrieved June 18, 2009 from http://money.cnn.com/2005/03/29/pf/saving/willis_tips/index.htm.
- Ying, Lowrey (April, 2007), *Minorities in Business: A Demographic Review of Minority Business Ownership*, Retrieved June 19, 2009 from <http://www.sba.gov/advo/research/minority.html>.

EGG-DROP EXERCISE REVISITED: AN IN-CLASS ENTREPRENEURSHIP EXERCISE

Diane M. Sullivan, University of Dayton

ABSTRACT

This article outlines a modification of the egg-drop exercise commonly used to teach engineering design and strategic choice. The variation of the exercise detailed focuses on relating concepts relevant to entrepreneurship. The exercise can be used in undergraduate and MBA-level entrepreneurship courses. Specifically, student teams are tasked with developing new innovative “vehicles” that must meet target market value propositions. The project finale tasks students with dropping their vehicle, with raw egg in tow, from a second-story drop. The context of the exercise challenges students to “launch” their new venture in an emerging industry. Throughout the exercise, students are faced with a number of issues relevant to entrepreneurship. Concepts highlighted include customer value propositions, creativity, new venture team competencies, resource accumulation and management, bootstrapping, industry structures, competitive intelligence, and networking. This article details the exercise, provides instructions for employing it in the classroom, offers debriefing suggestions, and provides an illustration of the dominant product design. Results from surveys completed by both undergraduate and MBA students who completed the exercise suggest that desired teaching objectives are achieved and that the students perceive the exercise to be an innovative and engaging in-class project.

INTRODUCTION

The number of entrepreneurship programs and entrepreneurship-related course offerings in universities and colleges has increased exponentially over the last 20 years (Heriot & Simpson, 2007; Plumy, et al., 2008). The first entrepreneurship course was offered in the 1940s with 188 students enrolling in the course (Katz, 2003). In 1970, a national survey of business schools reported that just 17 courses in entrepreneurship were offered (Henricks & Newton, 2003). Today, though, over 1,600 universities and colleges in the United States, alone, offer over 2,000 courses dedicated to the education of entrepreneurship (Katz, 2003).

Despite the increasing interest in studying and teaching entrepreneurship, as a scholarly field entrepreneurship is still relatively new (Fiet, 2001a; Heriot and Simpson, 2007). In addition, entrepreneurship as a discipline has often been contested as a domain which cannot be taught (Fiet, 2001a; Henricks & Newton, 2003). While this idea has been touted, the newly adopted and

dominate view is that entrepreneurship can be taught and that those receiving formal training are better equipped and more successful than those lacking such formal training (Cooper, Gimeno-Gascon & Woo, 1994; Fiet, 2001a; 2001b). Regardless, those tasked with teaching prospective entrepreneurs can attest to the fact that entrepreneurship students are a different audience than students of other domains. Entrepreneurs are thought to possess different characteristics relative to others, like managers, for example (Zhao & Seibert, 2006). Thus, entrepreneurship students present unique challenges to those charged with educating them (Fiet, 2001a; 2001b).

Students of entrepreneurship are often interested in more hands-on experiences that allow them a tactile experience relative to the concepts being taught. And whether it is the nature of the material or the students being taught, evidence of this emerges by the countless entrepreneurship programs offering hands-on experiences like launching companies, business plan competitions, managing angel investment funds, and so forth. While these activities, no doubt, provide enriching and unique experiences for students, a thorough understanding of the concepts involved to execute these activities must also be achieved. Thus, some number of more traditional pedagogical approaches such as lectures, in-class exercises, exams, and so forth are generally also integrated into entrepreneurship programs and course offerings in order to establish an appropriate theoretical foundation (Fiet, 2001a). But, how can the entrepreneurship instructor manage the challenge of engaging this unique student population while also relaying important concepts necessary for an appropriate theoretical understanding of entrepreneurship? This is a question with which I have wrestled for years as I have interacted with and taught undergraduate and graduate entrepreneurship students ranging from students from a large state university with a newly started entrepreneurship program to students from a small private university with a top-ranked entrepreneurship program. Although I do not propose to have the end-all-be-all answer to this question, I have developed an in-class exercise that has been well received by undergraduate and MBA entrepreneurship students and that is capable relaying numerous entrepreneurship course topics in a novel, tactile and engaging manner.

The purpose of this article is to detail this exercise, which is a modified version of the in-class egg-drop exercise that has been used within the business domain in business policy and strategy courses to teach the concept of strategic choice. Other courses have also used versions of the exercise to teach teamwork and engineering design (Warner, 2005). In the pages that follow, I will explain how the exercise is run within one course period, to what entrepreneurship concepts the exercise applies, and I will share some personal experiences and tips that I have developed over the years as I have refined this exercise. In addition to providing anecdotal evidence of the exercise's effectiveness through running the exercise in multiple levels of entrepreneurship courses, I also present data that were collected from an undergraduate entrepreneurship course and an MBA-level entrepreneurship course. Students from both courses completed the exercise and were subsequently asked to report their perceptions of the exercise in terms of relaying various learning objectives as well as their overall impressions of the exercise.

RUNNING THE EXERCISE

The exercise can be completed within class period time frames of varying lengths. I have effectively run the exercise in as few as 45-minutes and as many as 75-minutes. Thus, the time frames students have for completing various tasks can be modified slightly to help the exercise conform to various class period time frames. Appendix A provides time-related guidelines for courses that are 45-minutes in length and 75-minutes in length, as these are generally the standard time allotments for undergraduate courses.

The exercise is best applied within a survey-style entrepreneurship course that covers a broad array of entrepreneurial topics. In addition, as noted above, the exercise can be employed with an undergraduate or a graduate-level student audience. However, because the topics highlighted in the exercise are varied (and it should be noted that the instructor can emphasize or deemphasize any particular concept(s) per their course objectives), it is advisable that the exercise be run at the middle point of the semester or later. Students who have attended the course for some time will have been exposed to various entrepreneurial topics. As such, they will be better equipped to value and learn from the exercise.

Before beginning the exercise, students must be broken up into teams. Although the size and composition of the teams may vary, I have found that the project works particularly well with even numbered teams and teams of six or fewer students. In addition, if the course requires students to be in a team for other course-related projects, it is advisable that the students work in their pre-formed teams. In the survey courses that I teach, students have already formed teams within which they work throughout the semester. Within my courses, the timing of when the egg-drop exercise occurs is such that the “big” team project tasks are just beginning. I have found that, because of this, the egg-drop exercise is a particularly nice ice breaker and way to get all team members working together. In addition, unexpected strengths (and sometimes weaknesses) of various team members are also often highlighted during this exercise. This tends to create a balance between the team members as they move forward in the course and students often develop an appreciation for or sensitivity towards various team member competencies and weaknesses. This tendency often creates interactions which can be used as examples to illustrate the importance of characteristics for effective new venture teams that can be discussed during the debriefing period. This will be discussed in more detail later.

Once student teams have been formed, a copy of the exercise instructions are then distributed to each student in the course faced down. After the instructions have been distributed to all students, one delegate from each team should come to the front of the room to collect 1) a bag containing the materials used in the exercise (see Appendix B) and 2) one large raw egg. Once the teams have received their materials and egg, students may turn the instructions over and they should read along as the instructor reads the instructions aloud.

As explained in the instructions, there are several key points to which the students will need to pay special attention in order to successfully complete the exercise. While reading the instructions aloud, I try to verbally emphasize those points although often student teams fail to focus on the key points, which ultimately leads to a great learning experience and points that can be discussed during debriefing.

Specifically, the first and most important point students must focus on is that successful completion of the exercise requires that they meet the target market's value propositions. In most entrepreneurship survey courses it is emphasized that the product/service offering being sold by the venture must appeal to the target market. Assessing the congruence between the firm's offering and the customer's needs is often the first step in the establishing the feasibility of the product/service (cf., Barringer & Ireland, 2008). Countless examples of firms that missed the mark relative to achieving this congruence are regularly highlighted in entrepreneurship texts and courses. In addition videos, like *The Deep Dive* (ABC News, 1999) that highlights the new product development firm IDEO, illustrate the processes through which firms validate the products/services with their target market prior to solidifying them for mass market production. Further emphasizing the need for entrepreneurs to meet the target market's value considerations, research suggests high failure rates for new product innovations when they are not properly evaluated by appropriate target market participants (Klink & Athaide, 2006). As explained in the instructions, several excerpts highlight the importance of this point as follows:

... the egg does not break. ... the vehicle actually works. ... your team's recent assessment of the market's product perceptions (e.g., what they value), ... the design is aesthetically pleasing. ... this task requires technological capability, coordination, and creativity for successful completion. ...being able to effectively address the target market's value propositions is extremely important. At this point in the construction of your venture's opportunity, you know that the market values 1) a safe landing and 2) creativity. Addressing these market-level value propositions could help your venture gain sustainable market-potential for the foreseeable future and a more desirable network of resource providers.

In addition, to further emphasize the importance of meeting the target market's value propositions and to illustrate the point that what customers value changes over time, at about the half way mark in the exercise, the instructor interjects and informs the students of the following:

"Because your new venture team is very entrepreneurially savvy because of taking <insert course name here>, they realize that they must regularly monitor their target market's preferences. Your team's most recent assessment has alerted you to the fact that in addition to valuing a safe landing and vehicle creativity, the market now

also values the accuracy of the vehicle's landing. Consequently, at launch, the market will also assess how close to the center of a target the vehicle lands."

For courses 75-minutes in length, the following should also be added to the above passage:

"Because firms competing within the industry must now modify their firm's offerings that are under development to accommodate this, new, additional value proposition, new venture launch times in the industry have been delayed. Consequently, new venture teams now have an additional 15-minutes to develop their vehicles. The new launch will be <insert time here>."

The approach that I have taken to focus the student's attention to accuracy of landing is to print out an 8 ½ X 11" landscape oriented picture of my face (quite a desirable target to some of them, I'm sure!) that will be placed at the center of the landing area. While this target works well for me, instructors who are not comfortable with this can print out or draw a simple target symbol at which students can aim. Also, when this third value proposition is provided to the students, as the course time allotment allows, it is recommended that the instructor extend the time frame that students have to work on their vehicles. A 75-minute course can extend the time frame by about 15-minutes. A 45-minute course generally does not have additional time to allot. I have run the exercise without allotting extra time after the announcement of the third value consideration and the exercise has still worked well.

To reiterate, with regard to target market value propositions, there are three considerations that the teams must address: 1) safe landing, 2) vehicle creativity and 3) accuracy of landing on a predetermined target. It should be noted that relative weights of these value considerations are not provided to the teams. Regardless, teams nearly always assume that a safe landing is the most important, and therefore most heavily weighted, consideration. This occurs often to the extreme detriment of the other two value propositions. Although there is regular neglect of two value considerations, one team in the class usually manages to effectively address at least two considerations (safety and accuracy of landing, most often) and frequently that team will attempt a tangential effort to add some creative component to their vehicle (e.g., drawing, pasting interesting newspaper pictures, naming the vehicle, developing a story that the team tells before launch, etc.). As such, this lack of attention to equally weighted value considerations provides an interesting discussion point about the importance of meeting the target market's needs during debriefing.

The second, particularly, important point emphasized in the instructions is that "it is safe to assume that each competitor has *basically* the same resources from which to develop their vehicle." While it is true that all teams will have the same quantity of resources listed in the instructions, some resources vary slightly. Specifically, to constrain teams in terms of their abilities to be creative relative to the resources they possess, when assembling the bags certain materials vary slightly

across teams. Specifically, each materials bag contains two markers. The two markers within each bag should be the same color, although the colors of the markers across teams will vary. For example, one team will have a materials bag with two blue markers and another team will have a materials bag with two red markers and so forth. No two teams in the class will have the same color markers. The same material constrains can apply to the string that is provided to students. Generally, I use two different colors of string and correspond to the school's colors (crochet thread/floss works very well for this). Then, each bag only contains one of the two colors.

The purpose of restricting their resources in this way is multifold. The importance of resource accumulation and uniquely combining and using resources is important in entrepreneurship. The resource-based view and constructionist views of entrepreneurial resource environments suggest that it is the idiosyncratic resource environments that entrepreneurs construct that can lead to different capabilities and different competitive advantages (Baker & Nelson; 2005; Barney, 1991; Penrose, 1959). Thus, to reinforce the importance developing and/or acquiring resources that are valuable, rare, nonsubstitutable and inimitable for new ventures (Barney, 1991; Barringer & Ireland, 2008), constraining teams relative to the resources provided to them highlights the difficulties of uniquely meeting target market value propositions and obtaining a competitive advantage with commodity-type resources.

In addition, competitors are often sources of growth, sustainability and are also often important resource providers (Lechner & Dowling, 2003; Lechner, Dowling & Welpel, 2006). Particularly in early stages of venture development and for ventures developing in emerging industries, interfirm cooperation has been found to be important to successful venturing and for the development of innovations (Shan, Walker & Kogut, 1994). Moreover, direct relationships with competitors have been associated with start-ups more successfully realizing projects that might otherwise be unattainable for the start-ups by themselves (Lechner, et al., 2006). Thus, developing and maintaining network relationships with those outside of the organization, including competitors, can be important for new ventures. In sum, slightly varying the resources across teams is an effective way to illustrate to students the importance of resources, competitors and networking for entrepreneurial success.

After reading the instructions to students aloud, the teams will then be tasked with working on their vehicle construction for the remaining time until launch. To get a sense of various team interactions and team member competencies, while teams are working on the task, the instructor should walk around the classroom spending approximately equal time observing each team as they work. Research suggests that new ventures formed by teams are at an advantage relative to solo-founded ventures (Lechler, 2001). This is because new ventures benefit from the effective integration of heterogeneous skills and abilities of multiple individuals, which can increase the likelihood of new venture success (Gartner, 1985). In addition, research suggests that certain characteristics of new venture teams are particularly helpful for start-ups. For reasons mentioned above, heterogeneous teams are preferred to homogeneous teams as they increase the likelihood that

multiple viewpoints will be considered, ultimately leading to better decision making (Eisenhardt & Schoonhoven, 1990). Further, teams who have a level of familiarity with one another because of prior working experiences together perform better than teams who have not before worked together (Eisenhardt & Schoonhoven, 1990). Finally, research suggests that the size of the new venture team matters (Barringer & Ireland, 2008). Too large of a new venture team can often create difficulties in managing the various viewpoints and executing tasks in an efficient manner (Clarysse & Moray, 2004). The importance of these three new venture team characteristics often emerges as the student teams work on their vehicles. The instructor's observations related to the relative heterogeneity of competencies/experiences across team members, teamwork within teams who have worked together, and team size should be noted for discussion during debriefing.

While the teams are working on their vehicles and as the instructor visits each team for observation, the instructor will likely receive numerous questions. The most common questions relate to the rules and the materials that students are provided. Two important points must be noted relative to these types of questions. The instructions specify that there are industry standards to which all teams must comply. These are essentially industry regulations that characterize the emerging industry within which the teams are "launching" their venture. One of the industry standards is that teams are not to ask the market (e.g., instructor) any questions. Specifically, the instructions state "You cannot ask "the market" any questions about their product preferences or about any other issues related to this task. The rules are clearly specified here and must be followed." In addition, a list of the materials provided to teams is included in the instructions and teams "are *not* allowed to use the bag in which the materials came". These constraints are integrated into the exercise to allow teams some flexibility to network and/or collaborate with competitors for resources and ideas. In addition, the rules *do not* state that teams cannot use other materials that they possess or that are present around the classroom or building. Particularly savvy teams will realize this and use that flexibility to bootstrap for additional resources (e.g., materials) that might be helpful with completing the exercise. Most teams, however, will neglect this point and often find themselves at a resource disadvantage. These differences can be used to further reinforce of the importance that idiosyncratic resource environments play in developing a competitive advantage (Baker & Nelson; 2005; Barney, 1991; Penrose, 1959). In addition, bootstrapping is a regularly used method by entrepreneurs for lessening the dependence a new venture has on outsiders for debt or equity financing (Ebben & Johnson, 2006). Different methods of bootstrapping have been discussed as effective in helping a new venture accumulate financing and other resources. For example, Winborg and Landstrom (2001) identified owner resources and sharing or borrowing resources via relationships with other firms, as two effective bootstrapping methods. The extent to which teams seek assistance from other teams, use other materials that they individually possess, or scour the building or classroom for other supplies can provide nice instances to illustrate learning points related to importance of resource accumulation and bootstrapping.

When the time limit for construction has been reached, it is important that all teams cease working on their vehicles. The entire class must then be escorted to a second-story, minimum, open area where they can safely drop their vehicles. Although I have never encountered any difficulties in receiving approval for this exercise to be completed in the building's common areas, it is recommended that prior to conducting the exercise the instructor receive permission from the appropriate administrative heads in the building where the launch will take place. I have found that the best areas are an open stairwell or balcony in a common location. This always attracts on-lookers which makes for an especially fun and interactive experience. However, other areas that have also worked are outdoor balcony areas. The key is really just to locate a safe area where the vehicles can be safely dropped without harming anyone or damaging any physical property.

The methods I use for determining the order of launch is simply randomly selecting the team names/numbers or having teams draw launch orders (e.g., 1st, 2nd, etc.). Then, each team goes in the order selected and drops their vehicles (e.g., "launches their new venture") over the landing area. As the vehicles land, use a marker to write the team name/number on the impact location so as to best assess the accuracy of landing. Once a team has launched their vehicle, they must remove it from the landing area so the next team has a clear area above which to launch. As each vehicle launches, the market (e.g., the instructor) should comment on various aspects of the launch dealing with the target market value propositions. It is generally easiest to begin by assessing the creativity of the vehicle by examining the vehicle's design and evaluating the quality of the in-air flight (e.g., was the flight path direct and concise, did the vehicle fly all over the place, did the vehicle fly near audience members, etc.). The safety and accuracy of landing are generally self-explanatory criteria to the students—did the egg break or crack and how closely did it land to the center of the target? After all vehicles have been launched, a clear winner generally emerges and I announce that to the class.

While it is not entirely necessary to provide a prize to the winning team, I generally provide a modest token to the winning team's members. The prizes awarded to the winning team can vary from extra credit points to candy and so forth, but I never tell them what they are competing for (except for a larger share in the market as stated in the instructions) until after the launch is complete. Upon announcing the winner, the class should clean up the landing area and any remaining materials at the launch site and reconvene in the classroom for debriefing.

DEBRIEFING THE STUDENTS

As discussed above, after launch and cleanup, the class should reconvene to the classroom for debriefing. Above I have outlined many of the discussion points that correspond to entrepreneurial topics that are illustrated by the exercise. In this section I provide several questions that can be used to prompt and lead the discussions dealing with the eight main topics highlighted

in the exercise. Further, as applicable, additional information that provides insight into the administration of the exercise and to the debriefing is described.

1. Target Market Value Propositions

Much of the discussion above has focused on instilling the importance of meeting the target market's value propositions. I will not reiterate that discussion here. Instead, the following is a list of questions that can help to facilitate a discussion about these points

What were the target market's value propositions that the teams were trying to meet with their vehicle designs? What was the most important target market value consideration? Based on our market research did we learn how the market places value on each value proposition? Did teams place a particular emphasis on one or more of the value propositions? Why? Why not? In the middle of the exercise, the teams learned of a new value proposition. Did any teams change their product design after learning this new market information? Why? Why not? When entrepreneurs develop firm offerings (e.g., their products and/or services), do they ever need to change the nature of the offerings?

2. New Venture Teams

Before providing discussion questions, a few comments on frequent teamwork experiences are worthwhile. Generally, there will be one or two team members who have more experience with construction-types of tasks like this one. These students are usually very instrumental in the development of the physical vehicle. However, they often lack a sense of vehicle creativity. Other team members are often more creativity-oriented and their competencies become more instrumental for executing the creativity portions of the task. When team members work well together, both the construction and creativity competencies emerge in the vehicle designs, regardless of whether any team members have worked on a construction task similar to this one before or not. Often, though, one task competency (along with the team member(s) with that competency) will emerge as dominant over the others. This regularly occurs to the detriment of the other competencies. When this happens, during debriefing it is effective to ask these teams to discuss what happened during the construction of their vehicle. If team members are hesitant to elaborate, providing them examples of what was observed and linking it to the importance of constructing a heterogeneous new venture team that works well together is an effective way to focus a discussion on the characteristics of effective new venture teams.

Questions that help generate discussion relative to these points include: How did the teams work through designing and constructing the vehicles? What roles did different team members play in the design and construction of the vehicle? Did anyone take on a leadership role in the team and why? What skills did the team's members bring to the table? Were all of those skills used? If yes,

discuss. If no, why not? Was it important to have a heterogeneous or a homogeneous team when completing this exercise? If you were going to do the exercise over again, what would the team do differently? What could have made the team more effective overall? If you were forming your “dream team” to complete this exercise, what would it look like (e.g., how many people, what types of skills, competencies, etc.)? How can we relate the team component of this exercise to the development and management of a new venture? What do entrepreneurs need to consider when they are developing a new venture team? What are the parallels between what entrepreneurs need to consider when developing a new venture team and what we did in completing this exercise?

3. Creativity

Entrepreneurship is an inherently creative act (Shane, 2003). Consequently, most entrepreneurship courses integrate some discussion of the concept of creativity. Often, this discussion corresponds to the portion of the course dedicated to opportunity recognition (Barringer & Ireland, 2008; Katz & Green, 2009). Students are faced with the concept of creativity during multiple aspects of the exercise. First, one of the target market’s value propositions is that the vehicle must be creative. Student teams represent a new venture team that is going through the process of organizing their venture (and its offering) for launch. As a part of this, they must think creatively as they work on tasks that are mostly new to them. Not only must this creativity emerge in the final vehicle design, but teams must be creative with the use of the raw materials that they are provided. Finally, the context of the exercise—a new venture team that is launching a business within an emerging industry—puts emphasis on the importance of creativity within certain industries. As an emerging industry, the industry is characterized by need for creativity and innovativeness. Thus, an inherent quality of the new ventures competing within the industry is that they must be capable of working within a creative environment.

The following questions are helpful in facilitating a discussion on creativity and entrepreneurship. As previously discussed, one of the target market’s value propositions was that the vehicle must be creative. What did the team do (or not do) to address this value proposition? Was the team tasked with being especially creative during the exercise? Explain. What role do you think creativity plays for entrepreneurs, in general? What role do you think creativity plays for entrepreneurs launching firms within emerging industries? For what activities do entrepreneurs need to be especially creative? Is creativity always helpful for entrepreneurs? Explain.

4. Resource Accumulation and Management

One of the most important issues entrepreneurs must be concerned with through multiple stages of venture development is the accumulation and management of resources (Baker & Nelson, 2005; Barney, 1991; Penrose, 1959). Most entrepreneurship courses will spend considerable time

discussing the importance of resources—both novel ways of accumulating them (e.g., bootstrapping, which will be discussed next) and the character of resources in terms of generating a competitive advantage (e.g., valuable, rare, inimitable, nonsubstitutable). These topics regularly come during discussions of product/service feasibility studies as well as in lessons dedicated to business model development. As described in detail above, the resource accumulation and management challenge is also highlighted in this exercise.

The following questions are helpful in generating a discussion of issues associated with resource accumulation and resource heterogeneity. What resources did the teams possess? Was there anything notable about the resources that each team had? Given what you know about entrepreneurs developing a competitive advantage, did the resources that your team had allow your team to develop a competitive advantage? Why or why not? Did any teams do anything to help them to accumulate resources that were different from their competitors? Were those resources valuable, rare, inimitable and nonsubstitutable? Explain. Why are those characteristics (valuable, rare, inimitable and nonsubstitutable) of resources important? What about managing the resources that your team possessed—did any teams have any difficulties managing their resources? Explain. Did they run out of any resources or have excess resources? What did teams do in handling resources scarcity and/or excess resources? Given what you have experienced in the exercise, what roles do think resources play for entrepreneurs?

5. Bootstrapping

The concept of bootstrapping is regularly discussed in entrepreneurship courses as a way of encouraging entrepreneurs to be creative as they seek resource accumulation. The concept applies to the accumulation of both monetary and physical resources (Ebben & Johnson, 2006; Winborg & Landstrom, 2001). Because student teams are restricted in the materials provided to them, teams that regularly excel in the exercise will use a form of bootstrapping to accumulate additional resources for their teams. Of course, every entrepreneur needs a thorough understanding of the industry regulations and laws with which they must comply before engaging in various resource accumulation activities (e.g., EPA regulations, quality or safety standards by the FDA, technology standards, etc.). Within the exercise students are provided with the rules of the game (e.g., standards of the industry) with which they must comply. With the exception of the bag that their materials came in, no other resources are precluded from use within the industry. However, teams must be creative in their resource accumulation so that they can obtain and use resources that will put them at an advantage relative to competitors. Few teams will realize the potential for this bootstrapping. However, those that do often excel compared to their competitors.

To facilitate a discussion of bootstrapping, the following questions are helpful. What resources did the teams have to work with as they developed their venture offerings? Were all of these resources the same? Did the teams have access to any other resources aside from those that

were provided in the materials bag? Could the team have accumulated any other resources and used them? Did the standards of the industry stipulate that any resources could not be used? Aside from the bag that the *materials* came in, did the standards of the industry specify that any resources could not be used? How can an entrepreneur's resources help them to obtain a competitive advantage? Often entrepreneurs are constrained relative to the resources that they possess during early stages of venture development. What can entrepreneurs do to put them in a better resource position? Within the context of the exercise, what could the team have done in terms of their resources to help them obtain a competitive advantage over the other teams? How could the teams participating in this exercise have used bootstrapping to help them improve their resource positions relative to the other teams?

6. Competitors

Entrepreneurs must contend with a host of issues related to their competitors. An error entrepreneurs often make regarding competitors is not acknowledging that they have any and/or that they can learn from them (Barringer & Ireland, 2008). In emphasizing this error, Guy Kawasaki, famed venture capitalist and columnist for *Entrepreneur Magazine*, has noted that if an entrepreneur does not think that they have competitors then they do not know how to use Google (Kawasaki, 2006). Studying and understanding one's competitors and their offerings can be very useful in terms of obtaining a second-mover advantage and for differentiation (Shamsie, Phelps & Kuperman, 2004). Through the course of the exercise, some student teams come to realize this, particularly as the vehicles start coming together. When this realization sets in, there will usually be a team or two that will watch the construction and design of other team's vehicles. Often, this results in modifications to the team's design based on what they have learned from gathering this "competitive intelligence". In addition, as discussed above, competitors are not always adversaries and can instead be important resource providers, particularly for early-stage ventures and when competing in emerging industries (Lechner & Dowling, 2003; Lechner, et al., 2006; Shan, Walker & Kogut, 1994). Teams picking up on the nuance of the slight resource differences in materials provided to teams will sometimes barter with their competitors for use of their varied resources. When successful, the teams who have exchanged resources typically develop more aesthetically pleasing and creative vehicle designs via additional vehicle colors and string.

The following questions can help to engage students in discussion of these topics after exercise completion. Did any teams conduct any competitive intelligence during the vehicle design and construction period? What was observed/learned? What about during the launch period—did any teams learn launching strategies from watching their competitors? For teams that conducted competitive intelligence, did that strengthen your team's competitiveness? Were there any differences in materials provided across teams? What were the differences? Did any teams work with any of their competitors during the exercise? Did any teams exchange or barter for use of

another team's markers or string? What about any other resources? For teams that worked with their competitors, did that strengthen your team's competitiveness?

7. Networking

Networking is thought to be a key for successful entrepreneurship (Allen, 2006; Barringer & Ireland, 2008; Burt, 1992; Granovetter, 1973; Katz & Green, 2007). Although somewhat of a cursory lesson that can be relayed through the egg-drop exercise, the importance of networking in entrepreneurship can be emphasized. For example, when student teams interact with their competitors to obtain competitive intelligence or access to resources, they are networking with them. In addition, teams that attempt bootstrapping via searching the building for materials regularly engage in social networking with individuals that are in the common areas. Finally, during the venture launch period, there are often on-lookers with whom the student teams network. All of these instances can be used to highlight the role of networking in entrepreneurship.

Questions to ask students include: Did you engage in any networking during the course of the exercise? Explain. What about networking with competitors? Did any teams attempt to accumulate any resources outside of the classroom? Did you interact with anyone while obtaining those resources? During the launch period, did any student teams network with any individuals that were not in the class? What about with any members in the class who were not on your team? How can you relate the social networking that you did in this exercise to the role that networking plays for entrepreneurs? Pretend that the launch period was a trade association meeting or industry conference. As a representative of your new venture, how might the social networking that you did help or hinder you?

8. Industry Structures

In addition to the above-discussed topics, the egg-drop exercise illustrates the concept of industry structures and lifecycles. As highlighted in the instructions, the teams are launching a new venture within an emerging industry—one characterized by high levels of dynamism, uncertainty and that is generally developed due to new or changing technology (Barringer & Ireland, 2008). Firms that are competing in these innovative industries must be aware of and responsive to changes in technology and to the competitive environment. This is because firms competing within these industries, often termed high-impact firms, are thought to be the true engines of economic development and growth (e.g., innovation, job creation, higher employment wages, and larger regional tax bases) (Acs, Parsons & Tracy, 2008; Audretsch, 2007). Leading a discussion about these ideas can be fruitful in terms of framing the importance of emerging industries, the importance of innovation, and terms of comparing and contrasting an emerging industry structure relative to others (e.g., mature, declining, etc.). Further, when entrepreneurs are developing their business

models, they must be aware of the characteristics of the industry within which they will compete. The business model for a firm competing within a new, highly innovative, emerging industry will likely be quite different from the business model of a firm that will be competing within a mature industry.

A series of questions that can help facilitate this discussion is as follows: Within what type of industry (e.g., industry structure) were the firms launched? What are the characteristics of that industry type? What are the important activities (e.g., value chain) entrepreneurs must stay focused on when their firms are competing within an emerging industry? Why are emerging industries important? How does this industry structure vary when compared to other industry structures? What would an entrepreneur do differently if they were launching a business in an emerging industry versus another industry type <insert other industry type here> (e.g., mature, fragmented, declining, etc.)? What key differences would you expect in a business model for a firm competing within an emerging industry versus a <insert other industry type here> (e.g., mature, fragmented, declining, etc.)?

OTHER INSTRUCTOR NOTES

In addition to the materials used by the student teams, I have found that the instructor should come prepared with a few supplies of their own. First, it is advisable that one additional supply bag is assembled in case any teams are shorted supplies in their materials bag or in case any materials wind up being faulty (e.g., the bottle of glue is dried up, the scissors do not work, etc.). Second, it is advisable to have one additional raw egg on hand per class. While it has infrequently occurred, occasionally a team will break their egg prior to launch. In these cases, the team is disqualified from “competing in industry” (e.g., I usually tell them that their firm violated EPA guidelines and their business launch is been substantially delayed relative to their competitors). Thus, teams who break their egg prior to launch are unable to compete for the prize. However, to keep these teams engaged in the class, they are still allowed to launch their vehicle with the rest of the class using the spare egg, but they cannot qualify for a share of the market (or a prize). Finally, and probably more importantly, it is very important that the instructor bring two trash bags, a newspaper, a roll of paper towels and some sort of antibacterial cleaning spray or wipes. The newspaper will be laid out over the surface area below where the vehicles will be launched. Because many vehicles will have some sort of parachute attachment, the vehicles will often veer quite off track, so be liberal in the area that is covered (particularly if the launch occurs indoors). The trash bags, paper towels and cleaning wipes are self explanatory—any vehicles that do not safely fly their raw eggs to the ground, will entail a bit of a mess that needs to be cleaned. A note on this, however, is that while there is usually at least one crash and therefore there are broken eggs, the mess is not generally substantial or insurmountable. However, for sanitary purposes particularly for indoor launches, it is advisable to bring the cleaning supplies as noted above.

Additional discussion is also needed regarding the egg vehicle designs. Specifically, a dominant vehicle design in terms of a safe and targeted landing has emerged over time as a consequence of running the exercise. The dominant vehicle design is illustrated in Figure 1.

As illustrated in Figure 1, several features of the dominant vehicle design are noteworthy. The first feature is that the vehicle works best without any type of parachute device. When launching the vehicle with a parachute the vehicle will veer significantly off target, which is a direct violation of one of the three market value propositions that the teams are trying to appease. In addition, upon landing, the weight and pull of the parachute generally tips the vehicle over causing the egg to completely break or crack. As a result, teams employing a parachute generally miss (at least) two of the three value propositions their target market desires. This makes for a very nice discussion point in class when debriefing the students particularly because at the middle point of the exercise teams are given a third value proposition that should help to focus their attention on these aspects of the design. Interestingly, I have found that in many cases teams completely ignore the third value proposition that they are given.

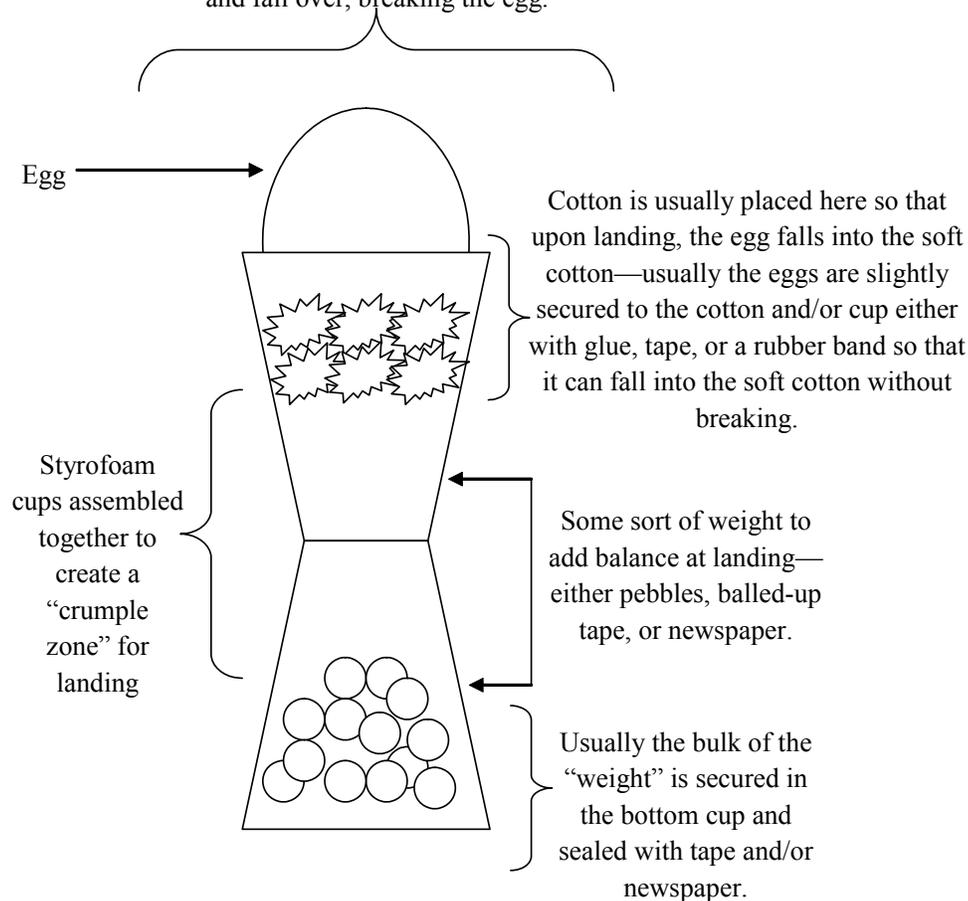
In fact, as noted above teams tend to only focus on (and most often over think) the value consideration dealing with the safe landing. Vehicle creativity is almost always an afterthought and a targeted landing is regularly ignored. In addition, despite the fact that teams are given a third value consideration at the half way point in the exercise, they nearly always hesitate to change their design or reconsider their vehicle design (which almost always includes a parachute). This hesitation provides an interesting discussion point about how often new venture teams become so focused on executing the concept that they began with that they completely ignore changes in the external environment that may impact their firm's operations. I regularly refer students to the Iridium Satellite phone example, a company infamous for their faux pas of ignoring changes in the industry, with competitors, and market preferences (e.g., while Iridium focused on developing satellite phone technology, traditional cell phone providers and manufacturers entered and overtook the marketplace—see Barringer & Ireland, 2008, for a detailed account of this example).

A second feature of the vehicle, related to its safe and targeted landing, is that the bottom of the vehicle should be weighted in some way. The vehicle tipping over is the most common cause of the egg breaking upon landing. Weighting the vehicle in this way keeps the vehicle moving in a consistent direction toward the designated target and upon landing the centralized weight generally prevents the vehicle from tipping.

A third and final noteworthy feature of the vehicle's physical design is that the egg is positioned in the vehicle such that upon landing (which will be quite a hard one) the egg drops down into a cushioned area in the vehicle. While various cushioning materials have been used successfully (e.g., newspaper, balled up tape, cotton balls, rubber bands, etc.) cotton balls tend to be the most effective and they are often placed on top of another material like newspaper so that the egg will be at least half exposed, per the instructions.

Figure 1
Egg Drop Exercise
Dominant Design

This “dominant design” generally works best without a parachute. Because the parachute hinders the straight landing (e.g., landing on the target, which the market values) and the vehicle will generally veer off course and fall over, breaking the egg.



Regarding the creativity of the vehicle, a subjective assessment of the vehicle’s creativity is made by the market (e.g., the instructor). Organizational creativity researchers define creativity as a creative idea or product that is both novel and useful (Amabile, 1988; Ford, 1996; George & Zhou, 2001; Litchfield, 2008; Shalley, 1991; Shalley, Zhou & Oldham, 2004; Zhou, 2003). Novelty

reflects the statistical infrequency of the idea/product and usefulness refers to how valuable, effective or appropriate the idea/product is for its intended purpose. Most entrepreneurship texts (see for example, Barringer & Ireland, 2008; Katz & Green, 2009) emphasize the importance of creativity for the opportunity recognition process. Thus, when students ignore this value consideration, it is a nice segway into a discussion of the importance of creativity for successful entrepreneuring.

Teams who perform the best on the exercise usually employ a division of labor by specialization. These teams generally begin with an initial vehicle design plan and then designate roles across team members. When doing this, some members are responsible for preparing materials for assembly (e.g., cutting materials, prepping complementary materials like glue and tape for use), others are charged with developing a creative theme and decorating the vehicle and/or developing the story that will be announced to the market at launch of the vehicle (for example, at the University of Dayton in Dayton, Ohio—home of the Wright Brothers—a team of students developed their vehicle named and themed the Kitty Hawk after the city where the Wright Brother's first powered flight occurred), and finally the last set of students actually assemble the vehicle.

STUDENT FEEDBACK

I have worked on modifying this exercise over a number of years so as best to relay the entrepreneurial topics described above. Over time, I have used informal feedback received and my professional judgment to modify the exercise as necessary. After running a specific version of the exercise over multiple semesters, a particularly desirable derivation emerged. That derivation was described above. To assess whether students perceived they learned the relevant topics and to survey their general perceptions of the exercise, students from two courses that completed the exercise were asked to participate in a survey. Specifically, after completing the exercise, undergraduate students majoring in entrepreneurship that were enrolled in New Venture Creation (e.g., survey course in entrepreneurship) were asked to fill out a survey. In addition, MBA students taking New Venture Management (e.g., graduate-level survey course in entrepreneurship) also completed the exercise and upon doing so were asked to participate in the same survey.

Following the exercise completion, students from both classes were sent an email asking them to participate in a confidential online survey aimed at gathering feedback on the exercise (e.g. what they learned, their general impressions of the exercise, and whether they would recommend the exercise for subsequent entrepreneurship course offerings). The survey was administered online to assure anonymity and accuracy of responses. The survey contained numerous questions to assess student's perceptions of learning outcomes, overall perceptions, and recommendations for future use. All survey questions were Likert-type items anchored on a 5-point scale (1 = strongly disagree; 5 = strongly agree). In total, $n = 23$ undergraduate students completed the survey (53.5%) and $n = 13$ MBA students completed the survey (92.8%). The average age of the undergraduate students

was 21.08 years and 30.5 for the MBA students. In addition, in the undergraduate sample there were 4 female respondents and 19 male respondents. Although this gender distribution may seem somewhat skewed, only 19% of the entire undergraduate class was composed of females. Thus, the distribution of the undergraduate survey respondents is consistent with the gender distribution in the course. In the MBA sample there were 3 females, 9 males, and 1 person did not report their gender. The survey results are presented in Table 1.

Question	Undergraduate Student Mean	Undergraduate Student SD	MBA Student Mean	MBA Student SD
1. In developing our egg vehicle, our team tried to meet the three value propositions important to our target market (e.g., vehicle creativity, vehicle accuracy of landing on a target, and the vehicle could actually work—be launched).	4.30	0.87	4.65	0.47
2. This exercise helped me to understand the importance of addressing the needs/desires of target market.	4.39	0.49	4.02	0.41
3. This exercise helped me to understand the importance of meeting the target market's value propositions.	4.14	0.69	4.17	0.55
4. This context helped me to understand the importance of entrepreneurs being innovative when entering into an emerging industry.	4.44	0.58	4.15	0.68
5. This context helped me to understand the importance of entrepreneurs pursuing technology leader opportunities when entering into an emerging industry.	4.22	0.51	4.01	0.70
6. As a result of completing this exercise, I better understand the importance of conducting competitive intelligence.	4.13	0.69	3.77	1.09
7. As a result of completing the exercise, I better understand the importance of networking for entrepreneurs.	4.17	0.57	3.85	0.80
8. This exercise helped me to understand the importance of acquiring diverse resources relative to competitors in entrepreneurial endeavors.	4.17	0.71	3.62	0.86
9. This exercise helped me to understand the importance of acquiring diverse resources for entrepreneurial endeavors.	4.41	0.57	4.15	0.55
10. This exercise helped me to understand the importance of having effective teams in entrepreneurship.	4.68	0.46	4.43	0.49
11. This exercise helped me to understand the importance of good teamwork.	4.65	0.48	4.35	0.74
12. This exercise helped me to understand the importance of creativity in entrepreneurship.	4.52	0.59	4.42	0.75

Table 1: Student Feedback Descriptive Statistics

Question		Undergraduate Student Mean	Undergraduate Student SD	MBA Student Mean	MBA Student SD
13.	I would recommend using this exercise in future entrepreneurship course offerings.	4.65	0.57	4.07	0.86
14.	The egg-drop exercise was a good exercise for learning about entrepreneurial topics.	4.39	0.58	4.00	0.70
15.	The egg-drop exercise was a novel way to teach entrepreneurial topics.	4.32	0.69	4.10	0.64
16.	I think that other students could benefit from completing this exercise.	4.45	0.58	3.85	1.06
17.	I enjoyed completing this exercise in the course.	4.74	0.44	4.00	0.91

The first set of questions asked students to report on the exercise's effectiveness in relaying the importance of meeting the target market's value propositions. The first question asked students to indicate the extent to which their team tried to meet the three value propositions important to their target market as they developed their vehicle. The mean evaluation from the undergraduate students was 4.30 ($sd = .87$) and for the MBA students 4.65 ($sd = .47$). To further assess student perceptions regarding the exercise's effectiveness in communicating concepts related to consumer's value propositions, participants responded to two additional questions regarding addressing the needs/desires of a target market and the importance of meeting the target market's value propositions. As illustrated in Table 1, questions two and three, the mean evaluations from the undergraduate students were 4.39 ($sd = .49$) and 4.14 ($sd = .69$) and for the MBA students 4.02 ($sd = .41$) and 4.17 ($sd = .55$), respectively. These results suggest that both undergraduate and graduate entrepreneurship students perceived the egg-drop exercise as effective in teaching lessons related to target market value propositions.

The second set of questions asked students to evaluate the exercise's effectiveness in teaching about industry structures. The first question asked participants to evaluate if the context of the exercise helped them to understand the importance of entrepreneurs being innovative when entering into an emerging market. The mean evaluation from the undergraduate student sample was 4.44 ($sd = .58$) and the mean evaluation from the MBA student sample was 4.15 ($sd = .68$). A second question asked students if the context helped them to understand the importance of entrepreneurs pursuing innovative opportunities when entering into an emerging industry. The mean assessment from the undergraduate student sample was 4.22 ($sd = .51$) and the mean assessment from the MBA student sample was 4.01 ($sd = .70$). Overall, these results suggest that students

perceive the exercise as one that can effectively teach concepts related to industry structure and the importance of innovation.

The third set of questions asked students to assess the exercise's effectiveness in relaying concepts associated with competitive intelligence and networking. The first item asked if the exercise helped them to understand the importance of conducting competitive intelligence. Undergraduate student's mean response was 4.13 ($sd = .69$) and the MBA student's mean response was 3.77 ($sd = 1.09$). Question 7 asked students to respond about whether the exercise helped them understand the importance of networking for entrepreneurs. Undergraduate student's mean response was 4.17 ($sd = .57$) and the MBA student's mean response was 3.85 ($sd = .80$). Thus, both samples perceived the exercise as effective for communicating these concepts. However, the undergraduate students' evaluations suggest that they perceived the exercise as slightly more effective for communicating concepts associated with competitive intelligence and networking than did the MBA students.

The next set of questions asked students to assess the exercise's effectiveness in communicating concepts related to new venture teams, resource accumulation, and creativity. The students responded to an item asking if the exercise helped them to understand the importance of acquiring diverse resources relative to competitors in entrepreneurial endeavors. The mean assessment from the undergraduate student sample was 4.17 ($sd = .71$) and the mean assessment from the MBA student sample was 3.62 ($sd = .86$). Question 9 asked students if the exercise helped with understanding the importance of acquiring diverse resources (in general) for entrepreneurial endeavors. The undergraduates mean response was 4.41 ($sd = .57$) and the MBA student's mean response was 4.15 ($sd = .55$). Regarding new venture teams, participants were asked to respond to two items (questions 10-11) regarding the importance of having effective teams in entrepreneurship and the importance of good teamwork. The mean evaluations from the undergraduate students were 4.68 ($sd = .46$) and 4.65 ($sd = .48$) and for the MBA students 4.43 ($sd = .49$) and 4.35 ($sd = .74$), respectively. Finally, participants responded to an item asking if the exercise helped them to understand the importance of creativity in entrepreneurship. Undergraduate students mean response was 4.52 ($sd = .59$) and the MBA students mean response was 4.42 ($sd = .75$).

The final set of questions asked students their general impressions of the exercise as well as whether they would recommend using the exercise in subsequent entrepreneurship course offerings. The results of these items correspond questions 13-17 in Table 1. Specifically, the mean evaluations of the undergraduate students for these items were 4.65 ($sd = .57$), 4.39 ($sd = .58$), 4.32 ($sd = .69$), 4.45 ($sd = .58$), and 4.74 ($sd = .44$), respectively. The mean evaluations of the MBA students for these items were 4.07 ($sd = .86$), 4.00 ($sd = .70$), 4.10 ($sd = .64$), 3.85 ($sd = 1.06$), and 4.00 ($sd = .91$), respectively.

The results of the feedback received from both undergraduate and MBA entrepreneurship students who completed the exercise suggest that, overall, the exercise is perceived as being effective for communicating the desired entrepreneurial topics. In addition, results strongly suggest

that the students enjoyed completing the exercise, found the exercise to be appropriate to and effective for a course on entrepreneurship, and would recommend the exercise for subsequent courses in entrepreneurship.

CONCLUSION

Entrepreneurship students are a challenging audience for those charged with educating them (Fiet, 2001a; 2001b). The purpose of this paper was to describe an engaging in-class exercise that communicates several entrepreneurial topics. Specifically, the entrepreneurship egg-drop exercise provides a teaching tool that can communicate lessons associated with customer value propositions, creativity, new venture team competencies, resource accumulation and management, bootstrapping, industry structures, competitive intelligence, and networking. Each topic can be emphasized or deemphasized relative to the instructor's goals for the course.

Throughout the paper, the exercise was described and instructions for running it were provided. Teaching notes and debriefing instructions were also detailed. Data were collected from both undergraduate and MBA-level entrepreneurship students regarding their perceptions of relevant learning outcomes associated with the exercise. Overall, the feedback suggests that for both undergraduate and graduate students, learning outcomes are achieved, students enjoyed completing the exercise, and student would recommend using the exercise in future entrepreneurship courses.

In conclusion, the results from the student feedback I have collected coupled with my experiences in developing and facilitating this exercise over a number of years suggest that the egg-drop exercise is a fun, challenging, novel and effective method for engaging the entrepreneurship student audience. It is one that I shall continue to employing in my entrepreneurship courses in the future and it is my hope that this article might inspire others to do the same.

REFERENCES

- ABC News (1999). *The Deep Dive* [Nightline]. Princeton: Films for the Humanities and Sciences.
- Acs, Z., W. Parsons and T. Spencer (2008). High-impact firms: Gazelles revisited. Office of Advocacy, U.S. Small Business Administration.
- Allen, J.R. (2006). *Launching New Ventures: An Entrepreneurial Approach*. Houghton Mifflin Company, Boston.
- Amabile, T.M. (1988). A Model of Creativity and Innovation in Organizations. In B. Staw & L.L. Cummings [Eds.], *Research in Organizational Behavior*, 10, 123-167. Greenwich, CT: JAI.
- Audretsch, D.B. (2007). *The Entrepreneurial Society*. New York, NY: Oxford University Press.
- Baker, T. & R.E. Nelson (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly*, 50(3), 329-366.

- Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Barringer, B.R. & R.D. Ireland (2008). *Entrepreneurship: Successfully Launching New Ventures* (2nd ed). Pearson Prentice Hall, New Jersey.
- Burt, R. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.
- Clarysse, B. & N. Moray (2004). A process study of entrepreneurial team formation: The case of a research-based spin-off. *Journal of Business Venturing*, 19(1), 55-79.
- Cooper, A.C., F.J. Gimeno-Gascon & C.Y. Woo (1994). Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing*, 9(5), 371-395.
- Ebben, J. & A. Johnson (2006). Bootstrapping in small firms: An empirical analysis of change over time. *Journal of Business Venturing*, 21(6), 851-865.
- Eisenhardt, K.M. & C.B. Schoonhoven (1990). Organizational growth: Linking founding team, strategy, environment, and growth among U.S. semiconductor ventures 1978-1988, *Administrative Science Quarterly*, 35(1), 504-529.
- Fiet, J.O. (2001a). The theoretical side of teaching entrepreneurship. *Journal of Business Venturing*, 16(1), 1-24.
- Fiet, J.O. (2001b). The pedagogical side of teaching entrepreneurship. *Journal of Business Venturing*, 16(2), 101-118.
- Ford, C.M. (1996). A theory of individual creative action in multiple social domains. *Academy of Management Review*, 21(4), 1112-1142.
- Gartner, W.B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *Academy of Management Review*, 10(4), 696-706.
- George, J.M. & J. Zhou (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, 86(3), 513-524.
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360-1380.
- Henricks, M. & D. Newton (2003). Can entrepreneurship be taught? *Entrepreneur Magazine*, April 2003. Retrieved August 3, 2009, from <http://www.entrepreneur.com/magazine/entrepreneur/2003/april/60244.html>.
- Heriot, K.C. & L. Simpson (2007). Establishing a campus-wide entrepreneurial program in five years: A case study. *Journal of Entrepreneurship Education*, 10, 25-41.
- Katz, J.A. (2003). The chronology and intellectual trajectory of American entrepreneurship education 1876-1999. *Journal of Business Venturing*, 18(2), 283-300.
- Katz, J.A. & R.P. Green (2007). *Entrepreneurial Small Business*. McGraw-Hill Irwin, Boston.
- Katz, J.A. & R.P. Green (2009). *Entrepreneurial Small Business*. McGraw-Hill Irwin, Boston.

-
- Kawasaki, G. (2006). The top ten lies of entrepreneurs. Retrieved August 4, 2009, from http://blog.guykawasaki.com/2006/01/the_top_ten_lie_1.html
- Klink, R.R. & G.A. Athaide (2006). An illustration of potential sources of concept-test error. *Journal of Product Innovation Management*, 23, 359-370.
- Lechler, T. (2001). Social interaction: A determinant of entrepreneurial team venture success. *Small Business Economics*, 16(4), 263-278.
- Lechner, C. & M. Dowling (2003). Firm networks: External relationships as sources for the growth and competitiveness of entrepreneurial firms. *Entrepreneurship & Regional Development*, 15(1), 1-26.
- Lechner, C., M. Dowling, & I. Welpel (2006). Firm networks and firm development: The role of the relational mix. *Journal of Business Venturing*, 21(4), 514-540.
- Litchfield, R.C. (2008). Brainstorming reconsidered: A goal-based view. *Academy of Management Review*, 33(3), 649-668.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. New York, NY: Wiley.
- Plumly, Jr. L.W., L.L. Marshall, J. Eastman, R. Iyer, K.L Stanley & J. Boatwright (2008). Developing entrepreneurial competencies: A student business. *Journal of Entrepreneurship Education*, 11, 17-28.
- Shalley, C.E. (1991). Effects of productivity goals, creativity goals, and personal discretion on individual creativity. *Journal of Applied Psychology*, 76(2), 179-185.
- Shalley, C.E., J. Zhou & G.R. Oldham (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management*, 30(6), 933-958.
- Shamsie, J., C. Phelps & J. Kuperman (2004). Better late than never: A study of late entrants in household electrical equipment. *Strategic Management Journal*, 25 (1), 69-84.
- Shan, W., G. Walker & B. Kogut (1994). Interfirm cooperation and startup innovation in the biotechnology industry. *Strategic Management Journal*, 15(5), 387-94.
- Shane, S. (2003). *A general theory of entrepreneurship*. Cheltenham, UK: Edward Elgar.
- Warner, A.G. (2005). An egg-centric approach to teaching strategic types: Adapting a classic exercise. *Journal of Management Education*, 29(4), 583-592.
- Winborg, J. & H. Landstrom (2001). Financial bootstrapping in small businesses: Examining small business managers' resource accumulation behaviors. *Journal of Business Venturing*, 16(3), 235-254.
- Zhao, H. & S.E. Seibert (2006). The big five personality dimensions and entrepreneurial status: A meta-analytic review. *Journal of Applied Psychology*, 91(2), 259-271.

Zhou, J. (2003). When the presence of creative coworkers is related to creativity: Role of supervisor close monitoring, developmental feedback, and creative personality. *Journal of Applied Psychology*, 88(3), 413-422.

APPENDIX A: EXERCISE TIMELINES

45-minute Class Timeline

5-minutes introduce exercise, review instructions

25-minutes students work on vehicle construction

Note: when 12.5 minutes are remaining, make new value proposition announcement

15-minutes vehicle launch and debrief

75-minute Class Timeline

5-minutes introduce exercise, review instructions

30-minutes students work on vehicle construction

Note: when 15 minutes are remaining, make new value proposition announcement and extend construction time frame by 15-minutes

15-minutes additional student work time for vehicle construction

25-minutes vehicle launch and debrief

APPENDIX B: NEW PRODUCT DEVELOPMENT AND BUSINESS “LAUNCH” TASK WITHIN AN EMERGING INDUSTRY

You are a part of a new venture team that is developing a new product to “launch” within an emerging industry. Because the industry is emerging, your team has decided to capitalize on an entrepreneurial opportunity present due to this industry’s structure. Specifically, the team is going to try to become a technology leader in the industry by creating an innovative “vehicle.” The vehicle must be able to house a raw egg such that when it is dropped from an unidentified location and height, the egg does not break. Numerous other companies currently have designs under development. Your product will help your new venture only if your design is completed in the time allocated and the vehicle actually works. Additionally your team’s recent assessment of the market’s product perceptions (e.g., what they value), has lead you to realize that increased market share and a first-mover advantage can be expected if the design is aesthetically pleasing. Thus, this task requires technological capability, coordination, and creativity for successful completion. The best design will be judged after you have created and “pitched” the venture’s offering to the market (e.g., your instructor). Consequently, being able to effectively address the target market’s value propositions is extremely important. At this point in the construction of your venture’s opportunity, you know that the market values 1) a safe landing and 2) creativity. Addressing these market-level

value propositions could help your venture gain sustainable market-potential for the foreseeable future and a more desirable network of resource providers. Because the raw materials (e.g., resources) used to produce vehicles like the one your team is developing are commodities it is safe to assume that each competitor has *basically* the same resources from which to develop their vehicle. Therefore innovative thinking, resourcefulness, good team work, and venture team capabilities are likely to be keys for a successful “launch”.

Standards of the Industry (e.g., rules that you must follow)

- ◆ When inserted in the vehicle and ready for flight, at least half of the egg must be visible, unobstructed, and the physical state of the egg cannot be changed (***nothing can be blocking, covering, or surrounding at least half of the egg; the egg cannot be drained, cooked, etc.***).
- ◆ The launch will occur from nothing less than the second floor of a building and the vehicle must free-fall to the ground without assistance (e.g., you cannot be touching any part of the vehicle or its components during flight).
- ◆ Finished vehicles, with egg included, must be ready 30 minutes *<25-minutes for 45-minute length classes>* after you begin the exercise. You will be penalized for any delays.
- ◆ You cannot ask “the market” any questions about their product preferences or about any other issues related to this task. The rules are clearly specified here and must be followed.

Materials Note: You are *not* allowed to use the bag in which the materials came.

- | | | |
|---------------------------|-------------------------------------|------------------------|
| 1. 1 large raw egg | 6. 6 drinking straws | 11. 10 cotton balls |
| 2. String (about 6-feet) | 7. Some pebbles (about a hand full) | 12. 1 pair of scissors |
| 3. 1 Newspaper | 8. 6 paper clips | |
| 4. 1 roll of masking tape | 9. 1 bottle quick-drying glue | |
| 5. 3 Styrofoam cups | 10. 2 markers | |

UNIVERSITY-WIDE TRENDS IN ENTREPRENEURSHIP EDUCATION AND THE RANKINGS: A DILEMMA

Deborah H. Streeter, Cornell University
Romi Kher, Cornell University
John P. Jaquette, Jr., Entrepreneurship at Cornell

ABSTRACT

Major business media outlets such as US News & World Report, BusinessWeek, Entrepreneur Media and Fortune Magazine now publish annual rankings of entrepreneurship efforts in universities and colleges. We argue that current ranking systems do not provide an accurate picture of entrepreneurship programs to their readers because the ranking metrics ignore a major nationwide trend - entrepreneurship education is becoming university-wide, featuring cross-disciplinary programs with diverse missions at each institution, rather than existing simply as a sub-specialty in business or engineering programs. This creates at least two problems with the rankings: 1) accuracy of information, because of the difficulty of designating a single information source where there exists a complex set of programs and 2) inappropriate weighting of venture creation, which is less likely to be the primary focus for entrepreneurship programs that are university-wide. We recommend the field of entrepreneurship come up with a better information system (not a ranking system) for potential students and others who want to explore entrepreneurial offerings at universities. Such a system could and should be created to be 1) more substantive and informative, 2) centralized and 3) technologically appropriate, taking advantage of wiki technologies and the current Web 2.0 user-generated possibilities.

INTRODUCTION

Entrepreneurship education, a relatively new area for many universities and colleges, has been drawn into the rankings game over the past decade. Major business media outlets such as *US News & World Report, BusinessWeek, Entrepreneur Media* and *Fortune Magazine* now publish annual rankings of entrepreneurship efforts in universities and colleges. While this may have brought more visibility to entrepreneurship education, it remains to be seen whether these new rankings are good news or bad news. Rankings of academic programs, especially those related to business education, have been controversial.

At the university level, *U.S. News & World Report* rankings have been publicly criticized by college presidents (*Chronicle of Higher Education*, 2008). Business school and other academic rankings have been called “deeply flawed” (Karey, 2006) and “noisy and one-sided signals” (Dichev, 1999). Goia and Corley (2002) argue that the influence of rankings is accelerating the transformation of business schools “from substance to image.” Although these studies focus primarily on rankings of MBA programs, many of the lessons and insights they raise can be extended to an examination of the ranking of entrepreneurship programs.

Despite the objections raised by various authors who have studied rankings and their impact, there is a strong motivation for media companies to continue to publish their rankings because it helps sell their products, and in a world with an overwhelming amount of information about schools and colleges, prospective students and their parents are likely to continue using rankings as a means of filtering and sorting through all the data. The *Chronicle of Higher Education* recently included an appropriate comment by Jeffrey Brenzel, Yale’s dean of undergraduate admissions: “Rankings use a rigid formula, which can be highly misleading, but they currently fill a vacuum.”

In this paper, an argument is made that current ranking systems are not providing an accurate picture of entrepreneurship programs to their readers because the ranking metrics ignore the nationwide trend toward entrepreneurship education becoming university-wide, featuring cross-disciplinary programs with diverse missions at each institution, rather than existing simply as a sub-specialty in business or engineering programs. The failure to capture university-wide dimensions creates at least two problems with the rankings: 1) accuracy of information, because of the difficulty of designating a single information source where there exists a complex set of programs and 2) inappropriate weighting of venture creation, which is less likely to be the primary focus for entrepreneurship programs that are university-wide. Given the issues with the rankings, it is recommended the field of entrepreneurship come up with a better information system (not a ranking system) for potential students and others who want to explore entrepreneurial offerings at universities. It is argued that such a system could and should be created to be 1) more substantive and informative, 2) centralized and 3) technologically appropriate, taking advantage of wiki technologies and the current user-generated possibilities offered by Web 2.0.

PREVIOUS RESEARCH ON RANKINGS

The bulk of the research related to rankings has focused on ranking Business Schools. Some studies have shown that a large portion of the changes in the rankings reverse in a predictable way, due to noise in the information used to produce the rankings and the fact that various ranking systems are not correlated, suggesting that they are based on different information (Dichev, 1999). Morgeson and Nahrgang focused on the *BusinessWeek* rankings, showing that the rankings are highly stable over time and that some of the best predictors of rankings are elements that cannot be changed.

Another criticism of the rankings is that they have created incentives for MBA programs to shift resources away from things that give substance to their programs in order to favor those elements that relate to image (Gioia and Corley, 2002). Others have focused on the idea that the media rankings exaggerate the differences between similar MBA programs (Policano, 2007). Despite these potential flaws, it has been shown that rankings do significantly impact consumer perception. An interesting recent paper (Zemsky, 2008) discusses both the pros and cons of ranking systems and argues that the media should not focus on a statistical measure of market position, but rather create a system that would be an accurate measure of customer satisfaction; however, the author admits it would be very difficult to sample nearly a million potential respondents at 1800 institutions in order to create such a consumer satisfaction index.

No study has been done specifically about the ranking of entrepreneurship programs, most of which had their origins in the early 1990s. Vesper and Gartner (1997) published their own rankings of programs, focusing on the following criteria: courses offered, faculty publications, impact on community, alumni exploits, innovations, alumni start-ups, and outreach to scholars. At that time, they stated, "We must not lose sight of the fact that entrepreneurship programs are and will be evaluated, and that we must, therefore, be ready to offer criteria that we want our programs to be evaluated on. If university entrepreneurship educators do not step forward to assume leadership of our own field, others will surely come to the forefront to determine the rules of the game." Unfortunately, no consistent effort emerged by educators to do the rankings, and by 2005 rankings by the media began to appear; however, no systematic study has emerged to analyze whether those rankings are effective in measuring and communicating excellence in entrepreneurship education.

METHODS

To analyze the entrepreneurial rankings since 2005, four specific systems were analyzed: those published by *Entrepreneur Media*, *U.S. News & World Report*, *Fortune Small Business* and *BusinessWeek*. The goals of each ranking system were studied along with the criteria used to rank schools. In particular, rankings were compared across the four systems, focusing on the most current data from each system that was available to prospective students in the fall of 2008.

In addition to studying the rankings, the authors sought to have a broader understanding of the pool of universities from which the rankings have been determined. Using a list of 160 schools, the authors examined how many entrepreneurship programs have faculty, courses, and/or resources outside engineering and/or business programs in order to document the continuing trend toward university-wide entrepreneurship education. 120 of the programs on the list came from *Entrepreneur* magazine (the publication only actually ranks the top ten) from their 2006 rankings and listings of all programs. The magazine listed programs for undergraduate degrees, graduate degrees and by region using a set of criteria developed by them and summarized in table #1. The other 40 programs came from merging rankings by the other magazines to this list of 140 programs. Essentially, if

Entrepreneur magazine did not review a college in 2006, it was added to the list. In addition, research was done to gauge the importance each program places on business creation in their measures of success. These broader results were useful in showing how the rankings systems may be outdated in the way they view programs.

CHALLENGES IN STUDYING ENTREPRENEURSHIP RANKINGS

A trend over the last decade is that increasing numbers of media companies are creating entrepreneurship rankings. The stated purpose of each of these ranking systems is to inform prospective students/consumers about where they can find (and apply to) the “best programs.” *U.S. News* has been doing college rankings since 1983 but only added entrepreneurship rankings over the past few years. Their rankings are intended to provide “reliable and consistent data – information that lets you compare one college with another.”

Magazine	Frequency	Ranking Description	Ranking Style	Quantitative/ Qualitative Mix
<i>BusinessWeek</i>	MBA Even years since 1988, entrepreneurship since 2004	Surveys to students, recruiters and schools with quantitative data collection	Alphabetical list	Mix of qualitative and quantitative data. Quantitative methodology
<i>Entrepreneur</i>	Annual since 2002	Surveys to gather information on mentoring, experiential learning, specific course offerings, alumni successes and career prospects	Numerical ranking	Primarily qualitative
<i>Fortune Small Business / CNN Money</i>	Inaugural year 2007	Opinion surveys conducted on students, faculty, entrepreneurs and VCs	Alphabetical list	Qualitative and subjective methodology
<i>US News</i>	Since 1983, entrepreneurship since 2007	7 primary survey categories - peer assessment, retention, faculty resources, student selectivity, financial resources, graduation rates and alumni giving rates	Numerical ranks	Primarily quantitative methodology

In the case of *Entrepreneur.com*, rankings are intended to provide consumers with “an unbiased and uncensored view of the chosen colleges.” *BusinessWeek* has been ranking MBA programs since 1988 and started ranking entrepreneurship programs in 2005. Finally, *Fortune Small Business* started ranking schools in 2007, breaking programs down into separate categories,

including general entrepreneurship, family business and social entrepreneurship. Each media outlet has its own method for ranking, which yields very different results (see Table 1).

Lack of Consistency and Changes in Metrics

Data issues confound evaluation of the four ranking systems for entrepreneurship. Most methods used to study other rankings, such as those focused on MBA programs, use longitudinal data. The ranking systems they study use the same algorithms and methods to rank schools from year to year so it is possible to monitor how schools' rankings vary over time. For example, Dichev used first order autocorrelation as a proxy for predictability and found the MBA rankings have "a strong tendency to revert... essentially simple aggregations of 'noisy' information." He was also able to compare across ranking systems, finding that over time there was no correlation between the contemporaneous changes of *Business Week* and *U.S. News* rankings. It is impossible to do a similar longitudinal study for entrepreneurship rankings because of the many changes in ranking entities and methodologies used across time.

As shown in Table 1, the various entrepreneurship rankings are different in terms of frequency, methods of gathering data, style for displaying results and the mix of how they use quantitative and qualitative factors. For example, *BusinessWeek* ranks programs every other year, while other media outlets issue rankings on an annual basis.

Within a Single System – Changes in Methodology from Year to Year

Another data issue is that methods for ranking entrepreneurship programs have changed over time, even within a single source. Tables 2 and 3 illustrate the rankings done by *Entrepreneurship Magazine* (now *Entrepreneurship Media*) from 2005-2007. Prior to 2006 *Entrepreneur* created three tiers of schools, listing schools alphabetically within each tier. In 2006 they went to a numerical ranking system. In addition, the pre-2006 data collection and rankings were done for *Entrepreneur* by a firm called TechKnowledge Point Corp. In 2006, *Entrepreneur* partnered instead with Princeton Review to rank schools, employing a different set of metrics and weights and separating graduate and undergraduate rankings for the first time.

Changes in the metrics used across the four years of rankings by *Entrepreneur* resulted in changes in the relative position of schools. Comparing the rankings of schools in 2005-06 versus 2007-08, it is clear that a major change has occurred in the way programs were evaluated. The top 10 schools in 2007-08 do not have a single overlap with the schools ranked highly in previous years. The inconsistencies within this one ranking system rule out using methodologies that have been applied by researchers to MBA programs.

**Table 2. *Entrepreneur Magazine* (now *Entrepreneur Media*)
Rankings of Top 10 Undergraduate Programs, 2005-2008**

Undergraduate Entrepreneurship Programs	2005*	2006	2007	2008
University of Houston	--	--	2	1
Babson College	1T	10	1	2
Drexel University	--	6	3	3
University of Dayton	--	5	5	4
The University of Arizona	1T	1	4	5
Temple University	2T	4	8	6
DePaul University	1T	3	7	7
University of Oklahoma	--	--	--	8
University of Southern California	--	--	--	9
Chapman	--	--	--	10
Chapman University	--	--	6	
University of North Dakota	--	8	9	
Loyola Marymount University	--	--	10	
Syracuse University	1T	2	--	
Fairleigh Dickinson University	--	7	--	
University of Illinois, Chicago	--	9	--	

*Prior to 2006, *Entrepreneur Magazine* used Entrepoint and only listed programs alphabetically in tiers.
1T = 1st tier; 2T = 2nd tier; 3T = 3rd tier.

**Table 3. *Entrepreneur Magazine* (now *Entrepreneur Media*)
Rankings of Top 10 Graduate Programs, 2005-2008**

Graduate Programs	2005	2006	2007	2008
Babson College	1T	--	2	1
DePaul University	1T	2	5	2
University of Southern California	1T	--	1	3
The University of Arizona	1T	6	3	4
University of South Florida	--	--	9	5
University of Illinois at Chicago	--	--	10	6
University of California, Los Angeles	2T	--	6	7
Drexel University	--	--	7	8

**Table 3. *Entrepreneur Magazine* (now *Entrepreneur Media*)
Rankings of Top 10 Graduate Programs, 2005-2008**

Graduate Programs	2005	2006	2007	2008
Chapman University	--	--	8	9
University of North Carolina, Chapel Hill	1T	--	4	10
Syracuse University	1T	1	--	--
Northwestern University	2T	3	--	--
California State University, San Bernardino	--	4	--	--
University of Washington	3T	5	--	--
Temple University	2T	7	--	--
Monterey Institute of International Studies	--	8	--	--
Indiana University	2T	9	--	--
University of Louisville	--	10	--	--

*Prior to 2006, *Entrepreneur Magazine* used Entrepoint and only listed programs alphabetically in tiers.
1T = 1st tier; 2T = 2nd tier; 3T = 3rd tier.

Inconsistent Rankings across Programs

Considering the methodology of each ranking system (see Table 1), it should not be surprising that comparing results across programs reveals conflicting information for the consumer. *Entrepreneur* relies on surveys, while *Fortune* bases its rankings on journalistic-style reporting. While the methodology used by *U.S. News* is not explicit, their website says that the overall ranking of universities is based on a weighted average of various factors, so one can infer a similar system to their ranking of entrepreneurship programs.

Thus, in addition to within-system variation, there is considerable variation across systems. Table 4 is a display of the most recent data obtained from each of the top 10 schools (2008 for *Entrepreneur Magazine*, 2009 for *U.S. News & World*, 2006 for *BusinessWeek* and 2007 for *Fortune*). The decision to mix various years was made because the selected rankings represent the information available to prospective students in the fall of 2008, for both undergraduate and graduate programs.

**Table 4. Comparisons of Top 10 Schools Across Four Ranking Systems,
Data Available for Decision-makers in September 2008**

Universities	<i>Entrepreneur</i> Top 10 ranking -2008		<i>US News & World Report</i> - 2009		<i>Business- Week</i> 2006 Alpha only	<i>Fortune/CNN</i> 2007 Alpha only	
	Undergrad	Grad	Undergrad	Grad	Grad	Undergrad	MBA List
Listed Alphabetically							
Babson College	2	1	1	1	★	★	★
Ball State			10			★	
Chapman	10	9					
DePaul	7	2				★	★
Drexel	3	8					
Harvard				3			
Indiana			2	7		★	★
MIT			5	5	★		★
Stanford				2	★	★	★
Syracuse			8			★	★
Temple	6					★	
UC Berkeley			10	8	★	★	★
UCLA		7			★		★
UNC Chapel Hill				10		★	★
Univ. of Dayton	4	4					
Univ. of Illinois, Chicago		6				★	
Univ. of S. Florida		5					
Univ. of Southern Cal	9	3	4	6		★	★
Univ. of Arizona	5	5	5			★	★
Univ. of Maryland			9			★	★
Univ. of Oklahoma	8						
Univ. of Pennsylvania			2	4	★	★	★
Univ. of Texas, Austin			7	9		★	★
University of Houston	1						
University of N. Carolina		10	10				

A blank cell means that the school was not ranked in the top 10 by that entity. An asterisk is used to designate the rankings of *BusinessWeek* and *Fortune Magazine*, who only list the top schools alphabetically, without assigning a specific numerical ordering. An examination of the table shows the many inconsistencies. Consider the following conflicting outcomes:

- ◆ Babson is the only program that is ranked in the top 10 by all entities across all programs.
- ◆ Comparing the undergraduate list for *Entrepreneur* and *BusinessWeek*, there is only one school (Babson) in their top five that is common across the two sources.
- ◆ Comparing the graduate list for *Entrepreneur* and *BusinessWeek*, except for Babson, the top 10 schools have no overlap.
- ◆ Some programs rank only in one of the systems (Harvard and University of Houston, for example).

The inconsistency in the rankings is concerning, given the very similarly stated purposes of the media outlets for publishing such data. Here are examples from their websites:

- ◆ *BusinessWeek* promises “the scoop on the best schools.”
- ◆ *US News & World* tells people they “need a source of reliable and consistent data” to find the right college.
- ◆ *Entrepreneur* states they “give you an unbiased and uncensored view of the chosen colleges.”
- ◆ *Fortune* provides rankings “to guide you through the academic maze.”

While the four sources may share a common goal of informing the public’s decision-making regarding schools, the results are very confusing. In addition, there is a deeper issue regarding the accuracy of the rankings when it comes to entrepreneurship. The metrics they are using are not capturing what could be argued as the most important trend in entrepreneurship: the move of entrepreneurship education across the curriculum to university-wide approaches.

UNIVERSITY-WIDE ENTREPRENEURSHIP

Entrepreneurship courses and activities are found in about two-thirds of the 2,000 college campuses across the U.S. according to the Kauffman Foundation website. Most programs started in either the graduate or undergraduate business programs, or occasionally out of an engineering program focused on technology innovation; however, slowly but surely, entrepreneurship education has spread across campuses everywhere. Streeter and Jaquette (2002) documented the shift toward various models of university-wide entrepreneurship, showing that nearly three-quarters of the

schools surveyed had moved entrepreneurship education across the curriculum, beyond the business and engineering programs.

Since then, some of the major funding entities, such as the Kauffman Foundation and the National Collegiate Inventors and Innovators Alliance (NCIIA), have further encouraged university-wide approaches to growing entrepreneurship programs on college campuses. Now in its third round of creating what are called the “Kauffman Campuses,” the Kauffmann Foundation has funded more than a dozen institutions to the tune of \$4-5M each to infuse their entire university or college with entrepreneurial activities, courses, and approaches. The driving force behind such programs is the belief that entrepreneurship belongs not just in colleges of business and/or engineering, but also in programs focused on such diverse fields as theater, veterinary medicine, computer science, law, nursing, biology, sociology, and sports medicine.

Streeter and Jaquette (2002) studied 38 entrepreneurship programs and found that 28 had university-wide entrepreneurship. In this study, 160 entrepreneurship programs were studied (see list in Appendix 1) and found entrepreneurship programs were located in various places:

- ◆ Undergraduate business programs (86%)
- ◆ MBA programs (73%)
- ◆ Undergraduate engineering program (47%)
- ◆ Graduate engineering program (30%)
- ◆ *Outside* engineering and/or business (69%).

Clearly, the trend toward university-wide entrepreneurship has continued. Another aspect of the data is notable: there is a stronger emphasis on entrepreneurship at the *undergraduate* level than the graduate level. This is likely the reason that ranking systems began to distinguish between the two and started publishing separate rankings a few years ago.

ARE EXISTING RANKING SYSTEMS MEASURING THE RIGHT THING?

The trend toward university-wide entrepreneurship raises the question of whether current ranking systems are measuring the right thing with their metrics. In looking at the criteria (where available) of the various ranking systems, the following characteristics pose difficulties when it comes to reflecting the opportunities that are found in schools and colleges with university-wide entrepreneurship programs:

- ◆ *Startups are highly valued.* Most of the narratives explaining the rankings focus on business creation or ownership by students, faculty, staff and alumni.

- ◆ *Metrics are vague.* The approaches to ranking range from unstructured interviews (*Fortune*) to standardized surveys (*Entrepreneur*). What is unclear is how the results are summarized into a numerical ranking.
- ◆ *Centralized responses are required from the university.* When the media company approaches the university, it is expected that a single entity can provide answers to the questions that are used in the ranking methodology.

Startups as a Measure of Effectiveness

It is highly appealing from a PR perspective for universities to showcase young startups that emerge from their student bodies. Such young entrepreneurs serve as role models and make good copy for magazines and brochures. Nonetheless, the use of startups as a major way to measure the success or failure of entrepreneurship programs has at least two major limitations. First, such an approach ignores many other, broader gains that come from the study of entrepreneurship and the nurturing of entrepreneurial spirit. When building an entrepreneurship program, the goal is not necessarily to set up a system for immediate success. For example, only 44 percent of the 160 programs examined were explicit about venture creation in their mission statements or primary materials. To expect youthful entrepreneurs to be successful as a standard of the program is counter to the mission of setting up the system to prepare the *most* students for future success.

To understand the broader aspects of entrepreneurship education, consider the framework suggested by Yusuf (2005), who defines entrepreneurship as the “generation of value through change.” This approach embraces both social and economic change and also includes high-risk change and low-risk change, and thus broadens what can be the topics and approaches of entrepreneurship education. Yusuf categorizes entrepreneurship into the study of how value is generated through change in four contexts: (1) social intrapreneurship, (2) grassroots social entrepreneurship, (3) corporate intrapreneurship, or (4) independent entrepreneurship. Using startups as a primary metric in ranking systems limits the information to just the fourth context, missing the other three altogether.

Building on Yusuf’s framework, an additional concept can be added, to further define entrepreneurship as the generation of *sustainable* value through change. Thus, the purpose of entrepreneurship education can be recast as an effort to develop and nurture the ability to initiate and/or accelerate the creation of lasting economic and/or social value through change. Educating students (in entrepreneurship classes) to understand how to identify, evaluate and exploit opportunities for generating sustainable value through change in all settings has a far greater impact for students and society than simply helping individuals start businesses, even if it is a much more difficult thing to measure when compared with counting startup enterprises. The current ranking systems are not adequately capturing this broader mission of entrepreneurship education.

A second argument against the heavy weighting of how many startup companies are created by students and faculty is that it ignores the latent effects of entrepreneurial education. Although some individuals do start a business within several years of graduating from college, it is really the impact of entrepreneurship education throughout the career of the individuals that matters. In addition, when entrepreneurship is taught outside a business school context, it is even less valid to look at startups as a primary measure of effectiveness or success. Programs trying to infuse their curricula with entrepreneurial thinking do not necessarily expect the result to be immediate business creation. Through their focus on venture creation, the current ranking systems are looking at the short-term gains rather than the long-term gains of entrepreneurship education.

Vague Metrics and the Difficulty of Collecting Data from a Single Point of Contact

There are other ways that current ranking systems are out of sync with the trend toward cross-curriculum entrepreneurship education. Although none of the four ranking systems studied have published the algorithms and/or weighting systems they use, presumably some are based strictly on the collection of specific data about programs (*BusinessWeek*) while others take a journalistic approach to the problem, gathering more anecdotal information from phone interviews and other qualitative sources. Each of these approaches has serious shortcomings when assembling information about programs that span the university.

As entrepreneurship education moves to a university-wide model, it stretches the boundaries of what is taught and where programs are located. When ranking systems depend on journalistic research, it is difficult to ferret out all the interesting places entrepreneurship may be manifested within a university. For survey-based rankings, while it is important that there be a single point of contact to answer questions for all things entrepreneurial at the institution, there simply may not exist such a single entity with knowledge of all the programs. Streeter and Jaquette (2002) found that more than 30 percent of university programs follow a “radiant model,” in which the locus of control is highly decentralized when compared with “magnet” models where the MBA program controls most of the faculty, courses and resources. Gathering information from such programs, whether quantitative or qualitative, can be very hit or miss. Accuracy of the resulting rankings comes into question as a result.

To summarize, the current rankings face a serious dilemma in capturing the “best” of entrepreneurship education when their metrics are vague. Collecting accurate data is an issue and the focus is on venture startups. It may not be surprising, therefore, that of the schools deeply funded by the Kauffman Foundation, only two are on any of the four systems’ top 10 lists.

THE CENTRAL DILEMMA AND A SUGGESTED REMEDY

As argued above, there are serious limitations in the current ranking systems regarding the trend toward university-wide entrepreneurship because the criteria used cannot accurately reflect what is happening in the field. Thus, in the absence of other information, rankings in publications are hurting the ability of entrepreneurship programs to manage their brands effectively when they inaccurately represent the landscape for entrepreneurship education. Consumers use ranking systems to sort their options in a very crowded information market and to inform themselves about the relatively new field of entrepreneurship. Until now, rankings for entrepreneurship programs did not have as critical an impact as that seen in the rankings game at the MBA level; however, as programs increase and the field becomes more competitive, the stakes are higher, and entrepreneurship rankings will cause the same kinds of problems as those caused in B-schools.

Therefore, it is recommended that the field move to create an information system much like the database being created at the university level. The guiding principles of such a system should be:

Centralized information.

Entrepreneurially oriented students can visit individual websites, but clearly the widespread use of rankings means they are looking for centralized sources of information and this database will serve as a clearinghouse.

User-generated and maintained.

In this world of Web 2.0, it is feasible that a central wiki-based or Facebook-like site be populated with data generated by each school. One option would be to have a major (neutral) foundation create and maintain the database. Foundations focused on entrepreneurship have a stake in tracking programs, and such a database would be viewed by large numbers of prospective students, providing a branding/exposure opportunity for the foundation. Such a system of self-identification would have at least three benefits, because it would be:

- * Viral in its spread.
- * Self-sustaining, with each entrepreneurship program responsible for their own section of the site.
- * Easily updated (since these programs change frequently).
- * Customizable, since the system would allow users to:
 - weight various factors according to what they see as important criteria

- perform advanced searches that could combine various criteria (entrepreneurship and nursing, for example).

Customizable to reflect several emphases within a given university.

The system must allow decentralized programs to showcase their various sub-programs.

Not simply focused on teaching.

Such an information system should allow entrepreneurship programs to reflect the full range of offerings that impact graduate and undergraduate students:

* Teaching, including lecture-based classes, but not limited to that. For example, teaching based on:

- Case studies
- Business planning classes
- Practical consultations with small businesses
- Prototyping class for engineers
- Trips to developing countries to impact social needs
- Guest lecture series featuring entrepreneurs and business leaders
- Simulation or gaming.

* Non-curricular opportunities, such as clubs and competitions.

* Internships and career development.

* Research productivity and graduate education.

* Outreach to businesses (student, local and beyond) through incubators, conferences, and extension activities.

* Alumni programs.

* Commercialization efforts.

Created by a neutral party.

Either a foundation or a cross-university group should create this tool in order to have integrity and authenticity.

As a centralized site, the database can be promoted to users as more authoritative and efficient. Cornell University recently went through a similar exercise when it created the Entrepreneurship@Cornell (E@C) website (<http://eship.cornell.edu>). Students, alumni and

entrepreneurs were having trouble wading through the various programs and resources available in all nine schools and colleges within Cornell that participate in entrepreneurship education. To brand and communicate the scope of its offerings more clearly, the central E@C program created the e-ship site as an easy way for anyone to see all the entrepreneurial courses, activities and resources around campus and/or to sort by field of interest or other criteria. This type of centralized information system is already happening at the university level, as illustrated by the launch of U-Can (<http://www.ucan-network.org/>), a national database with about 400 schools participating.

CONCLUSION

It is critical that the field of entrepreneurship improve the way that entrepreneurship programs are communicated to the world. It is critical to take advantage of the opportunity to engage the largest number of students possible in purposeful entrepreneurial education that supports each individual's long-term success and the success of society itself. Confidence and technical ability is widespread among students; they need an extra edge in their education. Entrepreneurship courses, activities, research, and outreach can provide that edge, whether in social entrepreneurship or high-tech venturing, whether in venture creation or intrapreneurial activities inside corporate America or the government. Entrepreneurship education, the teaching of how to create value through change, provides life-long benefits and engagement for students no matter where they go professionally. The world is flat and great global problems are ahead. Current graduates will have more job change and disruption in their 20s than their parents faced in a lifetime.

Solving those problems will require entrepreneurial thinking across all fields, and entrepreneurship education will continue to blur lines across disciplines and fields; thus, an effective information system is needed much more than a ranking of programs in order to attract as many students as possible to entrepreneurship programs that emerged in the past two decades and are more relevant than ever.

The rankings game will continue; however, none of the ranking systems can effectively sort the opportunities for prospective students and their parents. There are too many insurmountable issues with data and metrics, and the systems are too far out of sync with the current direction of entrepreneurship programs. Due to inconsistencies of the current ranking systems, they present no clear "winners" but hold up each year only a sampling of the great programs that exist throughout the country.

Administrators and alumni do pay attention to rankings, so even if promotion criteria remains heavily focused on research productivity, faculty should make sure they get full credit for the entrepreneurship programs they build (which may have all elements - teaching, research and extension). By supporting and contributing to a central database, faculty members can showcase their activities and provide a more accurate view to stakeholders, thereby making the various ranking systems less relevant. It is up to all of us in the field to lobby for and contribute to a

centralized, up-to-date information system that will stand up to scrutiny and allow the public to see inside our many and varied programs and to find their way to a place in the entrepreneurial landscape where they can best flourish.

REFERENCES

- Dichev, I.D. (1999). How good are business school rankings? *Journal of Business*, 72(2), 201-213.
- Gioia, D.A. and K.G. Corley (2002). Being good versus looking good: Business school rankings and the circean transformation from substance to image. *Academy of Management Learning and Education*, 1, 107-120.
- Hoover, Eric (2007, September 7). U.S. News rankings. *The Chronicle of Higher Education*, 45.
- Karey, K. (2006, September). College rankings reformed: The case for a new order in higher education. *Education Sector Reports*, 1-30.
- Kauffman Foundation website – <http://kauffman.org>.
- Morgeson, F.P. and J.D. Nahrgang (2008). Same as it ever was: Recognizing stability in the Business Week rankings. *Academy of Management Learning & Education*, 7(1), 26-41.
- Policano, A.J. (2007). The rankings game: And the winner is *Journal of Management Development*, 26(1), 43-48.
- Streeter, D. and J.P. Jaquette (2004). Entrepreneurship education in the modern university -- University-wide entrepreneurship education: Alternative models and current trends. *Proceedings, Rural Community Economic Development: Empowering Rural Communities Through Entrepreneurship, Experiences from the 1890 Land-Grant Institutions*, 57-89.
- Vesper, K.H. and W.G. Gartner (1997). Measuring progress in entrepreneurship education. *Journal of Business Venturing*, 12, 403-421.
- Yusuf, J.W. (2005). Putting entrepreneurship in its rightful place: A typology for defining entrepreneurship across private, public and nonprofit sectors. *Academy of Entrepreneurship Journal*, 1(2), 113-127.
- Zemsky, R. (2008). *The rain man cometh—again*. Graduate School of Education, GSE Publications, University of Pennsylvania, State College, PA, 5-14.

Appendix 1. List of 160 Schools Studied for Location of Entrepreneurship Program

Babson College	Tulane University	Johns Hopkins University	University of Central Florida
Baruch College, CUNY	University of Alabama	Juniata College	University of Cincinnati
Baylor University	Univ. of California, S. Cruz	Kansas State University	Univ. of Colorado at Boulder
Binghamton University	University of Dayton	Kent State University	Univ. of Colorado at Denver
Bradley University	University of New Hampshire	Lamar University, TX	University of Dallas
Cal. State Univ. at Stanislaus	University of Puget Sound	Lehigh University	University of Florida
Cal. State Univ., Fresno	University of Utah	Louisiana State University	University of Houston
Claremont Grad. University	University of West Georgia	Miami University, OH	University of Illinois
Clarkson University, NY	West Virginia University	Michigan Tech. University	University of Illinois, Chicago
DePaul University	Xavier University - OH	Minnesota State University	University of Iowa
Drake University, IA	Allegheny College, PA	Muhlenberg College	University of Kansas
Duquesne University	Auburn University	New York University	University of Louisville, KY
Elon University	Belmont University, TN	N. Carolina State University	University of Maryland
Emory University	Beloit College, WI	Northeastern University	University of Michigan
Fairleigh Dickinson Univ.	Berea College	Northern Kentucky University	University of Minnesota
Francis Marion University	Boston University	Northwestern University	Univ. of Nebraska - Lincoln
F. W. Olin College of Eng.	Brigham Young University	Ohio State University	Univ. of Nebraska - Omaha
Hofstra University	CSU, S. Bernardino	Oregon State University	UNC, Chapel Hill
Illinois State University	Central Michigan University	Pace University	University of North Dakota
James Madison University	Chapman University, CA	Pennsylvania State University	University of Northern Iowa
Johnson & Wales University	Clemson University	Quinnipiac University, CT	University of Notre Dame
Kennesaw State University	Colorado State University	RPI	University of Oklahoma
Loyola Marymount University	Columbia College Chicago	Rochester Institute of Tech.	University of Oregon
Loyola University Chicago	Cornell University	Rose-Hulman Institute Tech.	University of Pennsylvania
Marshall University	Creighton University, NE	Rowan University	University of Pittsburgh
Millikin University, IL	Dartmouth College	San Diego State University	University of Portland
Monterey Inst. of Int. Studies	Drexel University	Seton Hill University	University of San Francisco
Morehead State University	Eastern Michigan University	St. Mary's University	University of South Dakota
Northeastern State Univ., OK	Emerson College	St. Olaf College, MN	University of South Florida
Plymouth State Univ., NH	Flagler College	Stanford University	Univ. of Southern California
Rider University, NJ	Florida Inter. University	Suffolk University	University of St. Thomas
Rollins College, FL	Florida State University	Syracuse University	University of Texas at Dallas
Saint Louis University	George Washington Univ.	Temple University	University of Central Florida
Seattle University	Georgia Institute of Tech.	Texas A&M University	University of Virginia
Simmons College S of Mgt	Gonzaga University	Texas Tech University	University of Washington

Appendix 1. List of 160 Schools Studied for Location of Entrepreneurship Program			
Southern Illinois University	Grove City College, PA	Thunderbird, AZ	Univ. of Wisconsin Madison
Southern Methodist Univ.	Howard University	Tuskegee University	Utah State University
SUNY - Oswego	Indiana University	University of Akron	Vanderbilt University
Stephens College, MO	Indiana Univ. of Pennsylvania	University of Arizona	Wake Forest University
Texas Christian University	Iowa State University	UCLA	Western Carolina University
			Worcester Poly. Institute

A COMPARISON OF ENTREPRENEURSHIP/SMALL BUSINESS AND FINANCE PROFESSORS' REACTION TO SELECTED ENTREPRENEURIAL AND SMALL BUSINESS FINANCIAL PLANNING AND MANAGEMENT ISSUES

Paul Dunn, University of Louisiana at Monroe

Kathleen Liang, University of Vermont

ABSTRACT

Small business failures have been attributed to management failures, particularly financial management failures. Since entrepreneurship and small business is a growing discipline, and financial management is so important to them, we wondered if entrepreneurship and small business and finance professors agreed on some common financial issues of importance to entrepreneurs and small business people. There was general agreement between the disciplines about the issues studied.

However, some professors in both groups did not agree. In addition, additional research is needed to determine if and to what extent these concepts are being taught to entrepreneurship and small business students.

INTRODUCTION

The rate of failures and discontinuances among small businesses is high especially during the first few years after startup. An often mentioned cause of small business failures is poor management, particularly poor financial planning and undercapitalization. Additionally, poor financial planning and management during the life of the enterprise creates problems for small businesses owners. Many colleges of business have established entrepreneurship and small business classes and programs to prepare students for careers as entrepreneurs and in small business. The purpose of this research was to compare what professors of entrepreneurship and small business with finance professors about several important aspects of financial management and planning during various phases of small business firm life cycles. In particular, their knowledge about planning and managing fixed and current assets and presumably what they think entrepreneurs should know about financing and managing assets during start up, survival, growth, and through various phases of the firm's life cycle.

LITERATURE REVIEW

Primary reasons for small business failure in academic and popular literature are poor financial planning and management. Undercapitalization, a startup problem, the emphasis among authors seems to be on a failure to anticipate cash needs to reach cash flow break even. Early authors in small business management recognized this as a problem. Baumbach, Lawyer and Kelly(1973, p. 191) emphasize that, "...entrepreneurs must allow for a reasonable period of time to elapse, usually three to six months, before income from the business will cover expenses" including personal income. Later authors have a similar emphasis. Baron and Shane (2005) indicate that negative cash flow in the early days of most new ventures is likely to be failure if additional cash is not injected into the business. In the academic literature Perry (2001) discovered that there was a significant relationship between firm failure and lack of planning. Similarly, Gaskill, Van Auken, and Manning (1993) found that primary reasons given for failure centered on poor management and planning; a second important factor found was finances and working capital management, a third factor was related to the competitive environment and a factor was related to growth. Xu and Wang (2007) indicate that a widely recognized cause of failure is poor financial management. Cassar (2002) says that how a business obtains startup funding is critical in determining adequacy, financial performance and probability of failure.

Mason (2008) says that small business failure results from a lack of management skills and/or lack of proper capitalization. Smythe (2007, p. 1) without equivocation suggests that, "The lack of start-up capital is a problem most small businesses encounter." Clark (1997) indicates that money is one factor that must be properly planned. He suggests that break even for a start-up company takes much longer than most entrepreneurs expect. He suggests having a nest egg at least three times longer than projected to break even with the business.

Small business management and entrepreneurship text book authors often discuss financial planning as a potential problem. Kuratko and Hodgets (2004, p. 253) indicate that "...Remember, it is not enough for a small business to get started, it must be able to survive at least 90 days without further inflows of funds." Similarly, Scarborough and Zimmerer (2008, p 390) suggest that "Too often entrepreneurs are overly optimistic in their financial plans and fail to recognize that expenses initially exceed income (and cash outflow exceeds cash inflow) for most firms. This...may last from a few months to several years." Longenecker, Moore, and Petty (2000, p. 515) indicated a similar source of problems, "More businesses fail because of a lack of cash than because of a lack of profits." Vesper (1996, p. 300) suggests that, "The ultimate evidence of error in venturing is a shortage of cash. Either too little came in, or it went out too fast or both. The ultimate pitfall of venture financing is to run out of cash." In much the same vein, the popular literature expresses similar ideas.

Many internet sources of information for entrepreneurs and small business emphasize the importance of financial planning and management. Businesswealth.com, suggests that inadequate

cash reserves are the single most common cause of business failure. This source recommends six months or so of extra cash at startup. Similarly KSA Business Recovery and Insolvency Services (ksabr.com) indicates that poor cash management is the main reason for small business failures. Factors cited that cause poor cash flow are: increases in inventory, poor credit control, increased days in receivables, bad debts, late billing, poor forecasting, failure to plan for capital and/or exceptional expenditures. Another website, prweb.com, suggests that financial management (cash flow) is a factor that causes failures and . . .” cash flow problems are responsible for over 70 percent of business failure with their first year.” Videouniversity.com cites poor cash flow management and inappropriate sources of finance are causes of failure.

Clearly, poor financial planning and management create problems for entrepreneurs and small business owner/managers. To try find out how entrepreneurs and small business owners should plan and manage current assets (cash, receivables and inventory), we looked into some standard texts used in basic finance courses. These texts provide insight into the financing options available to entrepreneurs and small business managers. These options include three options for financing assets: 1) the aggressive approach that suggests financing fixed assets and the permanent portion of current assets with long term sources, 2) the matching approach that suggests financing assets with terms that match their life, and 3) the conservative approach that suggests financing fixed assets, permanent working capital and a portion of seasonal working capital with long term sources (Lasher, 2003 and Brigham and Houston, 2007).

Some small business management text authors seem to take the aggressive approach. Carland and Carland (1998, p. 444), for example, indicate that, “Treating the permanent portion of current assets as long lived and using long term debt to finance it can make sense.” Osteryoung, Newman, and Davies (1997, p. 137) say that. “As a general working principle, assets should be financed from a source with a maturity commensurate with the cash-flow generation of the asset.” They suggest that long term assets, permanent current assets included, be financed long-term. Others, (Rogers, 2002) (Ibrahim and Ellis, 1993) do not address the issue directly, but focus on cash flow planning and management as tools to maintain the liquidity of the firm. Baron and Shane (2005, p. 182) suggest that . . .”experienced entrepreneurs often say that it is best to look for money before the need arises. That way, it will be available when, as almost always happens, expenses are larger than anticipated and cash inflows are slower than expected.”

The logic is clear, when small business start and as they move through the firm life cycle, financial planning and management are key factors in their continued existence. If that is the case, those who teach finance should provide their student entrepreneurs and small business owners with a good background in financial planning and management, including length of sources of funds. The purpose of this paper is to compare the understanding of good financial planning and management between finance professors and entrepreneurship/small business management professors.

METHODOLOGY

A questionnaire was designed to gather pertinent demographic information and to pose several start up finance and/or financial management situations to which an entrepreneur or small business person might be required to or at least be expected to react. The assertions about financial management were presented to both finance and entrepreneurship/small business professors to which they were asked to strongly agree, agree, disagree, or strongly disagree. The questionnaire was uploaded to the internet at the SurveyMonkey site. An email list of finance professors from the websites of 662 colleges across the country was provided by a colleague. The link to the site was emailed to 1676 finance professors with a request that they respond. Of those emailed, 436 were returned as undeliverable. Ninety four responded, for a return rate of 8 percent.

A list of entrepreneurship and small business professors was not available to the researchers. Therefore the questionnaire link to the site was emailed to several known entrepreneurship and small business networks with a request that they forward the address to their members. The networks included the Association for Small Business and Entrepreneurship, the northeastern Small Business Institute group, the national Small Business Institute, and the Entrepreneurship and Education Network. There were 98 individuals who opened the questionnaire and responded to some of the demographic questions, but only 79 responded to most of the assertions. The responses from both groups are included in the current analysis.

FINDINGS OF THE STUDY

Table 1 shows the demographics of both respondent groups. Males were predominant in both groups with 83.8 percent of finance professors and 73.4 percent of small business and entrepreneurship professors. Most of the professors were over 45 years of age. Finance professors were significantly younger however. Over $\frac{3}{4}$ of both groups had Ph.D. degrees.

There was, as would be expected, a significant difference in the academic field of study. Small business and entrepreneurship professors had fairly diverse fields. Most of the small business and entrepreneurship professors taught entrepreneurship and/or small business with a few in other areas. Most of the finance professors' primary teaching area was finance with only 1.5 percent in other areas. There were no significant differences in the length of time each group had taught. Small business and entrepreneurship professors tended to have taught a little longer than finance professors.

The respondents were from across the U.S. with a few of the Small Business and Entrepreneurship from foreign countries. Table 2. This results from using the approach used in sampling, a list of schools in the U.S. for finance professors and networks for small business and entrepreneurship professors.

Table 1. Respondent Demographics (Percent Distribution)					
	Entr/SB Professors	Finance Professors		Entr/SB Professors	Finance Professors
Gender			Teaching Area**		
Female	26.6	16.2	Small Business	17.7	0.0
Male	73.4	83.8	Entrepreneurship	51.9	0.0
Total	100.0	100.0	Business	3.8	0.0
n	79	68	Marketing	8.9	0.0
Chi Square	0.092		Finance	3.8	98.5
Gamma	0.119		Economics	3.8	0.0
Age*			Other	10.1	1.5
26 - 35	3.8	4.3	Total	100.0	100.0
36 - 45	15.0	20.3	n	79	66
46 - 55	23.8	39.1	Chi Square	0.000	
56 - 65	35.0	27.5	Gamma	0.000	
Over 65	22.5	8.7	Years Taught		
Total	100.0	100.0	< 6	12.5	11.6
n	80	69	6 - 10 Years	6.3	14.5
Chi Square	0.075		11 - 15 years	20.0	14.5
Gamma	0.010		> 15	61.3	59.4
Major Field**			Total	100.0	100.0
Management	28.8	0.0	n	80	69
Entrepreneurship	10.0	0.0	Chi Square	0.363	
Business	15.0	1.6	Gamma	0.698	
Marketing	16.3	0.0	Highest Degree		
Finance	8.8	84.4	Bachelors	0.0	1.4
Economics	6.3	7.8	Masters	24.4	18.8
Other	15.0	6.3	Ph. D.	75.6	79.7
Total	100.0	100.0	Total	100.0	100.0
n	80	64	n	78	69
Chi Square	0.000		Chi Square	0.423	
Gamma	0.000		Gamma	0.589	

Table 2. State or Territory					
	Entr/SB Professors	Finance Professors		Entr/SB Professors	Finance Professors
NR	3.8	5.8	MS	0.0	1.4
MI	0.0	2.9	NC	6.3	0.0
MO	0.0	1.4	NH	1.3	2.9
PA	1.3	0.0	NJ	5.0	2.9
TX	1.3	2.9	NM	1.3	0.0
AL	8.8	1.4	NY	3.8	4.3
AR	6.3	1.4	OH	1.3	4.3
CA	7.5	14.5	OK	13.8	0.0
CO	0.0	2.9	PA	0.0	1.4
CT	0.0	2.9	RI	0.0	1.4
DC	0.0	1.4	SC	1.3	1.4
DE	1.3	0.0	SD	0.0	1.4
FL	2.5	4.3	TN	1.3	4.3
HI	0.0	1.4	TX	10.0	10.1
IA	1.3	0.0	VA	1.3	2.9
IL	0.0	5.8	VT	1.3	0.0
IN	0.0	5.8	WA	0.0	1.4
KS	2.5	0.0	WV	0.0	1.4
KY	1.3	0.0	Ireland	1.3	0.0
LA	7.5	0.0	Portugal	1.3	0.0
MA	1.3	2.9	South Korea	1.3	0.0
MO	1.3	0.0	Canada	1.3	0.0
			Total	100	100

Table 3 shows the comparisons of entrepreneurship and small business professors and finance professors responses to the financial management assertions. There was no difference between the two groups on financing fixed assets with 80 percent plus agreeing that these assets should be financed using long term sources of funds. However approximately 20 percent of both groups disagreed with this assertion. The matching principal would call for financing long term assets (fixed) with long term sources. Over 95 percent of both groups correctly agreed that entrepreneurs tend to under estimate their firms working capital needs when starting a new venture.

This seems to result from optimism among entrepreneurs which leads them to think their business will generate sufficient cash flow quickly, not often the case. This tendency often leads to problems for new ventures. Not statistically different. Using owners' resources to purchase fixed assets was not the correct course of action according to 85 percent of entrepreneurship/small business professors and 79.1 percent of finance professors. Using owners' resources often leads to illiquidity for entrepreneurs in new ventures. Too, financial institutions are much more likely to finance fixed assets than working capital. Again there was no statistical difference between the groups.

Basic inventory should be financed using longer term sources. Entrepreneurs often think that since inventory turns, short term sources would suffice. That assumption leads to cash flow problems often since it is likely to take some time to allow the firm's marketing strategy to work. A majority of entrepreneurship/small business professors, 59.7 percent, and finance professors, 60.9 percent agreed. It is a source of some concern that nearly 40 percent of both groups responded incorrectly to this assertion. Reserving owners' money for working capital helps maintain the liquidity of the firm using more secure funding. Financial institutions do not like to loan money for working capital, particularly in new ventures. Most of the professors, entrepreneurship/small business, 90.8 percent, and finance professors, 78.2 percent, correctly agreed. There was a statistically significant difference, at the .10 level, between the groups on this assertion. Most professors, 89.9 percent of entrepreneurship/small business and 93.9 percent of the finance professors correctly agreed with the assertion that seasonal inventory could reasonably be financed using short term sources of funds. Again, the matching principal would indicate this course of action.

Many entrepreneurs who have time deposits think that cashing them and using them to finance their venture is necessary or appropriate. When CDs and savings accounts are cashed and used, entrepreneurs tend to think of these as "their" money and may use them to buy assets that could be leased or rented or buy new assets instead of good used assets. The resources could be pledged as collateral for a loan in which case, entrepreneurs have a different attitude toward the funds and tend to be more conservative in their use. Almost 70 percent of entrepreneurship/small business professors disagreed with this assertion while only 46.3 percent of the finance professors disagreed. There was disagreement with this assertion within each group and between the two groups. The groups were significantly different at the .05 level. While there will be an interest rate differential, using time deposits as collateral imposes a kind of "fiscal discipline" on entrepreneurs in that they are more likely to be more conservative in their expenditure of loan funds and are compelled to repay the loan. When these time deposits are cashed, they are considered personal funds and may be spent less effectively than borrowed funds.

Both groups, 58.2 percent of entrepreneurship/small business professors and 69.7 percent of finance professors, agreed that rapid growth creates cash flow problems. Most small business owners think that growth is great, but growth must be controlled. Increases in inventory and accounts receivables and expenses may require additional cash injections to support growth. Pricing

strategy can be used to control growth. Survival cash is the cash needed to allow the firm time to reach cash flow breakeven. It makes sense to plan for this cash at the beginning and to be sure that it will be available when needed. Going back to the bank for additional funds for operations is not viewed well by loan officers. It is better to arrange these funds as the initial funding is sought. Often these funds will be in the form of a line of credit. Both groups, 94.8 percent of entrepreneurship/small business professors and 93.9 percent of finance professors, agreed with this strategy and there was no difference between them.

Table 3. Comparison of Entrepreneurship/Small Business and Finance Professors' Responses to Assertions					
(Percent Distribution)					
	Entr/SB Professors	Finance Professors		Entr/SB Professors	Finance Professors
Fixed Assets Use Long Term			Under Estimate Working Capital Needs		
Strongly Agree	17.7	20.9	Strongly Agree	41.6	41.5
Agree	63.3	61.2	Agree	54.5	55.4
Disagree	16.5	17.9	Disagree	2.6	3.1
Strongly Disagree	2.5	0.0	Strongly Disagree	1.3	0.0
Total	100.0	100.0	Total	100.0	100.0
N	79	67	n	77	65
Chi Square	0.581		Chi Square	0.831	
Gamma	0.637		Gamma	0.953	
Purchase Fixed with Owner's Funds			Basic Inventory Longer Term		
Strongly Agree	7.6	4.5	Strongly Agree	7.8	3.1
Agree	16.5	16.4	Agree	51.9	57.8
Disagree	49.4	59.7	Disagree	37.7	37.5
Strongly Disagree	26.6	19.4	Strongly Disagree	2.6	1.6
Total	100.0	100.0	Total	100.0	100.0
N	79	67	n	77	64
Chi Square	0.554		Chi Square	0.628	
Gamma	0.762		Gamma	0.880	
Reserve Owners Money for Working Capital*			Seasonal Inventory Short Term		
Strongly Agree	27.6	18.8	Strongly Agree		12.1
Agree	63.2	59.4	Agree	81.0	81.8
Disagree	7.9	21.9	Disagree	8.9	6.1

Table 3. Comparison of Entrepreneurship/Small Business and Finance Professors' Responses to Assertions					
(Percent Distribution)					
	Entr/SB Professors	Finance Professors		Entr/SB Professors	Finance Professors
Strongly Disagree	1.3	0.0	Strongly Disagree	1.3	0.0
Total	100.0	100.0	Total	100.0	100.0
N	76	64	n	79	66
Chi Square	0.077		Chi Square	0.664	
Gamma	0.043		Gamma	0.299	
Cash and Use CDs and Savings**			Rapid Growth Creates Cash Flow Problems		
Strongly Agree	6.3	9.0	Strongly Agree	58.2	69.7
Agree	25.3	44.8	Agree	39.2	28.8
Disagree	58.2	43.3	Disagree	2.5	1.5
Strongly Disagree	10.1	3.0	Strongly Disagree	0.0	0.0
Total	100.0	100.0	Total	100.0	100.0
N	79	67	n	79	66
Chi Square	0.035		Chi Square	0.356	
Gamma	0.004		Gamma	0.145	
Negotiate Survival Cash at Beginning			Cash Balances Increase in Decline Phase		
Strongly Agree	32.5	31.8	Strongly Agree	12.0	12.3
Agree	62.3	62.1	Agree	58.7	69.2
Disagree	5.2	6.1	Disagree	29.3	16.9
Strongly Disagree	0.0	0.0	Strongly Disagree	0.0	1.5
Total	100.0	100.0	Total	100.0	100.0
n	77	66	n	75	65
Chi Square	0.974		Chi Square	0.257	
Gamma	0.884		Gamma	0.259	
Overestimate Sales Under Estimate Expenses			Accounts Receivables Longer Term		
Strongly Agree	67.5	62.1	Strongly Agree	16.7	9.1
Agree	31.2	33.3	Agree	60.3	63.6
Disagree	1.3	3.0	Disagree	19.2	27.3
Strongly Disagree	0.0	1.5	Strongly Disagree	3.8	0.0
Total	100.0	100.0	Total	100.0	100.0

Table 3. Comparison of Entrepreneurship/Small Business and Finance Professors' Responses to Assertions					
(Percent Distribution)					
	Entr/SB Professors	Finance Professors		Entr/SB Professors	Finance Professors
n	77	66	n	78	66
Chi Square	0.596		Chi Square	0.160	
Gamma	0.427		Gamma	0.317	
Under Estimate Cash Flow					
Strongly Agree	35.4	36.9			
Agree	22.8	15.4			
Disagree	29.1	35.4			
Strongly Disagree	12.7	12.3			
Total	100.0	100.0			
n	79	65			
Chi Square	0.690				
Gamma	0.824				

Good business managers make the necessary adjustments to an impending downturn in the economy. Reducing purchases and liquidating unneeded inventory, managing accounts receivables, cutting expenses, prudent management, should generate additional cash in anticipation of a downturn. While entrepreneurship and small business professors were inclined to agree with this assertion, 70.7 percent of entrepreneurship/small business professors, and 81.5 percent of finance professors. The groups were not significantly different.

A large majority of the groups, 98.7 percent of entrepreneurship/small business professors and 95.4 percent of finance professors, agreed that entrepreneurs tend to overestimate sales and underestimate expenses. There was no significant difference between the groups. Accounts receivables planning often creates problems for the firms that sell on credit in their own name. Since basic accountants receivables are a permanent current asset, prudent planning would indicate that they should be financed using longer term sources of funds. Seventy seven percent of the entrepreneurship/small business professors and 72.7 percent of finance professors agreed with the assertion. There was no significant difference between the groups.

The final assertion was that entrepreneurs underestimate their firm's capacity to generate cash flow. Almost sixty percent, 58.2 percent of the entrepreneurship/small business professors agreed and 53.3 percent of the finance professors agreed. There was no statistically significant

difference between the groups. This is an interesting finding since more professors agreed that entrepreneurs overestimate sales and underestimate expenses.

SUMMARY AND CONCLUSIONS

The causes of small business failures have been attributed to management failures especially poor financial management. The paper was designed to compare finance and entrepreneurship/small business professors' reactions to selected financial management assertions. The comparisons indicate that finance and entrepreneurship/small business professors agree on most of the assertions. Entrepreneurship/small business professors were significant, at .07 level, more likely to agree that owner's money should be reserved for working capital and significantly, at .03 level, more likely to disagree that entrepreneurs should cash CDs and savings for use in financing the business rather than use the instruments as collateral for loans.

However, some finance and entrepreneurship/small business professors incorrectly disagreed that fixed assets should be financed using long term sources of funds, a few that entrepreneurs underestimate their working capital needs, that basic inventory should be financed with longer term sources of funds, that owner's money should be reserved for working capital, that seasonal inventory can be financed using short term sources of funds, that survival cash should be negotiated at the beginning, that cash balances increase during the decline stage of the business cycle, and that accounts receivables should be financed using longer term sources of funds. Some also agreed when disagreement would have been appropriate. We are sure these disagreements are honest ones. We do, however, think that entrepreneurship students are not getting a good financial management education.

Those of us in entrepreneurship education need to be sure that our students have a good background in all phases of small business planning and management. To that end, we need to be sure that we understand what we are teaching. In addition, we may want to open a dialog with our finance counter parts and be sure that they understand our perspective on financial planning and management and that they understand the unique perspective of our students who aspire to become small business owners, not bankers and finance professionals.

REFERENCES

- Baron, R. and Shane, S (2005). *Entrepreneurship: A Process Perspective*, 1st Edition, Mason, Ohio, South-Western Publishing, p. 182, 60.
- Baumbach, C; Lawyer, K; and Kelley, P (1973). *How to Organize and Operate a Small Business*, 5th Edition. Englewood Cliffs, N.J., Prentice Hall, p. 191.
- Brigham, E. and J. Houston (2007). *Fundamentals of Financial Management*, Concise 5th Edition, Mason, OH, Thomson/South-Western.

- Carland, Jim, and JoAnn Carland (1998). *Small Business Management: Tools for Success*, Second Edition, Houston, TX, Dame Publications, Inc. p. 444.
- Cassar, Gavin (2002). The financing of business start-ups. *Journal of Business Venturing*, Vol. 19, pp. 261-283.
- Clark (1997) Retrieved March 9, 2008 from <http://portland.bizjournals.com/portland/stories/1997/06/30/smallb3.html>
- Gaskill, L. R., H. E. Van Auken, and R. A. Manning (1993) A Factor Analytic Study of the Perceived Causes of Small Business Failure. *Journal of Small Business Management* 31: 18-30.
- Ibrahim, A. B. and W. H. Ellis (1993) *Entrepreneurship and Small Business Management*, 2nd Edition, Dubuque, IA, Kendall/Hunt Publishing Company.
- ksabr.com Retrieved March 8, 2008, from <http://www.ksabr.com/index.php?page=thomaincausesofbusinessfailure>
- Kuratko, D. and Hodgetts, R. (2004). *Entrepreneurship*, 5th Edition, Mason Ohio, South-Western, p. 253.
- Lasher, W. R. (2003). *The Management of Working Capital*. In M. Reynolds, S. Smart, K. ZumBahlen, J. Barans, and M. Sears (Eds.) *Practical Financial Management* (3rd ed.) (pp. 492-537). U.S.: Thomson South-Western.
- Longenecker, Justin; Moore, Carlos; and Petty, J. William (2000). *Small Business Management*, 11th Edition. Cincinnati, South-Western College Publishing, p. 515.
- Mason (2008). Retrieved March 9, 2008 from <http://www.moyak.com/researcher/resume/papers/failure.html>
- Osteryoung, J. S., D.L. Newman and L.G. Davies (1997). *Small Firm Finance*, Fort Worth, Harcourt Brace College Publishers, p. 137.
- Perry, S. C. (2001). The Relationship between Written Business Plans and the Failure of Small Businesses in the U.S. *Journal of Small Business Management* 39: 210-208.
- Rogers, Steven (2002). *The Entrepreneur's Guide to Finance and Business*, Boston, McGraw Hill.
- Scarborough, Norman M. and Zimmerer, Thomas W. (2008). *Essentials of Entrepreneurship and Small Business Management*, 5th Edition. New Jersey, Pearson Prentice-Hall, Inc., p. 390.
- Smythe (2007) Retrieved March 9, 2008 from <http://www.articlesbase.com/finance-articles/causes-of-business-insolvency-280634.html>
- Vesper, C. (1996). *New Venture Experience*, Revised Edition. Seattle, Vector Books, p. 300.
- Xiaoyan Xu and Yu Wang (2007) School of Management, University of Science and Technology of China, Hefei, Anhui 230026, PR China

INNOVATIVE TEACHING TO ENGAGE AND CHALLENGE TWENTY-FIRST CENTURY ENTREPRENEURSHIP STUDENTS: AN INTERDISCIPLINARY APPROACH

**Paul Lane, Grand Valley State University
Jodee Hunt, Grand Valley State University
John Farris, Grand Valley State University**

ABSTRACT

Students born into the digital age differ from students reared in earlier times, and from their professors. Because of neuroplasticity, the brain's ability to reconfigure throughout life in response to environmental influences, interaction with electronic devices affects brain structure and function. This paper explains how effective classroom teaching can accommodate changes in student learning styles and values. Students have a need-to-know, short-term, goal-oriented world view that contrasts with professors' value of life-long learning for learning's sake. Classroom processes developed for entrepreneurship classes that quickly engage and challenge students are effective and fun. Such processes are presented and examined here in the context of a workshop developed for faculty at the authors' university.

TWENTIETH CENTURY PROFESSORS AND TWENTY-FIRST CENTURY STUDENTS DIFFER

Today's college freshmen were born after 1990, raised in the digital age, and experience technology as an integral part of their everyday world. To illustrate this point with a quantified example, one of the authors asked students how many text messages they received in a day. By checking their cell phones, which most possessed, these students produced answers varying from zero up to 53. Assuming the 53-message student rested for six hours, that individual processed an average of three incoming messages every hour, and doubtless sent dozens of replies. How many text messages arrive on your students' devices while you are trying to get them to grasp a major point in your class? How many replies are sent during class sessions? According to Chris Gaylord (2008), the average cell phone user sends 286 text messages a month. If students average 10 text messages a day, imagine how many fingers are dancing on electronic devices in a typical lecture hall! This attention-grabbing competition did not exist when professors were students, and

illustrates the point of this article: professors and students differ in fundamental ways that affect how each functions- and understanding these differences should influence how professors teach so that students become engaged and enabled to learn.

Blackberries, I-phones, and other mobile communications devices are a source of constant interruptions. Even if set on “vibrate,” who can resist the temptation to check who is calling? For students this distraction surely competes with whatever is going on in the classroom, and if class seems uninteresting, the device’s signal gives a break from the monotony of sitting in a hard chair. Make no mistake; such distractions are a detriment to all types of cognitive tasks. For example, driving while multitasking, such as while speaking on a cell phone, causes driving performance to decline in a manner parallel to driving while drunk (Hamilton, 2008). While attempts to learn under the influence of a cell phone probably won’t lead to fatalities, they likely will harm student learning, because inattentiveness impedes all styles of learning.

Cell phones are not the only electronic distractions competing for our students’ attentions. Eighty-three percent of students possess at least three different electronic devices (Caruso and Salaway 2007), and those that feature ear buds have changed the environment of students significantly. Today, most students can create their own world through electronic devices that pipe music and commentary into their ears. According to Caruso and Salaway (2007), about 77% of students are equipped with ear bud-containing devices. How many of your students are using one ear to listen to what is going on in class and the other to listen to music, movies, radio broadcasts or other incoming information? Recently a student in one of the author’s classes gave an oral presentation while wearing an ear bud! What does it mean when students attempt to control the input they are receiving all the time? Does the constant input increase- or limit- the information that they take in? We don’t have answers to these questions, but certainly our students’ experiences are changed by this ubiquitous feature of their environment.

Many professors prohibit use of cell phones and electronic “toys” during their classes, but allow or even encourage use of laptop computers. Caruso and Salaway (2007) found that almost 74% of college students own laptops. While they do not all bring them to class, and both ownership and use will vary among college campuses, laptop computers are a growing presence in college classrooms. What are students doing on these laptops during class? Would high levels of class-unrelated activity suggest implementing a policy of banning laptops from lecture halls? Certainly not, but such a pattern does suggest revamping the classroom experience to better engage today’s students.

Beyond their momentary distractions, technological toys affect our students in more fundamental ways, in part by replacing activities like reading, writing, and lengthy conversation once used as entertainment but which simultaneously enriched learning. What happened to these intellectual opportunities for sustained engagement? They were replaced by interaction with electronic media. Marc Prensky’s (2003) work reveals that students invest an incredible amount of time interacting with digital media and technology. For example, the average 21-year-old has, in

total, spent more than 20% of his or her lifetime playing video games (approximately 10,000 hours), communicating on mobile communication devices (approximately 10,000 hours) or watching television (20,000 hours). In contrast, these same individuals, on average, have invested less than 3% of their lifetime in reading. Activities that are fast-paced, attention-grabbing and comparatively passive (e.g., television and video media provide visual and auditory representations of characters, settings and action) have replaced those that require sustained, focused attention and an active imagination, as old-fashioned books and radio dramas do.

Taken as a whole, the ubiquitous nature of electronic devices has changed the environment of students dramatically and seemingly permanently from the quieter, less-distracted environment of years past. These environmental changes aren't trivial. They affect the way our students approach and experience their education. While in many ways similar to scholars of decades past, today's students are different in some fundamental ways. Student performance in tasks requiring focused attention (e.g., reading) has declined while their ability to simultaneously pursue multiple tasks (e.g., instant messaging while watching television) has strengthened (Levine et al. 2007). Advances in technological devices parallel these changes in students' cognitive abilities. For example, a student recently suggested one of the authors update his mobile communications device because older cell phones only handle one or two contacts at once while the most recent models have the capability of managing four! Contemporary laptop and desktop computers routinely manipulate multiple programs simultaneously, whereas the original PC models of the early 1980's did well to run one or two without crashing.

These kinds of technological changes alter our daily experiences, thus individuals born in recent decades may possess the ability to deal more effectively with multiple simultaneous demands compared to those who grew up in earlier times. These same individuals tend to exhibit less ability for sustained focus- a skill necessary for traditional means of study, and one surely mastered by graduate-degree holding faculty. Simply put, faculty members are not the same as their students. Let's consider these similarities and differences from the perspective of our respective expectations.

How do faculty and student expectations of the collegiate educational experience compare? The companion surveys *National Survey of Student Engagement* (NSSE) and *Faculty Survey of Student Engagement* (FSSE) quantify faculty and student perceptions of student engagement. A total of 3,628 students at the authors' university completed NSSE in 2005 and 2007; 393 faculty completed FSSE in 2005 (Faculty Survey of Student Engagement 2005; National Survey of Student Engagement 2005; National Survey of Student Engagement 2007). Patterns emerging from these rigorous surveys are eye-opening, both in terms of the similarities and differences between faculty and students.

We can be confident that student experiences at the authors' university are generally positive; an overwhelming majority of open-ended student comments offered in 2007 characterize faculty as helpful, dedicated and "great," the academic curriculum as challenging, and the University as endearing (e.g., many students offered comments along the lines of "I love Grand Valley!")

(National Survey of Student Engagement, 2005). Similarly, while not quantified in the FSSE survey, faculty members at the authors' university also generally view their experiences favorably, collectively projecting an enthusiastic dedication to the institution and its students. A generally positive attitude is one trait faculty and students appear to share, and if students are not engaged while in the classroom, it's not because most of them aren't genuinely pleased to be there.

Further, faculty and student perceptions about some facets of the teaching and learning environment coincide, particularly those about course content or focus (Table 1). Opinions about the degree to which courses require students to evaluate the value of ideas or theories, apply theory or concepts to practical problems, encourage the use of computers in academic work, or exert a student's best efforts are remarkably similar, particularly for freshman and faculty. In sharp contrast, and supporting the premise of this paper, faculty and students have distinctly differing perceptions about the use of technology in and out of the classroom- and not necessarily biased in the direction faculty might expect. For example, professors at the author's university significantly *underestimated* student use of email to communicate with professors, as well as their use of electronic media, computers and other forms of information technology to complete academic work (Table 2). Ironically, even though professors deliberately created technology-based course assignments and were the frequent recipients of student email missives, both freshman and senior students perceived these technology-based events as being a more dominant component of their collegiate experience than did their professors! Thus, as outlined above, students and faculty differ in their past experiences with, current employment of, and expectations of use of technology in and out of the classroom.

Table 1

Faculty and student perceptions about college courses and educational experience. Values for faculty are the percent that responded that "50% or more" of students in their classes did the following survey item. Values for students are the percent that responded that they did the survey item "very often" or "often" during the 2005 academic year. Responses are categorized by lower-division courses/freshman or upper-division courses/seniors. Data are drawn from reports summarizing 2005 FSSE (Faculty) and NSSE (Students) survey results for the authors' university.

Survey Item	Faculty		Students	
	Lower-division	Upper-division	Freshman	Seniors
Judge value of ideas	65%	75%	59%	66%
Apply theory or concepts to practical problems or new situations	77%	88%	72%	76%
Course exams and assignments encourage students to do their best work	85%	91%	84%	78%

Table 2

Faculty and student perceptions about the use of computers and information technology in the academic setting. Values for faculty are the percent that responded that “50% or more” of students in their classes did the following survey item. Values for students are the percent that responded that they did the survey item “very often” or “often” during the 2005 academic year. Responses are categorized by lower-division courses/freshman or upper-division courses/senior. Data are drawn from reports summarizing 2005 FSSE (Faculty) and NSSE (Students) survey results.

Survey Item	Faculty		Students	
	Lower-division	Upper-division	Freshman	Seniors
Use email to communicate with professors	29%	42%	98%	92%
Use electronic media to discuss or complete assignments	41%	42%	89%	86%
Encourage/use computers for academic work	89%	95%	47%	59%
Courses or college experiences using computing and information technology	38%	35%	69%	80%

It is not only our experiences and expectations that differ, however. In all likelihood, the brains of students and their professors differ as well. While scientists have long known that brain configuration changes during development, it is becoming increasingly clear that an individual’s experiences (or environment) continue to alter the brain throughout adulthood, even into old age (Draganski et al., 2004; Kempermann et al., 2002; Cameron and McKay 1999). For example, elderly laboratory mice living in enriched environments experienced fivefold higher rates of formation of new brain cells in the hippocampus, an area of the brain associated with learning and memory, compared to control mice living in “boring” laboratory environments (Kempermann et al., 2002). Such changes in brain structure and function, collectively termed neuroplasticity, are an important component of learning at the neurological level. Neurogenesis (formation of new brain cells) and other structural changes in the brain are induced by environmental challenges, i.e., by the specific activities an individual undertakes, as well as an individual’s social environment. Young rats reared in groups exhibited significantly greater neurogenesis and superior performance in a swim-maze test compared to young rats raised in isolation (Lu et al. 2003), illustrating the importance of a stimulating social environment on brain development and learning.

Human brains are also affected by their environments and experiences. Neurobiologists compared brain scans of novice young adults who practiced juggling to those of a control group who did not; though their brains did not initially differ significantly, after three months of practice, the jugglers’ brains showed expanded grey matter compared to the control group, an expansion that declined three months after the jugglers ceased practicing (Draganski et al. 2004). In other words, simply by attempting to learn a new motor skill, the novice jugglers changed their brains- at least while they continued to practice. The bottom line is that what we do and what we experience, from infancy through old age, affects our brains.

It is not a stretch to conclude that, because technological gadgets alter the way we use our brains, technology can drive changes in brain structure and, therefore, cause differences between the brains of faculty and students. Susan Greenfield (2008) says the technology of the 21st century is changing our brains:

Our brains are under the influence of an ever-expanding world of new technology: multichannel television, video games, MP3 players, the internet, wireless networks, Bluetooth links - the list goes on and on (Greenfield 2008).

She goes on to explore the critical effects of prescription and non-prescription drugs on neurological structure and function. It is this dual influence, technology and pharmacology, which so profoundly alters human brains in our current industrialized society (Greenfield 2008). She considers these neurological influences to be an unprecedented crisis that's receiving far too little attention, a crisis that literally could reshape what makes us human. What can we do, as educators, to address this crisis?

This article discusses ways in which professors can deal with the influence of technologies on contemporary students, embracing the idea that students are different today than in years past, and thus old approaches to teaching may not work in today's entrepreneurial classroom. The ideas and processes presented herein comprised a workshop the authors developed for interdisciplinary colleagues who participated in a Teaching and Learning Conference at the authors' university during August, 2008. Its conceptual framework linked to James Zull's work (Zull, 2003; Zull, 2004; Zull, 2008), as he was the keynote speaker at the 2008 Teaching and Learning Conference which was the genesis of this paper. Zull (Fernandez, 2006) presents a neurobiological interpretation of learning, one rooted in the framework of David Kolb's learning cycle (Kolb, 1983):

- ◆ *We have a Concrete Experience,*
- ◆ *We develop Reflective Observation and Connections,*
- ◆ *We generate Abstract Hypothesis,*
- ◆ *We then do Active Testing of those hypotheses, and therefore have a new Concrete Experience, and a new Learning Cycle ensues.*

Zull restates this learning cycle more colloquially as first gathering information, then analyzing the information so it has meaning to the individual, followed by creating new ideas from this foundation of meaning, and subsequently taking action (Fernandez 2006). This learning cycle forms a continuous loop, as actions pursued as a consequence of completing the cycle once typically leads to more information gathering, analysis, creativity, and action. The question becomes: how does this concept apply to what professors do in the classroom?

Given the competition of electronics changing the brain, the capacity for it to change physically, and the need to enhance learning, what is the pedagogy for the first part of the 21st

century? Perhaps the hardest thing for faculty members to grasp is that the scientist are letting faculty know that there is the real possibility that the brains of the people in the seats may be different then the faculty members brains were when they sat in those seats.

Students do process differently. They have shorter attention spans, they want things to happen now, they seem to function on a need-to-know basis, and they face tremendous competition for their time and energy. Faculty members need to recognize that the competition of attention-grabbing technology is always present. Students do not necessarily want to learn the way their faculty learned- and some may not be able to learn in the same way. The challenge of teaching such students becomes especially exciting in a dynamic field like entrepreneurship. So let's explore how faculty can embrace this challenge.

A FACULTY WORK SHOP ADDRESSING INNOVATIVE TEACHING IN ENTREPRENEURSHIP...OR ANY APPLIED DISCIPLINE!

Our ideas for engaging and teaching 21st Century students will be presented sequentially, just as faculty participants experienced them in the workshop the authors developed and offered at the request of their university's Faculty Teaching and Learning Center. This center opened in 2002 and, like similar institutions at other universities, facilitates faculty development through conferences, workshops, and individuals consultations. Faculty members readily take advantage of these offerings: in 2005-06, 58% of the faculty participated in at least one of the center's events, and a substantial number of individuals (90 in 2006-07) seek individual consultations (2006 and 2007 Annual reports of the center). Given the collegial environment of professional development that pervades our university, we were eager to step up and share our ideas with colleagues from across diverse disciplines

The challenge given to us at the end of summer 2008 was to deliver a workshop to faculty from across a wide range of disciplines to help them reach students whose brains are wired differently from our own. Our workshop followed the keynote speaker James Zull, who addressed the biological basis of learning, including the idea that brains are altered by our environment. Rather than present a power point outlining the techniques we had used successfully with our entrepreneurship students, we instead treated the participating faculty like enrollees in one of our entrepreneurship classes, to experience for themselves, for better or worse, the differences of our approach. Structuring the workshop in this way was a risky strategy, but a very effective one.

There were fewer than two dozen participants in the workshop, ideal for the unusual, hands-on activities we had planned. While the techniques are readily implemented in larger classes, given the brief duration of the workshop, we wanted to work with faculty in a more intimate setting with ample opportunity for meaningful exchanges. The workshop started much like an initial class session taught by the authors in entrepreneurship, with a brief welcome, an explanation that the syllabus was available on line, and, for consultation purposes once innovation projects were under

way, the cell phone number of one of the faculty for 24/7 access. The very idea that professors would avail themselves for learning when the student was ready seemed new and different to some of the faculty.

Faculty were grouped into teams and challenged to come up with a team name. This exercise engages students and workshop participants alike, drawing them away from other distractions, and helping them to focus on the subject at hand. Immediately afterwards, a second engagement exercise was employed where the students (or, here, workshop participants) do something of meaning to themselves. In this case the faculty “students” created, as a group, a list of ways in which faculty and student life- and learning styles differ- a topic certainly of great interest to faculty (Table 3). As a follow-up to the summer workshop, the authors had students complete the same exercise during the fall 2008 semester, thereby generating student perceptions of differences between faculty and student life- and learning styles (Table 4). The contrast between faculty and student perceptions is eye-opening. Emerging immediately is the pattern that students tend to be focused on short-term problems, function on a need-to-know basis, and seek skills and information linked to solving problems and gaining employment, or useful in other concrete, applied ways; in contrast, faculty members have a long-term, discipline-specific perspective, with a want-to-know world view where knowledge is valued for its own sake and abstract thinking prized (Tables 3 and 4). Given these differences, how should faculty structure their classes to best reach their students?

Table 3	
Faculty-perceived differences between student and faculty life- and learning styles. Items were generated during a brief faculty workshop held during summer, 2008.	
Faculty	Students
Print Material	Electronic Information
Want-to-know/Curious	Need-to-know
Longer Attention Span	Shorter Attention Span
Discipline Focused	Problem Focused
Theory/Generate Questions	Job Placement
Coffee	Energy Drinks
Risk-takers	Peer Learning
Knowledge for Knowledge's Sake	Knowledge to Attain a Goal
Reading/Content-based Resources	Sound Bites/Visual Multi-media Resources
Abstract to Concrete	Concrete to Abstract

Table 4 Student-perceived differences between faculty and students	
Faculty	Students
Their jobs/Professional/Get paid/Permanancy/Established	Self-centered/short term satisfaction/live for the moment/Insecure
Think as a whole	Think as one
Weekend Homework	Weekend Fun
Think about family/housing/cars/family lifestyle	Here to get a job
Retirement funds	Time Management/sometimes on time
Short-term thinking/Think long term	Friends! Friends! Friends!
Testing Knowledge	Acceptance
Proven Methods	Long –Term Thinking/Goals/Look towards the future/short term
Active in chosen fields/focus on one subject/ Expert/Confident	Meeting People/Personal Relationships/ social/party Lifestyle/ on our own/ friends
Fund Themselves	Technology/on line
Self-improvement/Motivation	Video Games/Music
Not as materialistic	Impatient/Task oriented
Socialize face to face, talk like old folks	Socialize through technology
Traditional/old fashioned/By the book	Everywhere/unfocused/ADD/Have to adapt
Not selfish	Pay
Come from everywhere	Live close to campus/housing issues
Go to bed early	Stay up late
Get to set the goals	Visually inclined /prefer visual teaching
Focus on Teaching/Lecturing	College has many purposes
Oral teaching style	Listening/New age
Don't care about individual students	Talk like our generation/casual/vocabulary
On time/organized/schedule-driven/time management/	Focus on grades/less organized/scattered/ short-term/temporary
Higher income	Low income/cars
Readings/Books/Paper based	Asking questions/Making more mistakes

This second group activity not only highlighted differences in student and faculty perspectives, it also encapsulates a core concept that guides the authors' teaching, the belief that students and other learners become more engaged in learning when they can see some relationship

between the course and themselves. Learning then becomes a personal investment. For workshop participants, the self-generated list of perceived differences between faculty and student learning styles (Table 3) provided an opportunity to brainstorm about products and services that could be developed to make life better for a contemporary cohort of traditional students (i.e., 18-22 years old, born between 1986 and 1991). The product and service ideas generated by this group of middle-aged faculty are shown in Table 5 below.

Dial-a-professor 24/7	Critical skills session
Nap cubes	Nutrition advising
Relaxing yoga breaks	Accommodations to individual lifestyle
Question pads	Attention to diverse learning styles
Outdoor classes	24 hour university
Posting lecture notes	Time management class
Spare time at end of lecture for private help	Integrated learning/living center
Midterm evaluations	Better facilities/ larger classrooms
Tutoring	Less commuter campus focus
Small classes	2-semester classes
Continuity class group (cohort)	Alum visitors
Texts vs. ipods/podcasts	Intuitive/ integrated classroom technology
Drug 4 reading	Breakfast/energy drinks for 8am classes
Exercise/lifestyle changes	"to do" social career related
E-tutoring	Mentoring external to GVSU
More integration between fields	More integration between classroom and social activities
Laptops for all students	Think and act more cosmopolitan
Study abroad	Internships

Armed by their own experiences with these initial two exercises, the workshop participants' discussion turned to how faculty could use similar processes to engage students in their own disciplines. That is the real challenge: applying the ideas in day-to-day classroom situations in a diversity of settings and disciplines. Hopefully, as the authors have experienced in their entrepreneurship classes, faculty who employ these techniques will find it a much more involving educational process for their students.

The dividends to this style of teaching really emerge in the learning that goes on in today's classroom. Despite all the electronic distractions present, if classroom activities are fun and interesting, students quickly become engaged. In teaching entrepreneurship, students really enjoy their work when it involves challenging each other or working as a team. Once engaged, students readily progress to learning and applying theoretical concepts. For example, when examining the importance of costing in an Entrepreneurship course, a lecture might be boring and ineffective, whereas a hands-on activity with inexpensive items both engages and challenges students even as they gain a deeper understanding of the concept. The authors have employed simple ballpoint pens for exactly this purpose. The students first disassemble the pens, account for each component, then estimate the cost of each piece as well as the labor necessary to assemble the components. The fact that many individuals struggle to reassemble the components correctly adds levity to the exercise while also driving home the importance of having trained personnel. All the while, students internalize the idea that mastering methods of costing is critical.

Following engagement, students need to master skills and concepts, and build connections among them. To illustrate these steps, the authors had workshop participants delve more deeply into idea development by completing a second brainstorming exercise drawn from the interdisciplinary field of sustainability, thereby giving faculty participants an opportunity to apply the processes explored above to a question far afield from their own disciplines. The question posed was, "what could the university do to be more sustainable?" This question was selected intentionally. Because thoughtful answers to this question required genesis of ideas for solutions and their implementation, it provided participants an opportunity to develop ideas more fully and in more detail than they had in previous exercises.

A simple but effective feature of this brainstorming exercise was the use of colorful Post-It notes for noting each individual idea. By the end of the exercise, each group generated large, colorful heaps of ideas, each written on a single note and placed in piles on the (preferably round) table. This simple technique works brilliantly in entrepreneurship classes. Because the colorful, idea-bearing Post-It notes can physically be moved back and forth, the process really gets students (and workshop participants) involved. An added benefit is that, even though the activity is fast and furious, no one feels like concrete work is being disrupted.

Faculty participants were next asked to group their ideas into concept categories. The authors have found in their classes that having the ideas written on physical pieces of paper allows for great discussion and constant movement as teams think critically about how to organize fifty or hundred ideas into logical piles. Maybe in the first attempt they create twenty piles, in the second 14, then nine, and finally 11 concept piles are created. It is amazing to watch the arguing, shuffling and reshuffling that ensues as participants struggle to sort the rough ideas into some semblance of a logical framework. After much discussion of the ideas, and movement of the colorful notes, a reasonable set of concepts emerge from what initially appeared to be chaos. In the workshop setting, faculty participants were informed that, given more time, students enrolled in semester-long courses

would be asked to develop the concepts further, supported by sketches and a written statement. In the time constraints of the workshop, however, faculty participants simply had to sort their ideas and give each concept-pile a name, and this they were able to do quickly.

In an entrepreneurship course taught by two of the authors students are instructed to develop models of their ideas. Many envision some kind of brick-and-mortar retail space, while others conceptualize a virtual retail enterprise. Regardless of their vision, each student must produce a model for examination and discussion. Once presented with a model, classmates pepper their peers with a multitude of questions that really make the budding entrepreneurs think as they build connections. How many square feet are required? Where are the rest rooms located? Where will the space be located, and how expensive are leases in that area per square foot? What does “triple net” mean in a lease? How high are taxes? Such conversations provide a lot of fodder for student learning- but it is the faculty member’s responsibility to maintain student engagement throughout these processes, and to link concepts introduced early on to those explored later in the ideation process.

Faculty workshop participants were next introduced to the concept of screening, explained as a process that generates and applies criteria to ideas and which provides additional opportunity for critical thinking by students via the delivery and application of the screen. Because of time constraints, faculty participants were provided with a sustainability screen previously developed by students in a summer course on Socially Conscious Innovation (Lane, Farris and Fauvel, 2008). This screen included five criteria, or components:

- Planet
- People
- Profit
- Process
- Perpetuity

These five criteria in hand, workshop participants examined their sustainability ideas and evaluated whether each accomplished anything positive for the earth’s ecosystems (planet), social equity (people), or current or future bottom line (profit). These criteria comprise the traditional three-legged stool of the Triple-bottom Line approach to sustainability, but students in the summer Socially Conscious Innovation class had developed the additional criteria of process and perpetuity. They were not satisfied with a building being LEED Certified (U.S. Green Building Council) if its residents did not process their day-to-day waste stream in a sustainable way, thus they added the idea of an ongoing process. The Socially Conscious Innovation students had also added the criterion of perpetuity to be sure that, once implemented, their plan would go on and on. While applying this simple criteria screen to their ideas, the faculty participants quickly realized that they had to interpret the five criteria and subsequently apply them. This phase of the innovation process always leads to a lot of discussion and concomitant critical thinking in entrepreneurship classes.

An important point here is that exercises can be fun and engaging for students while simultaneously developing critical thinking skills in the classroom. This fundamental truism is easy to overlook, and, sadly, sometimes difficult to employ because of physical limitations of classrooms. Many faculty members teach in classrooms featuring physically affixed tables or desk/arm chairs, both associated with educational environments of the 20th century. The teaching techniques relayed here, and perhaps, because of their learning styles, many of our 21st century students, benefit from an education environment that is structurally flexible. Such flexibility is particularly important when students (including workshop participants) are asked to stretch their abilities and take risks—something the faculty participants were next challenged to do.

For the last portion of the workshop, faculty participants were guided through decidedly unfamiliar territory. They were given some background on Little Corn Island, a tiny Caribbean Island off the eastern coast of Nicaragua. This island population represents a microcosm of contemporary human societies, including a rapidly growing population depending on a declining food base. The residents of Little Corn Island exist without access to much fossil fuel-derived power, fresh water, or resources other than the sea surrounding the island. Workshop participants were challenged to generate ideas for sustainable products that the island residents could develop and market locally. This challenge represented a risky venture into the unknown for the faculty participants, as it would for students. Of course they asked many questions. Eventually they realized that students (and they) could look up information on line, or call or text-message a friend who had visited there— in a word, that they were empowered to glean information very quickly from sources all over the world. Students, unlike the faculty participants, seem to get this point immediately and quickly look up information such as the island's topography and geothermal potential. Students function on a need-to-know basis, and under circumstances like those presented to the workshop participants, this was one of those situations! This insight was a major take-home message for the participants.

After a short time grappling with the problem, armed with laptops and perhaps newly found information about the island's level of poverty, its beautiful reef formations, or the twice-daily runabout that transports supplies, tourists and island residents, faculty participants really began to think about things. This type of exercise represents much more of a stretch as, unlike student needs or campus sustainability, none of the workshop participants knew anything about Little Corn Island in Nicaragua! The idea of employing such an exercise in the classroom is to get students to recognize the power of a brain stretch, thereby involving students by challenging them to put down the distractions in their lives and come up with truly novel ideas.

Each faculty participant was next instructed to select one solution idea and produce a sketch. Like students, they initially resisted, but then jumped in with abandon, adding more and more detail. They began to take a chance with their thinking. For students to innovate they must allow themselves to experiment with and develop new ideas. The first job is getting them involved—exactly what the faculty participants were learning. During the workshop, participants huddled over

their tables, conversing intensively. In a quick conclusion to the exercise, faculty shared their sketches and others evaluated with comments.

During this portion of the workshop, the instructors emphasized the pedagogical advantages of sketches compared to written descriptions of products. Producing and evaluating sketches forces students to consider scale (in this situation, would the designed object fit onto the small runabout pangas that service the Corn Islands?), resources needs (what materials are needed to produce the object?), design (how would such an object be built?), societal factors (would residents actually use such a product?), and other aspects of product development. The significance of the sketches in a class is the discussion that takes place during its generation and presentation. Sharing of the sketches does not take long, and is a powerful means of getting students serious when built into the rhythm of a class. This process engages students entirely, stimulates intense conversation and critical thinking, and is a great deal of fun!

APPLYING THE IDEAS IN OTHER DISCIPLINES AND FACULTY ASSESSMENT

To bring their experiences full circle, faculty participants were challenged to think of ways that the processes they'd just experienced could be used in their own courses, thus incorporating a reflecting thinking exercise into the workshop just as professors might do in class. One professor mentioned he could use it to build class unity in the beginning of his course. Someone from another discipline volunteered that this kind of thinking might help students to challenge and test perceived facts. Before long almost every participant had thought of at least one way in which they improve their syllabus or their course by implementing what they'd learned in the workshop. Bridging the chasm between undeveloped "aha!" moments and implementation of the ideas in particular courses requires additional time and thought, however. Fortunately, resources are available to help with building such a bridge. Books like *Cracking Creativity* (Michalko, 2001) suggest ways to get people thinking about novel combinations of ideas. While the constraints of the workshop prevented participants from developing their ideas fully, even the brief time available was sufficient for faculty to generate good ideas they could later develop and implement in their classes.

The Teaching and Learning Center assessed each workshop in the day's conference, later providing the authors with the evaluations of the innovation and entrepreneurship workshop. The assessment instrument included three open-response questions: 1) What was the best feature of this workshop? 2) What would have helped make the workshop better? 3) How do you plan to use what you learned in your own teaching? Unedited responses to each question are summarized in Tables 6-8 below.

Table 6

Participant responses to the assessment question: what was the best part of this workshop? Verbatim responses are grouped into three categories: comments linked to the structure of the workshop, those linked to teaching and student learning, and those addressing a diversity of miscellaneous topics

Structure	Students	Other
The facilitators—good teamwork; well organized presentation	Learning how to engage students in a pro-active manner.	All exercises/ activities were very useful for me
Pushing participants through a learning/problem method & instruction.	It offered practical advice to improve the way students interact with one another & class concepts	Witnessing dynamic team teaching
Working on a concrete problem step by step	Learning about different ways of learning	Used several area we would be dealing with after the Keynote (models of learning)
Applied hands on	Discussing what might get some students more involved	
The way the activities set up the concepts so that the concepts registered quickly		
Format		
Collaboration aspect –brainstorming –sketching		

Table 7

Participant responses to the assessment question: what would have made the workshop even better? Verbatim responses are grouped into three categories: comments linked to the structure of or lack of specific examples in the workshop, those linked to applicability of the workshop's contents to a particular participant's teaching, and miscellaneous comments.

Specificity	Application	Other
Outlining first what the workshop would cover	Greater applicability to humanities—focused courses—I teach medieval literature, so integrating hands-on drawing (for example) is tricky.	A problem I knew more about (I have very little knowledge of how to change one energy to another)
Less complicated examples for a bit less time on activities then they get the point	Spend a little more time on how to apply these to our classes	This session went well.
More specific examples from your classes	Maybe tie in to keynote address	I came in late, so n/a
More specific examples of various methods + how they help include more students		More time

Table 8	
Participant responses to the assessment question: how do you plan to use what you learned in today's workshop? Verbatim responses are grouped into two categories: comments linked to how participants will apply the workshop's ideas to their teaching, those linked to uncertainty about applying the ideas to their teaching	
Will use	Unsure
In several class sessions that deal with concepts of research methods	Not sure—but will think about it! Thanks for your time + expertise
Encourage collaboration + group activities. Seek problems for students to apply to coursework	I'm thinking still
I will absolutely use it in my GIS & NRM capstone courses!	Use this as an example of how to team teach well.
Have students brainstorm and then evaluate/ screen their own ideas.	Not sure
Incorporate more brainstorming sessions/ group activities	
In evaluating portfolio papers	
Parts of it can be used for a class/ lecture on infectious diseases/ outbreak investigation.	
I want students to <u>evaluate</u> their initial paper ideas for potential advantage before they start.	
Will apply to class I'm teaching this fall.	
I will use absolutely all of it in my fall courses (GPY412 global environment change, GPY410 Landscape Analysis)	

What do students really need- and want? How can we BEST teach them?

Many faculty members want to learn new ways to teach today's students. Although the authors understand how to apply these methods in a number of settings, more work is required to develop the ideas and techniques for application in a greater diversity of disciplines and to solve a greater range of problems. One of the ways this might happen is in interdisciplinary team-teaching in broad areas like sustainability or social justice. We envision that a faculty member who learned these methods in the authors' context of entrepreneurship and innovation could develop them for application in entirely different fields by working with a colleague from another discipline, for example, teaming faculty members in tourism and ecology. Such partnerships could work if the partners seek to get students more involved, or to expand learning in the changing academic environment. Zull (2003) and Greenfield (2008) make the point that student minds are changing,

and that is not a discipline-specific problem. The opportunity is out there to attempt to take new methods across the disciplines.

Some may view this kind of learning as risk taking. Suddenly, professors feel out of control. Preparing for a new semester no longer consists of updating notes first generated a decade ago for presentation in 50-minute or three hour lectures. If the goal is learning, perhaps it is better to think of flexibility in learning styles. Would we go to another culture and expect students there to act in the same ways as our students? Why then, if our culture is changing so rapidly, would we expect students to remain the same? Maybe approaching teaching in creative ways is not risk-taking at all, but instead realizing that learning can be fun. Is there anything wrong with making learning fun? Isn't helping students think in new ways a *good* thing? Students continue to be amazing. How do you make *your* classroom fun?

One of the challenges, and the joys, of teaching in the future may be to break the bonds of content and focus more on *learning*. We teach in a world where students have ready access to information via mobile communication devices and laptop computers bolstered by satellite internet connections to anywhere in the world. What do they really need from their professors? Do they need only content, or do they need to learn how to think, to challenge, to innovate using the vast amount of information so readily available to them. Perhaps our greatest challenge, and our students' greatest imperative, is to help them learn to want to learn, to challenge, to innovate. Guiding them to these priceless discoveries, helping them to become self-motivated lifetime learners, will help the next generation, and those to follow, to meet the challenges left by those who have gone before. Surely this is our greatest quest, and one where we must not fail.

ACKNOWLEDGMENTS

Catherine Frerichs (GVSU FTLC) encouraged us to develop and present our ideas in a faculty workshop. Julie Kelley kindly provided the concept of the pen example.

REFERENCES

- Cameron, H.A., & R.D. McKay (1999). Restoring production of hippocampal neurons in old age. *Nature Neuroscience* 1999(2), 894-897.
- Caruso, Judith B. & Gail Salaway (2007). *The ECAR Study of Undergraduate Students and Technology, 2007*. Educause Center for Applied Research. September 2007. Retrieved September 15, 2008, from <http://net.educause.edu/ir/library/pdf/ERS0706/EKF0706.pdf>
- Draganski, Bogdan, Christian Gaser, Volker Busch, Gerhard Schuierer, Ulrich Bogdahn & Arne May (2004). Neuroplasticity: changes in grey matter induced by training. *Nature* 427 (22 January 2004), 311-312.
- Faculty Survey of Student Engagement (2005). *FSSE 2005 Executive Summary and Frequency Distributions* for Grand Valley State University.

- Fernandez, Alvaro (2006). The Art of The Changing Brain: Interview with Dr. James Zull, *Sharp Brains*, October 12, 2006. Retrieved September 15, 2008, from <http://www.sharpbrains.com/blog/2006/10/12/an-ape-can-do-this-can-we-not/>
- Gaylord, Chris (2008). As texting prices climb the number of texts sent climbs even gaster. *Christian Science Monitor*. Retrieved September 15, 2008, from <http://features.csmonitor.com/innovation/2008/09/11/as-texting-prices-climb-the-number-of-texts-sent-climbs-even-faster/>.
- Greenfield, Susan (2008). Modern technology is changing the way our brains work, says neuroscientist. *Mail online/Science & technology*. Retrieved September 15, 2008, from <http://www.dailymail.co.uk/sciencetech/article-565207/Modern-technology-changing-way-brains-work-says-neuroscientist.html>
- Hamilton, Jon (2008). Multitasking in the car: just like drunken driving. *Morning Edition, National Public Radio*. Broadcast October 16, 2008. Retrieved November 22, 2008, from <http://www.npr.org/templates/story/story.php?storyId=95702512>
- Kempermann, Gerd, Daniela Gast & Fred H. Gage (2002). Neuroplasticity in old age: sustained fivefold induction of hippocampal neurogenesis by long-term environmental enrichment. *Annals of Neurology*. 52(2): 135-139.
- Kolb, David A. (1983). *Experiential learning: experience as the source of learning and development*. Upper Saddle River, New Jersey: Prentice Hall.
- Lane, P., J. Farris & A. M. Fauvel (2008). *Socially Conscious Innovation*. Working Paper..
- Levine, Laura E., Bradley M. Waite, & Laura L. Bowman (2007). Electronic media use, reading, and academic distractibility in college youth. *CyberPsychology and Behavior*. 10(4):560-566.
- Lu, Lin, Buobin Bao, Hai Chen, Peng Xia, Xueliang Fan, Jisheng Zhang, Gang Pei & Lan Ma (2003). Modification of hippocampal neurogenesis and neuroplasticity by social environments. *Experimental Neurology*. 183 (2003): 600-609.
- Michalko, Michael (2001). *Cracking Creativity*. Berkeley, California: Ten Speed Press.
- National Survey of Student Engagement (NSSE; 2005). NSSE 2005 Executive Summary and Frequency Distributions for Grand Valley State University.
- Oblinger, Diana (2004). The next generation of educational engagement. *Journal of interactive media in education*. May, 2004 (8): 1-15.
- Prensky, Marc (2003). Digital game based learning. *Exploring the Digital Generation*. Educational Technology, U.S. Department of Education.
- United States Green Building Council, Leed Rating Systems*. Retrieved October 17, 2008, from www.usgbc.org/DisplayPage.aspx?CategoryID=19

Zull, James (2003). What is the art of the Changing Brain? *New Horizons for Learning/News from the Neurosciences*. Retrieved October 8, 2008, from www.newhorizons.org/neuro/zull.htm

Zull, James (2004). The art of changing the brain. *Educational Leadership*, September, 2004: 68-72.

Zull, James (August, 2008). Teaching and the Biology of Learning. Presented to *Grand Valley State University 2008 Teaching and Learning Conference*, Allendale, Michigan.

ENTREPRENEURIAL AND ACCOUNTING EDUCATION THROUGH ACTION-BASED LEARNING: THE GENESIS PROJECT

Thomas Gstraunthaler, University of Cape Town
Stuart Hendry, University of Cape Town

ABSTRACT

Entrepreneurial education should constitute the heart of every business school throughout the world. Despite this imperative, there is still little known about learning processes which equip future entrepreneurs with the right mindset and skills. This paper sets out lessons learned and insights gained, about these learning processes, from the Genesis Project at the University of Cape Town. The Genesis Project is the core course in the Postgraduate Diploma in Entrepreneurship and is run out of the School of Management Studies, which is situated in the Faculty of Commerce at UCT. The course is taught to fourth year students and is designed to provide an intensive action-learning platform in a highly entrepreneurial environment from which students delve into and explore key aspects of entrepreneurship such as creativity, innovation and risk-taking. Participating students were interviewed three times throughout the academic year 2008/2009 to track their learning processes. It is the contention of these authors that in order to develop entrepreneurs one must focus first and foremost on developing an “entrepreneurial mindset”, an ability to think and act creatively and an ability to take risks. Only then do the technical aspects of entrepreneurship, for example, drawing up a business plan and cash flow, become relevant. The paper concludes that entrepreneurial education should take more social and political aspects into account to prepare students with the necessary understanding of social dynamics.

INTRODUCTION

Entrepreneurial activity is the backbone of every economy and is praised by many as a means to overcome poverty (Beck & Demirgüç-Kunt, 2004; Venter & Neuland, 2005). South Africa, considered the leading economy in sub-Saharan Africa, is no exception. Driven by its export orientated economy, the country has enjoyed times of significant growth. Despite great success stories, the majority of South Africans still live in poverty, with the average unemployment rate at 25%, one of the highest Gini Coefficients in the world and adult illiteracy estimated at a startling 60%. It is not surprising therefore, that Co and Mitchell (2006) state; “it is now widely held that the only way for South Africa to effectively address unemployment and revitalize the economy is

through the rediscovery of the entrepreneur who takes risks, breaks new ground and innovates” (p.348).

Now, this approach is not indigenous to developing countries. The UK Government for example has seen enterprise as a vital contributor to economy’s health and expressed its commitment to make the UK the best place in the world to start and grow a business and started a nationwide drive towards an “enterprise culture” (DTI, 1998; SBS, 2002, 2003). Lots of first world initiatives for entrepreneurial education were often triggered by specific policy initiatives (e.g. Chapman & Skinner, 2005) like Cambridge-Massachusetts Initiative (CMI), Higher Education Innovation Funds (HEIF), plus investments through Higher Education Academy (HEA) Subject Centres, Enterprise Insight (EI), National Council for Graduate Entrepreneurship (NCGE), etc. In contrast, most programs in developing countries are rooted in individual initiatives and often involve private business people.

To fight unemployment and poverty, it is imperative that South African higher education institutions find and develop young entrepreneurs who are capable of taking risks, breaking new economic ground and playing an innovative and proactive role in moving South Africa onto the world economic stage.

Most South Africans, particularly young black South Africans have had very little or no exposure to private business. Although they make up the majority of the potential labour force (90%), black South Africans represent a very small percentage of entrepreneurs. Already in 1995 the BMR (1995) concluded that, “for the Black population to compensate for the economic imbalances arising from the proliferation of their labour force members – and disregarding the backlog of workers not in employment – they will have to expand their entrepreneurial cadre in the formal sector 11 times over the period of 20 years”.

The statistics paint a rather bleak picture. The GEM report (2006) stated that, in South Africa, the Total Early-stage Entrepreneurial Activity or TEA (global average rate 9,43% and developing countries 14.8%), is only 5,29%. This means that only 5,29% of the adult population in South Africa starts its own business (GEM report, 2006). Reasons for this very low figure include (1) an education system that does not encourage entrepreneurship, (2) South Africa’s harsh attitude toward failure (including business failure), (3) the lack of an entrepreneurial “paradigm”, (4) a severe shortage of leadership and managerial competence, (5) a lack of accounting and accountability and (6) a lack of entrepreneurial flair amongst start-up initiators.

Educational programs to enhance entrepreneurial activities are central for business schools and similar institutions all over the world. A major point of debate is the question how to best train future entrepreneurs, that is, if entrepreneurship can be taught at all. We followed the arguments of Gibb (2002) and introduced an action-oriented, experimental approach to enterprise education, based on evolutionary theory. Thereby we were able to train our students to focus on entrepreneurial outcomes and have them experience the processes and the context which makes these achievements possible. Experimental learning also fosters creativity and the use of peer evaluation (Jones &

English, 2004). More often than not, universities and business schools struggle with the necessary flexibility to provide such a learning environment (Matlay & Mitra, 2002). The University of Cape Town is no exception. Despite all that, we agree with Henry et al. (2003), that programs like these are effective and strongly beneficial for aspiring entrepreneurs. Thereby, we fulfill Whitehead's claim that it is the role of the university is to preserve the connection between knowledge and the rest of life and to trigger within students an urge towards new creative adventures (Jones, 2006).

In South Africa, lots of entrepreneurial activities align with Reynolds et al.'s (2004) categories of "opportunity entrepreneurship" and "necessity entrepreneurship". As the government offers to securitize smaller loans for previously disadvantaged groups, many individuals take that opportunity (hence opportunity entrepreneurship) to become entrepreneurs. On the other hand, due to the immense unemployment- and poverty rates, many people are forced to start any business and often copy other models that they see in their surroundings (necessity entrepreneurship). For the present study, we consider entrepreneurship as creating new forms of new enterprise, or, new forms of business activity (e.g. Davidsson & Wiklund, 2001). We did not include any of the former entrepreneurial activities into our consideration.

This paper concentrates on the learning processes triggered through engaging in entrepreneurial activities. The research was conducted during the Postgraduate Diploma in Entrepreneurship at the University of Cape Town. Situated within the School of Management Studies (within the Commerce Faculty), the core course is called The Genesis Project and is taught to fourth year students. Inter-alia, the course is designed to provide an intensive action-learning platform, in a highly entrepreneurial environment, from which students delve into and explore key aspects of entrepreneurship such as creativity, innovation and risk-taking. To best capture the learning processes of the students, the authors met with the groups three times during the duration of the program, a period of a whole academic year. The interviews revolved around concepts like leadership and management, but also investigated how students perceived the usefulness of accounting tools. The authors asked specifically for the student's experience and in which situations the learning process took place.

This paper explores how students in an action-based learning environment learn about entrepreneurship. In this particular setting, the students are all exposed to classic confrontational teaching. Equipped with theoretical knowledge about business tools, students explore the usefulness of the teaching content in the context of their own start-ups. This paper explores how students make sense out of concepts like leadership or management and business tools, as part of their process, towards becoming an entrepreneur. This is in stark contrast to other programmes which stop exactly there – with the transfer of theoretical knowledge.

The learning process discussed in this paper is not happening in the classroom but is self-reflective. The students decide freely which business tools to apply and in which degree of detail. Thereby, the students reflect on what they have done right and wrong. They learn the hard way how to apply the tools and quickly decide for themselves which tools are useful and which are not.

This paper also provides insight into how new entrepreneurs would use the content they learn from educational programs designed to foster successful entrepreneurial activities. This paper will explore how students on the Genesis Programme at the University of Cape Town, learn to cope with the challenges of setting up and running their own businesses, develop into entrepreneurial managers and leaders and develop a keen understanding of, and a need for, effective accounting practice that allows them to understand their businesses, holds each other accountable and allows them to report effectively to their stakeholders.

LITERATURE REVIEW

Besides some very thoughtful papers (Priilard, 2008), South African entrepreneurship education has not received much attention from academic research. Some published works have analysed the methodology applied in some South African universities in teaching entrepreneurship (Kroon & Meyer, 2001; Davies, 2001). Co & Mitchel (2006) assessed the state of development of entrepreneurship education by looking at how important entrepreneurship education was for South African higher education institutions. In their study, based on a questionnaire, they concluded that the “entrepreneurship education in South Africa is in its developmental stage”. They noted an increasing commitment from the institutions in academic, research and outreach offerings in entrepreneurship, but pointed out that teaching and assessment methods rely strongly on traditional classroom delivery.

Other research addressed the cultural shortcomings in South Africa which have led to a lack of entrepreneurial activity and looked at ways of overcoming these. Without any significant engagement into the reasons for these shortcomings, Kroon et al. (2003) criticised the very passive role business people played with regard to educating the next generation of entrepreneurial employees and potential entrepreneurs.

In their article, Nieuwenhuizen & Kroon (2002) argue that the educational system should be supported by economic and political institutions to foster an entrepreneurial culture in society and to ensure the facilitation and actual establishment of enterprises.

Contemporary entrepreneurial education is arguably limited in its teaching methods. Most business schools still rely on the canon of methods which were already listed by Klandt (1993) like reading, lectures, guest speakers, case studies, on-site visits, research papers, thesis/dissertations, and workshops. Also Co & Mitchel (2006) claimed that the courses offered, together with the methodologies used for teaching and assessment, would be still teacher-centred, but acknowledged some of the more interactive and participative programs offered in the country.

On the other hand, there is a significant amount of business-related research which relates to accounting education. So far, most of the literature focusing on accounting education deals with the classical educational paths to prepare students for a career in accounting. Teaching accounting as a subject in business schools was essential to allow for the creation of a professional identity.

There is a great deal of work on the university and initial professional education stages and continuing professional development. This paper provides many references to the classical accounting education literature, in particular for those courses which are designed to offer accounting education for non-accountants. However, the development of professional accountants is not the focus of this paper. Rather, this paper wants to explore how students, learning to become entrepreneurs, learn about accounting and its uses.

Entrepreneurs are characterized by innovative behavior with the main goal of obtaining profit and growth (Sexton & Bowman, 1984). These individuals require a certain acceptance of risk and the willingness to use their “gut feelings”. The prevailing understanding – particularly of business schools – is that any aspect of entrepreneurship can be passed on through classical educations (Garavan & O’Cinneide, 1994). It remains to be seen whether the entrepreneurial mindset can be taught in a classroom at all.

Still, there is little evidence for this position (Sexton & Bowman, 1984; Hills, 1988; McMullan & Long, 1983; Vesper, 1982). Hindle & Cutting (2002) point out that empirical tests are in poor supply. Some writers even state a negative impact of entrepreneurship education on the entrepreneurial spirit (Gibb, 1987). Due to decision-making under insufficient information (or no information at all) entrepreneurs operate on the basis of trust and competence of those involved (Garavan & O’Cinneide, 1994). In contrast to the entrepreneurial mindset, the processes, practices, and decision-making activities involved in entrepreneurship is summarized by (Lumpkin & Dess, 1996) as entrepreneurial behaviour, which can be taught in business schools. Teaching entrepreneurial behavior includes opportunity identification, strategy development, resource acquisition and implementation (Knight, 1991), negotiation, leadership and creative thinking and exposure to technological innovation and new product development McMullan and Long (1987). Gibb (1987) suggests developing an independence from external sources of information and expert advice, and use of feelings, attitudes and values outside of information as improvements for entrepreneurship education. Davies & Gibb (1991) advocate including concrete experience, reflective observation, abstract conceptualization and active experimentation. The latter proved to be particularly suitable for stimulating entrepreneurial behavior (Garavan & O’Cinneide, 1994; Ulrich & Cole, 1987).

The problem with the teaching of business tools applied by entrepreneurs as a substitute for entrepreneurship itself can be demonstrated through the example of planning. Planning has always been regarded as a cornerstone of management (Gulick, 1937; Fayol, 1949; Koontz & O’Donnell, 1955). At the same time, there has been considerable debate in the management literature about the actual merits that planning activities bring for organisations. While some studies have documented a positive impact of the extent of planning on performance, others have cast doubt at the existence of such a causal relationship (for reviews, see Pearce, Freeman & Robinson, 1987; Boyd, 1991; Greenley, 1994). The question of the value of planning has also, and more specifically, been addressed in the entrepreneurship literature (see Gruber, 2007 for a recent review). In young

companies (so-called “new ventures” or “start-ups”), plans may be of particular relevance, since these companies do not yet have much experience which they could use as a substitute for planning. One may, however, also argue that sophisticated planning practices are less relevant in start-ups, given that these companies often operate in turbulent environments which demand quick action rather than extensive deliberation. Indeed, the entrepreneurship literature is divided about the relative merits of planning activities, with some authors stressing the possible benefits of planning (e.g. Block & MacMillan, 1985; Matthews & Scott, 1995; Shane & Delmar, 2004) and others warning against excessive planning (e.g. Bird, 1988; Allinson, Chell & Hayes, 2000; Carter, Gartner & Reynolds, 1996).

Notwithstanding this discussion, surprisingly little is known about the ways in which business plans are actually used in new ventures and to which extent they are considered useful by the entrepreneurs and managers themselves. In quantitative studies, business planning is often treated as a “black box” and approximated with rather crude measures. Such an approach is arguably instructive for understanding broad patterns concerning the existence of a business plan, its level of detail, or the frequency of its modification. However, it leaves somewhat unexplored the dynamics of business planning over time, and the details of how and why plans are actually used (see Gartner & Birley, 2002).

Shedding light on these details seems worthwhile given that knowledge of entrepreneurs’ actual experiences with planning can provide for a better understanding of why planning assumes a different role in some new ventures than in others. As such, an inquiry into actual business planning practices can serve to correct too optimistic views on business planning. Indeed, the business press often promotes the writing of a business plan as being indispensable for entrepreneurs’ decision-making, but tends to do so without resorting to systematic empirical evidence. Clearly, the mere existence of a business plan does not allow making an inference as to its actual use or perceived usefulness. It may well be that two organisations both have a business plan, but that they use them in rather different ways, and consider them useful in different senses.

ABOUT THE GENESIS PROJECT

The Genesis Project is the action learning axis of the PDE – Postgraduate Diploma in Entrepreneurship, which is presented by the School of Management Studies at the University of Cape Town. The Centre for Higher Education in South Africa recently acknowledged, by means of a CHED award, the collaboration between the Genesis Project and its core course; Entrepreneurial Strategies (BUS 4047F), as an excellent example of collaborative educational practice which addresses the challenge of providing meaningful opportunities for postgraduate management students to develop their entrepreneurial skills within a professional context, while also providing an excellent example of how to facilitate learning through student collaboration. The Genesis Project

has been running for more than 15 years and has become a benchmark for education both about and for entrepreneurship.

The Genesis Project runs over the course of one year and is an intensive training programme which focuses on developing leadership, management and accounting skills in a highly entrepreneurial environment. Over this period, candidates are required to set up and run their own business. They are expected to combine the state-of-the-art leadership and management theoretical training which they receive, with an intensive action-learning component which is their Genesis Business.

Candidates form Genesis Groups at the beginning of the year and then spend the rest of the year learning what it takes to hone this group into a hard working team capable of achieving group business objectives. Students are required to form their own groups. Students are required to set up groups that represent the class demographic in terms of ethnicity, gender and nationality. Typically, each year sees the formation of eight such groups. Students are required then to come up with their own theme based business ideas, to prototype these ideas, to cost them, attract start-up capital to produce and market them and sell the product. Any profit they make is theirs to keep. To date, the record net profit for a Genesis group is R54 000 (2009). Finally in mid October students are required to close down their businesses thereby moving through the complete business cycle from start up to business closure. In 2009, four out of the eight businesses re-opened so that they could carry on trading.

In the Genesis process many mistakes are made and this is pivotal to the learning experience which is shadowed by a facilitator, with whom they meet once a week, and a set of directors who sit on boards to whom the student groups must report on a monthly basis. Financials, strategic plans and sales objectives are all closely monitored by the board, whose role is not so much to tell students what to do – but to encourage critical thinking.

In addition to this process, students are required to develop a viable business model, to convert this to a plan, and then to present this plan to a local bank, Standard Bank, in an effort to acquire a start-up loan.

Hard learning accrues as students apply their course-work theories to the practice of running their own businesses. Students are encouraged to take risks. Innovation and creativity are rewarded. Inevitably mistakes are made and in the process of getting it wrong, students are encouraged to interrogate their mistakes and question their operating assumptions in order to improve.

Genesis has several unique action-learning components: The “Cake Sale” exercise. In week three of the programme, students are required to run a cake sale exercise whereby they convert a R50 start-up loan into confectionary of any sort which they then sell into the market. This exercise is ostensibly an opportunity for the students to develop start up capital for their business, and yet the group and individual learning that takes place is exponential. The primary learning takes place as members of the group learn to collaborate with each other. If they are to succeed as a business, they are required to succeed as a group first. There is also a wonderful collaboration between the group

and the rest of the students on campus, who essentially become the target market. UCT Facilities also collaborate to make the exercise a success, ostensibly by turning a blind eye to the annual invasion of muffin-wielding entrepreneurs on campus. The successful groups spend time conceptualising their confectionary product, planning their five day production process and actively developing and delivering their production, marketing and sales strategies. Students are then required to reflect on the process in the form of a compulsory report which captures key learnings acquired. This exercise is later repeated in order that learnings may be reapplied. Cake Sale 1 and 2 Reports count for 10% of the project mark. It is important to note that the Cake Sale Exercise is now accompanied by the Introduction to Finance course (BUS1005F), as well as the Introduction to Business Management course (BUS1004F).

Students are required to submit a Group Diary. The Diary is a very important part of the reflective aspect of the action-learning process. This academic document is required to capture daily entries on group experience, group challenges and group process and then in particular to capture the learning that follows. The diary is kept by individuals in the group, on a one week rotational roster. The Genesis Group Diary is a compulsory exercise and contributes 10% of the final year mark. The reflections in Cake Sale 1 Report and Group Diary prove extremely useful during Cake Sale 2, which is held one month later. Cake Sale 2 is one of the few practical examples where students actually get to apply their learning during their academic year in a practical manner. Given the fact that the theme of the Genesis Product incorporates “Student Market” every year, Cake Sale 1 and 2 provide very useful experience for the Genesis Product Launch which takes place early in the second semester.

The already noted Genesis boards constitute a further powerful example of the level of collaboration that takes place in Genesis and a key component of the Action-Learning process. Each board is made up of Genesis Directors, who are chosen based on their Director level experience in both the Corporate and Enterprise Sector. Genesis boards are 25% black empowered, 35% female and the average length of service is 4 years. Each Genesis board meets the following minimum requirements: a director with an academic background, a director with a finance/accounting background and a director with a marketing/sales background. Each board also contains a PDEM student from a previous year. This collaboration with UCT Alumni has proven to be an extremely useful part of the learning curve, as past students bring real insight into the demands and rigours of Genesis. Genesis directors volunteer to meet with the students on a monthly basis, where they act as advisors and mentors. Although the Genesis board meetings provide active experience of what it means to work with directors, students are also evaluated by their directors. Directors’ evaluations follow key themes throughout the year such as Group development and accountability, product innovation, marketing, sales strategy and business closure. Students are also evaluated on their ability to report on their activities and conduct an effective board meeting. Directors’ evaluations count for 20% of the final year mark. Directors’ evaluations are always discussed at the next Genesis

meeting, where the Directors' comments form the basis of an opportunity for students to reflect on their experience with their Directors.

FINDINGS

It was interesting to see that at the beginning of their year, most of the students appeared to share a very similar view on the role of leadership. A leader was largely described as a visionary person who had ideas and shared these ideas with the group. He or she was depicted as a very inspiring person, motivating others to achieve great things for the betterment of the whole group. The leader was personified as “the knight in shining armour on his white horse”.

There is a strong perception among students at the beginning of the year that good leaders are born and not made. In the beginning of the year, students also seem to have very limited experience of the difference between leadership and management. They struggle to supply basic definitions of either term and often seem to confuse the roles. Towards the end of the year it was clear that students had a much clearer definition of leadership as opposed to management. The leader had lost his white horse and most of his charisma. Instead the leader was seen as somebody who could also step back and not override others but rather listen to their ideas. They give meaning to their followers and empower them.

The Leader gets everybody together. He (or she) makes sure that they are running the right race, not just running the race right.

This was also reflected by the fact that most groups did not assign roles to their team members right from the start, but rather left it open. One team described leadership as a shared role:

Leadership can be shared. Every team member might be a leader in a different aspect – because they are passionate about different things.

Another group recognized the specific mindset of a leader. They pointed towards the importance of intuition in the leadership role and associated leadership strongly with entrepreneurship:

The Leader does something different. Someone who knows that being able to ask the right questions is invariably more important than having all the right answers.

Innovation! Leaders can innovate and teach others to be innovative. Get the people to achieve a common goal. Leaders pick up something until it takes up momentum – until things get done.

Later in the course, the students began separating leadership from management by associating the first concept with having a vision and extraordinary imagination. The latter in

contrast was associated more with the implementation. Students saw more of a craftsmanship in management. In the last interview, many groups pointed out that management was driven by efficiency – orientated towards making the most out of a given input or reaching a certain set goal with the least input. With this separation of leadership and management, many of the students experienced that the roles can be played by the same person at the same time.

It was quite difficult for many of us to know when to be what. You need to know when to be a leader or when to be a manager. You develop a feeling when the company needed a leader or when the group was short of management skills.

But what if there is no leader, only managers? One group struggled with a lack of leadership in particular. After a guideless Cake Sale 1, the group actively screened the team members for leadership abilities and would not enter the following stages without a designated leader. It was not the absence of leadership per se that triggered their concern but more the quest to trust the tasks to the right leader. Their view, although originally also strongly driven by a very democratic and participative leadership style, shifted after the first Cake Sale into a more individually orientated understanding.

We found out that maybe one person, a team member who is a well respected and has a stronger personality should take over the lead. It took us a long time. But now we found that person. We all are really happy about that.

Despite the focus on leaders, their leaders also had to have strong management capabilities. In their last interview session they revealed that it was not only about finding the right leader but also about managing the people in the incorporation of their ideas.

We had one or two individuals who led the whole process. We appointed leaders at different stages. No conflicts of ideas. Leaders to projects. Talking about track records. The follow through capability was important. To listen to other people's ideas and incorporate it.

Still, appointing leaders can also happen by chance. The chair of another team told the researchers how he got into his role. Everybody was passionate about a specific task but he was not. So he became the chair. His colleagues described him as very visionary, so he stayed as the chair. Other groups had rotating chairs – with varying success.

Another group decided to rotate jobs. This crystallization of a very democratic leadership that allowed everybody to be in lead for a short period of time.

Not everybody had a specific job. We moved around. We thought that the best work was done by the person that was most enthusiastic about it. You slip into your role and we could learn from each other.

Yet, in the last session one group reported that it ran into a deadlock as nobody really wanted to make decisions. Also, they revealed that nobody wanted to take painful cuts or to punish others for underachieving because they knew that soon they will be replaced by another group member.

When we ran into conflict, nobody was in a strong enough position to solve it. It took us three months to develop the procedures necessary to overcome this.

Yet two companies agreed on different roles for each team members. In their final statement after the course, the group revealed that allocating a specific role to each team member added additional complexity because the role descriptions came from very abstract concepts they had learned in the classroom and proved unsuitable for their business.

We allocated very specific roles to each member in the very early stage of the business. These roles ranged from Accounting, to PR, Marketing and Administration. These roles were placed in the Shareholders Agreement with a very brief description of each, and while each member was confident of what their responsibilities were and they were well aware of what they believed the company expected from them, these roles were designed, defined and allocated with inexperience and a general lack of knowledge. The roles did not reflect company activities, and many operations were left without a clear leader or team, which meant that throughout the year, leaders had to be elected on an ongoing basis, which had a negative impact on accountability, and proved to be extremely time consuming and tedious.

As part of their training, students were taught Introduction to Corporate Finance. Here they received lectures in the basic concepts of accounting like cost accounting, budgeting and other financial planning methods. In addition to that, students received training in financial accounting. There were no guidelines or pressure on the students to implement any of these tools, except from their directors. Rather, students should experience the usefulness of the various tools by themselves. The interviews focussed especially on managerial accounting, financial planning, financial control and financial accounting. Students showed a very positive attitude towards accounting tools, managerial accounting in particular. This did not come as a surprise due to the lecture series they had enjoyed previously. In the later interview sessions, inquiries were made about the experiences the students had with the use of the accounting tools. Without exception, all the groups had trouble in adjusting their managerial accounting processes to their business needs. Particularly in the field of financial planning, the students struggled to get the mixture of detail right. The teams were very reflective on the use of the tools. All groups reported how positively they experienced these tools, but they all concluded that it was a long process to get the numbers right and to have the procedures in place. Two groups mentioned their difficulties in implementing procedures to ensure a timely and complete compilation of the data.

What we learned from Cake Sale 1 was to set clear goals. For us it was not problem to agree on the numbers, what we struggled with was where do the numbers come from? That was the hardest bit. We

now understand why you need an accountant. He collects the numbers and delivers them to others who want them.

You do it for yourself—it is more of an art. You become good over time. It was a lot of trial and error. In the end, we concentrated on break-even scenarios. We focussed on certain numbers, like how many units do we have to break even, how many for R10 000 profit. That was very useful.

Most groups had cost capturing procedures in place and engaged in scenario planning. Few derived real targets. Those which did reported how useful they found these goals to align the effort of the entire group.

For us, it was very useful to start from our cost side. We strived to do the best we could. We wanted to make a profit of R20 000. We worked our way backwards. We already made R10 000 from Cake Sale 1. So now we wanted to double it. And it was R2 000 more than the best group from last year. It was a big learning process. At Cake Sale 1 we never had goals. This was a particular problem. The knowledge was vital. So we have significantly improved our accounting.

We did worst case planning for all our events. Like what happens on a specific day, like the exhibition days.

Another group made it the responsibility of the project leaders to implement management accounting procedures and to plan in line with the data.

We gave all our team members specific roles. So our members always knew when we would break even. And we had different scenarios for Cake Sale 2. Now we have a spreadsheet in which we combine all the different projects under different scenarios. We followed this procedure until now. For example we analysed how much money would we get from Brownies. How much stock did we use. How much do we need to produce. These were facts. The good thing was that we didn't have to argue anymore.

Cake Sale 1. was estimation and done by rule of thumb. Once all the brownies were sold, we made new ones. In Cake sell 2 we had the knowledge! This allowed us to act more strategically – and to make so much more money.

The groups all learned in different ways and at different speeds. One group reported that they structured their accounting system with a keen eye for attention to detail.

Paying attention to detail is important. You need to tick off every single one of these things. You have to know what is going on. Numbers are important for everyone to know. For the whole group. How much did we sell? It is very important that your numbers are transparent.

Most teams used financial control in one way or the other. Mostly it was to ensure that the goals – if agreed on previously – were met. Groups also used financial controls to find out why they

failed to achieve goals. What was interesting to see was how the groups interpreted the data and how they grew as a team.

We have the tendency to go over. That is also true for sales. At the beginning we were a little bit too conservative. Now we are more realistic. Now we have much more trust in all of our team members. If things have to be done, they get done. At the beginning it was a test in the water. Now we know it will be done by a certain day. But we needed these controls. They are a very good reality check.

Some learning processes were less useful.

We looked back: We blamed the weather, the short day, and some other people.

Financial controls were also used to discipline group members. What seemed to be a simple practice turned out to be trickier than originally thought. Groups did not struggle with the controls per se, but how to enforce them. Particularly for groups which were already struggling to keep the team together, enforcing these controls was often seen as making things worse. The interviews revealed that teams with little or no leadership showed less willingness to enforce controls and to build in a structure of accountability.

This was one of our most significant weaknesses. We never enforced it. Our controls covered pretty much every aspect. This was much to our detriment. We tried to get consistency. We had a lot of tension in our group, so we didn't want to make it worse. That's why it was not enforced. Also because we didn't have a leader. Now we started to be accountable and have a system in place now. It works much better now!

Also in the field of financial control, the groups struggled to design a system that served their needs.

We are relatively casual! Trust led us to believe that we were doing the right thing. Which is naïve. We needed more control. Certain procedures. What happened? Why and where the money went. When they spent money. It was written in the partnership agreement. Bring the required numbers! Do the financials. Use of figures: We needed to assess what sold well. Assess the funding. It took us almost the entire length of the course to agree on a system to capture every detail of money spent by any group member.

Throughout the second interview, many of the participating groups mentioned their experiences with planning their revenues. After their product was designed and production started, their focus rested on sales. The students struggled most with incentive-based systems. Their starting point was a strong cooperation between equals, with very limited leadership. Thereafter, some groups decided to build up a more competitive environment. One group used their planned earnings as an incentive factor.

We had strong controls in place. But the system focused on punishment, not recognition. If one person had a role and did not deliver to our standard, someone else took over. We just swept it under the carpet. Then, we worked on an incentive based system. And yes, it works quite well. Michael is in the lead. He will grab the majority of the R20 000.

In contrast to managerial accounting and financial control, financial accounting was seen as less important and few really tried to make use of financial accounting to communicate with their directors. Rather, they gave the directors whatever they demanded.

Our financial reporting covers spreadsheets and sometimes even graphs. It needs to be done. You need to understand where you sit. It is very inconvenient, but necessary. Our directors wanted certain things. They told us to use a standard balance sheet. It provides freedom if you get your financials right. It also helps if you understood your financials. What has to be reduced?

Although most of the students did not see much of the benefit of financial accounting, some groups mentioned their learning experience in regard of their understanding of financial accounting.

I am excited about accounting now. It was great to apply it to the Cake Sales. We learned how to apply and factor the situation in. This was awesome. For the financial accounting you hire someone to sit behind your desk. You have to learn it.

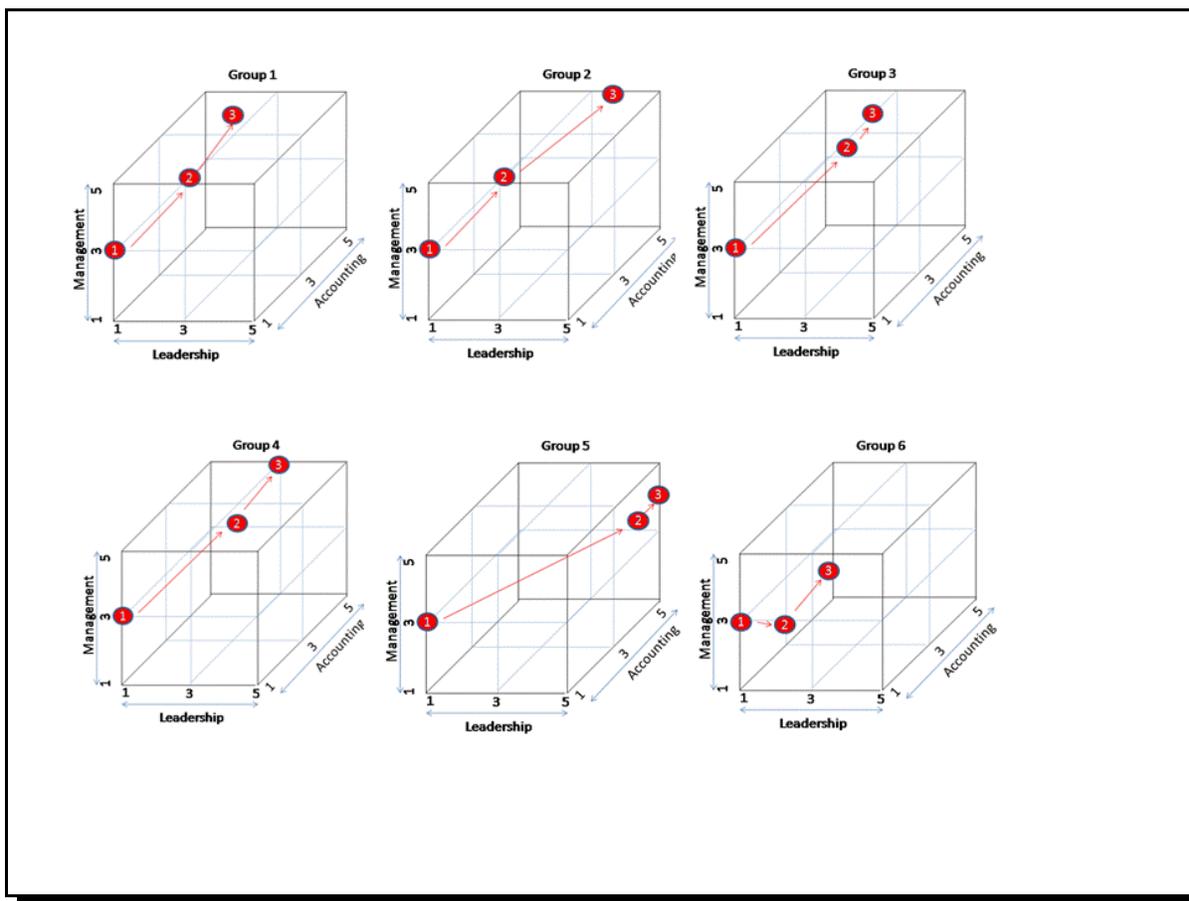
THE GROUPS

After the interviews were conducted, the authors tracked the learning experience of the students through plotting the answers on a 3 dimensional grid system (see Figure 1). One axis represented their approach to leadership, with 1 representing a very participative understanding of leadership to 5, representing an autocratic leadership style circling around one or two individuals. A second axis plotted their advancements in management, from an unstructured management style by learning by doing to a structured one, in which the system was laid out to be more systematic and reflective. The third dimension dealt with the use of accounting as a combined value of management accounting, financial accounting and financial control (1 accounting is hardly in use to 5 the group strongly uses on accounting).

The first interview was done before the groups actually started to work, and it showed a strong coherence of the answers in leadership as being very participative and management as being neither very structured nor unstructured. Therefore, all groups started with a leadership value of 1 and a management value of 3. The value of 3 allowed us to track a move towards a more structured or a more unstructured management style. In terms of accounting, the students appreciated the importance of accounting, but didn't have any practical experience and didn't fully understand the differences between e.g. financial and managerial accounting. All groups were assigned a value of

1. Hence, all of the groups started from the same position of 1 for leadership, 3 for management and 1 for accounting.

Figure 1



Not surprisingly, the biggest learning happened in the course of the first cake sale, when the groups for the first time had to work together as a fully grown enterprise. Yet, the learning experience differed significantly between the groups. In most of the groups, the biggest movements are seen in the importance of accounting (Group 1 to 5). The reasons for this were different. Group 1 for example ran into major difficulties with their board of directors because of their bad accountability at the end of cake sale 1. Their directors forced them into a major overhaul of their accountability structures and the group complied. Still, management remained quite unstructured and the group suffered from a lack of leadership. The same is true for group 3. Despite the fact that the creation of more accounting was enforced through external influences, group 1 started to use

these numbers and incorporated them into their management, leading to doubled revenue in cake sale 2. An interesting case could be seen at group 5. This group experienced the use of accounting all by themselves, without tremendous pressure from their board of directors. In addition to that, the group soon ascribed responsibilities to the individual team members and held them accountable. Despite their high score through interview 2, they even strengthened their accounting system further through the third phase. Group 5 did best throughout the Genesis project and will be discussed in detail in the next chapter. Group 4 started off with quite differentiated views on how to conduct business. The more prudish group members started to lead and the group agreed to make sure that there were enough reserves to survive eventualities. In line with this strategy, they looked for alternatives to cut costs. Therefore, accounting became the combining language of an otherwise rather incoherent group. In the later stage, the group managed to align their management style with the accounting numbers. Group 6 ran into major problems with group dynamics and was caught in internal disputes which didn't allow them to introduce a strong system of accounting.

THE TOP PERFORMING GROUP

The most successful group offered a very insightful case. The group decided to produce a Chillanket – a unique cross-over between a blanket and a night gown. The Chillanket was made from fleece and was effectively a very comfortable, very useful way to stay warm in winter, whether you were relaxing on a couch watching television or sitting at your desk trying to study. This Chillanket was easy to brand, which made it very attractive to local corporates as a corporate gift. Sales depended strongly on a cold winter.

We started off with very detailed market research. We had to find out what people are willing to pay. The market research also identified possible competitors. We wanted to produce cheaper than them. Our costs were up to R75, so we decided to set the price of sale at R150.

Still, they could not easily keep their plans as the prices for fabric skyrocketed. So the group searched for a replacement supplier.

We planned on R15 rand per metre and then the price went up to R24 per metre. The season worked against us. Suppliers run out of stock. Eventually we found places selling the fleece for R28 a metre. We had to drop our price to remain competitive. We did a lot of retrospective analysis. We wanted to find out where we could have made more money. Through our accounting we found that we could have done much better. From that moment we sold at the highest price possible. No more limited offers to boost our volumes. We raised our profits significantly if we sold our products at R180.

Out of this process the team developed a very detailed planning process. Due to the dependency on the weather the group planned to sell most of the products in June and July. Thereby they always had a very clear understanding of their targets.

We worked with money that we had. We wanted to make sure that we got the most out of it by cutting down on expenses. We focused on what you should have at the end and tried hard to reach our break even in units. Our accounting showed us opportunities. We should have done planning before the beginning of the holidays. We realised that blankets could be sold much better in Johannesburg, where most of our people spent their holidays. Then we would have sold out. We should rather have spent R300 on bus fare to Johannesburg, where we could have sold an additional 50 blankets. We got more and more prudent and focused more on our planning.

The group focused their attention on the Cash Flow which was the main tool to communicate with their directors. The group set targets which they tried to fulfil.

We had milestones, like dates when we wanted to sell a certain number. We spoke about it with our group members and explained why we didn't reach our targets. We didn't compare on a regular basis. Towards the end we did. It was very chaotic until now.

The milestones were also used to communicate with directors. And it helped. It was interesting that, after the first round, the directors were very supportive and gave remarkably good marks.

The group understood the need for an elaborate system of controls as they did not reach their targets for a second time.

We put friendship aside and brought the shareholder agreement back in. Why you are falling short of your work, others are doing it. We haven't been very accountable. If some of us were late or were not pulling their weight, we ran into big problems. We are good friends. We were scared of hurting other people's feeling. Yet nobody wanted to let the group down – this was our form of accountability.

What became most prominent was a lack of adequate performance measurement and that many group members wanted to have some reward for their efforts – especially those who did the work for others.

We decided to focus on the sales targets: the amount of individual sales. This was the most important performance measure. We have agreed that the one that sold the most should get the largest part of the profit.

The group concluded that they could have improved their performance if they had focused more on accountability right from the start. Otherwise, it was difficult to get the necessary acceptance from the team members.

Everything works if you have the question right. But you often don't understand it. It is so difficult to really do the books of a business. Little things you have to account for. Things like bank charges do make a difference. You often don't see the small things if you don't do it by yourself.

If I start a business now, the most important document would be the shareholder agreement. With lots of accountability.

CONCLUSION

The Genesis Project has proved highly successful as an action based learning program which not only instils an “entrepreneurial confidence” in students, but also teaches them the importance of effective accounting in a business environment. The experience of the students when confronted with real-time entrepreneurial decision-making showed that successful teaching has to go far beyond the classical “chalk and talk”, confrontational teaching methods. Although the students were educated in concepts like leadership, management and accounting techniques, the true learning processes happened when the students had to apply the theory in practice. Without exception, all the groups had trouble adjusting the managerial accounting theory to their business needs.

Without fail, all the groups neglected their accounting processes early on in their businesses and had to learn how to close this gap by themselves. It was interesting to see how quickly the groups adapted the accounting tools and used these for planning purposes, target setting, performance evaluation and communicating their financial performance and position to their stakeholders. Still, the reason for that learning process was different throughout the groups. Most groups were forced into a more structured approach to accounting by their board of directors. Some groups played along without using the numbers for their own information needs, whereas others realized the value of this source of information and successfully introduced their enhanced accounting into their management style. The best performing group however experienced the benefits of a strong accounting system all by themselves and in a very fast pace. Together with a leadership concept that evolved around a group-wide accepted leader and a structured management process with strong reflective elements, the group managed to reach an impressive result at the end of the Genesis project.

One of the most prominent challenges for the students was where to get their source data from and how to capture this data. In most teaching, these issues are not addressed at all. Rather, it is assumed that the data is readily available. Although the students quickly agreed that a strong database is vital for their decision making, the data could, at the same time, be used for financial control and for keeping the group members accountable. It was interesting to see that the two most successful groups managed to progress from being a group of friends into a company with clear financial controls, roles, responsibilities and accountability.

When comparing the groups, it became clear that the more successful groups collected as much market data as possible. Many of the teams struggled until the end with the trade-off between the cost of data capturing and the usefulness of the data in the decision making process. The groups engaged in trial and error processes which were very helpful for their learning processes. With the maturity of the teams the groups moved from the product design phase to the sales and marketing phase. With this shift, came the introduction of competition. The most successful groups understood

the need to reward the best sales persons and tried different performance measurement and incentive systems.

All of the groups experienced problems with the enforcement of financial controls, that is, holding individual group members accountable and enforcing sanction on those group members who had not delivered. Students were confronted with the social and political challenges of group accounting and accountability. It is the contention of these authors that these aspects of effective accounting are often neglected in today's lecture halls. Our research shows that students did not really see much benefit in setting up traditional financial statements but were more successful in developing and using their own accounting and accountability processes which suited their specific group needs. The most effective entrepreneurial focussed training will therefore not only provide a significant action-learning opportunity for the students, but also additional support and training on how to lead and manage the accounting and accountability processes within a group. It is advisable that accounting education as part of entrepreneurial education should focus more on the social and political implications. The rich academic literature in these fields would provide a starting point.

REFERENCES

- Allinson, C., E. Chell & J. Hayes (2000). Intuition and entrepreneurial behavior. *European Journal of Work and Organizational Psychology*, 9, 31-43.
- Beck, T., A. Demirgüç-Kunt & R. Levine (2004). Finance, Inequality, and Poverty: Cross-Country Evidence. *NBER Working Paper Series*. Vol. w10979.
- Bird, B. (1988). Implementing entrepreneurial ideas: the case for intention. *Academy of Management Review*, 13, 442-453.
- Block, Z. & I.C. MacMillan (1985). Milestones for successful venture planning. *Harvard Business Review*, 63, 184-196.
- Boyd, K.B. (1991). Strategic Planning and Financial Performance: A Meta-Analytic Review. *Journal of Management Studies*, 28, 353-374.
- Bureau of Market Research (BMR) (1995). *International Market Insight*, BMR, Pretoria.
- Carter, N., W. Gartner, & P. Reynolds (1996). Exploring start-up event sequences. *Journal of Business Venturing*, 11, 151-166.
- Chapman, D., & J. Skinner (2006). Collaborations, courses, and competitions: Developing entrepreneurship programmes at UCL. *Education & Training*, 48(5): 386-397.
- Co, M.J. & B. Mitchell (2006). Entrepreneurship education in South Africa: a nationwide survey. *Education & Training*, 48, 348-359.

- Davidsson, P., & J. Wiklund (2001). Levels of analysis in entrepreneurship research: current research practice and suggestions for the future. *Entrepreneurship Theory and Practice*, 25(4), 81-99.
- Davies, L.G. & A.A. Gibb (1991). *Recent research in entrepreneurship*. The Third International EIASM Workshop. Gower.
- Davies, T.A. (2001). Entrepreneurship development in South Africa: redefining the role of tertiary institutions in a reconfigured higher education system. *South African Journal of Higher Education*, 15, 32-9.
- Department of Trade and Industry (DTI) (1998). *Our Competitive Future: Building the Knowledge Driven Economy*, DTI, London, White Paper.
- Fayol, H., (1949). *General and industrial management*. London: Pitman.
- Garavan, T.N. & B. O’Cinneide (1994). Entrepreneurship education and training programmes: A review and evaluation—Part 1. *Journal of European Industrial Training*, 18, 3–12.
- Gartner, W.B. & S. Birley (2002). Introduction to the special issue on qualitative methods in entrepreneurship research. *Journal of Business Venturing*, 17, 387-395.
- Gibb, A.A. (1987). Enterprise culture - Its meaning and implications for education and training. *Journal of European Industrial Training*, 11, 3–38.
- Gibb, A.A. (2002). Creating conducive environments for learning and entrepreneurship: living with, dealing with, creating and enjoying uncertainty and complexity. *Industry & Higher Education*, 16 (3), 135-48.
- Greenley, G.E. (1994). Strategic Planning and Company Performance: An Appraisal of the Empirical Evidence. *Scandinavian Journal of Management*, 10, 383-396.
- Gruber, M. (2007). Uncovering the value of planning in new venture creation: A process and contingency perspective. *Journal of Business Venturing*, 22, 782-807.
- Gstraunthaler, T. & P. Cramer (2011). Let’s make money – the South African financial system for start-up companies, forthcoming.
- Gulick, L. (1937). Notes on the theory of organization. In: Gulick L & Urwick L (eds.). *Papers on the science of administration*. New York: Institute of Public Administration, Columbia University.
- Henry, C., F. Hill & C. Leitch (2003). *Entrepreneurship Education and Training*, Ashgate, Aldershot.
- Hills, G.E. (1988). Variations in university entrepreneurship education: an empirical study of an evolving field. *Journal of Business Venturing*, 3, 109–122.
- Hindle, K. & N. Cutting (2002). Can applied entrepreneurship education enhance job satisfaction and financial performance? An empirical investigation in the Australian pharmacy profession. *Journal of Small Business Management*, 40, 162–167.

-
- Jones, C. & J. English (2004). A contemporary approach to entrepreneurship education. *Education & Training*, 48 (8/9), 416-23.
- Jones, C. (2006). Enterprise education: revisiting Whitehead to satisfy Gibbs. *Education & Training*, 48(5), 356 – 367.
- Klandt, H. (1993). Methods of teaching: what is useful for entrepreneurship education. *Proceedings of the Conference on Internationalising Entrepreneurship Education and Training*, InkEnt '93, Vienna, July 5-7.
- Knight, R.M. (1991). A proposed approach to teaching. *Journal of Small Business and Entrepreneurship*, 9, 43–54.
- Koontz, H., & C. O'Donnell (1955). *Principles of Management*. New York: McGraw-Hill.
- Kroon, J. & S. Meyer (2001). The role of entrepreneurship education in career expectations of students. *South African Journal of Higher Education*, 15, 47-53.
- Kroon, J, S. de Klerk & A. Dippenaar (2003). Developing the next generation of potential entrepreneurs: co-operation between schools and businesses? *South African Journal of Education*, 23, 319-22.
- Lumpkin, G.T. & G.G. Dess (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21, 135–172.
- Matlay, H. & J. Mitra (2002). Entrepreneurship and learning the double act in the triple helix. *The International Journal of Entrepreneurship and Innovation*, 3(1), 7-16.
- Matthews, C.H. & S.G. Scott (1995). Uncertainty and planning in small and entrepreneurial firms: an empirical assessment. *Journal of Small Business Management*, 33, 34-52.
- McMullan, W.E. & W.A. Long (1983). An approach to educating entrepreneurs. *The Canadian Journal of Business*, 4, 32–36.
- McMullan, W.E., & W.A. Long (1987). Entrepreneurship education in the nineties. *Journal of Business Venturing*, 2, 261–275.
- Nieuwenhuizen, C., & J. Kroon (2002). Identification of entrepreneurial success factors to determine the content of entrepreneurship subjects. *South African Journal of Higher Education*, 16, 157-166.
- Pearce, J.A.I., E.B. Freeman & R.B.J. Robinson (1987). The Tenuous Link Between Formal Strategic Planning and Financial Performance. *Academy of Management Review*, 12, 658-675.
- Priilaid, D.A. (2008). Lost voices: locating the entrepreneurial mindset within South Africa. Conference paper, *Entrepreneurship Development Conference 2008 “Youth Entrepreneurship for 2010 and Beyond: Unlocking, Unleashing, Empowering”*. Cape Town International Convention Centre 1 to 4 July 2008.
- Reynolds, P., W.D. Bygrave & E. Autio (2004). *GEM 2003 Global Report*, Babson College/London Business School, London.

- Sexton, D.L., & N.B. Bowman (1984). Entrepreneurship education suggestions for increasing effectiveness. *Journal of Small Business Management*, 22, 18–25.
- Shane, S., & F. Delmar (2004). Planning for the market: business planning before marketing and the continuation of organizing efforts. *Journal of Business Venturing*, 19, 767-785.
- Small Business Service (SBS) (2002). *Small Business and Government – The Way Forward*, SBS, London.
- Small Business Service (SBS) (2003). *Building an Enterprise Culture*, SBS, London.
- Ulrich, T.A., & G.S. Cole (1987). Toward more effective training of entrepreneurs. *Journal of Small Business Management*, 25, 32–39.
- Venter, D.J., & E.W. Neuland (2005). *NEPAD and the African Renaissance*. Johannesburg: Richard Havenga & Associates.
- Vesper, K.H. (1982). Research on education for entrepreneurship. In: Kent CA, Sexton DL & Vesper KH (eds). *Encyclopedia of Entrepreneurship*. New Jersey: Prentice hall, Englewood Cliffs.

THE MYTH OF ENTREPRENEURSHIP EDUCATION: SEVEN ARGUMENTS AGAINST TEACHING BUSINESS CREATION AT UNIVERSITIES

Arndt Lautenschläger, University of Applied Sciences Jena
Heiko Haase, University of Applied Sciences Jena

ABSTRACT

The paper challenges the traditional view that entrepreneurship education (EE) is effective to raise entrepreneurial awareness and the number of start-ups. We present seven arguments that create doubts about the authorization of current EE at universities. The analysis suggests that most educational programs are nothing but temporary fashion. We claim that the deficits existing in entrepreneurial interests and abilities of young people are caused by rational oriented educational systems, which do not promote creativity, opportunity recognition, and problem solving abilities. The implications suggest to rather concentrate on the promotion of entrepreneurial soft skills than on teaching how to start a business.

KEYWORDS: Entrepreneurship education; Universities; Creativity; Teaching methods.

INTRODUCTION

In today's world, researchers and politicians report that the formation of new firms is crucial for economic vitality. It is assumed that the effects of entrepreneurial activities are beneficial in several respects. Firstly, new businesses have a strong impact on job creation (Autio & Parhankangas, 1998; Birch, 1981; Fölster, 2000), which is a fundamental goal of macroeconomic policies. Secondly, a dynamic process of new venture creation ensures the economy's welfare and augments its efficiency and productivity (Baumol, 1990). Thirdly, new firms act as a major engine for promoting innovation, realizing business ideas, and changing economic structures (Acs, 1996; Audretsch, 2002; Fritsch, 2008).

In this context, higher education institutions play a fundamental role. They traditionally represent a main source of new knowledge and hold a constantly regenerating stock of students and scientists. From that arises an enormous potential of ideas and special competences, which means an ideal basis for creating new firms. In fact, it seems that business ventures issuing from the academic environment have particular potential for growth and innovation (Roberts, 1991;

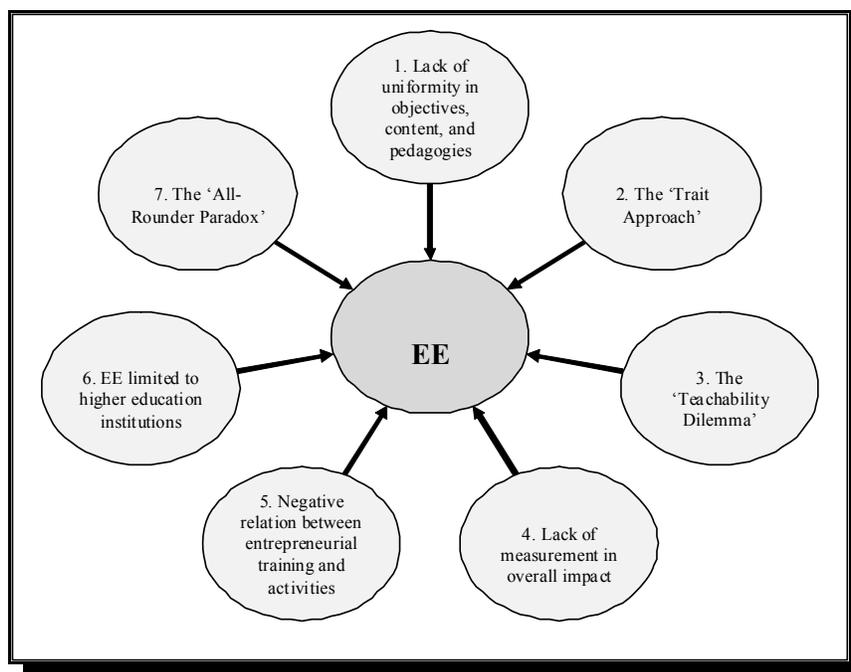
Steffensen, Rogers, & Speakman, 2000). For these reasons, universities are challenged to endow their students with the appropriate knowledge and skills on how to start and run a business, completing them by setting an entrepreneurial mind and raising awareness of business opportunities. As a consequence, entrepreneurship education (EE) at higher education institutions has gained tremendous importance and has nowadays even transformed into a global phenomenon. Its real development started in the Anglo-Saxon regions during the early 1970s (McMullan & Long, 1987), especially the United States as the pace setting country in the field (Solomon, Weaver, & Fernald, 1994; Katz, 2003). Over the past twenty years, Western Europe has made considerable progress in offering EE, in particular with regard to the Scandinavian (Rasmussen & Sørheim, 2006) and German-speaking countries (Klandt, Koch, Schmude, & Knaup, 2008). Recently, universities of Eastern Europe (Mitra & Matlay, 2004; Boyle, 2007), Asia (e.g. Rae, 1997; Dana, 2001; Lee, Lim, Pathak, Chang, & Li, 2006), and Latin America (Tiffin, 2004) are increasingly engaging in EE.

Regardless of this expansion, the contentious debate about the relevance, pedagogies, and effectiveness, even about the sense of EE in general, is still going on. In this vein, the present conceptual paper challenges the common view that EE is a helpful measure to ‘produce’ entrepreneurs, and in doing so, able to contribute to boost the number of business start-ups. It aims at inducing a rethinking about the appropriateness of EE in the higher education sector. The remainder of the paper is organized as follows: The Section 2 undertakes a discussion of arguments why EE at universities is questionable. Section 3 highlights implications and suggestions for future higher education.

SEVEN ARGUMENTS AGAINST ENTREPRENEURSHIP EDUCATION

As exposed in the introductory section, entrepreneurship has becoming a field of teaching because of the importance ascribed by politicians and researchers. However, some arguments indicate that the efforts to design and implement EE are nothing but temporary fashion. Although the evaluations of different EE concepts give reason to believe in their success, the role of EE is not that clear as it seems to be. Almost every entrepreneurship program that has been launched aims at promoting an entrepreneurial spirit amongst students. However, is this really a measure to overcome the deficits in the entrepreneurial thinking and acting, which is inherent in an overwhelming number of industrialized economies? Following, seven arguments are presented that constitute crucial doubts on the sense of EE. Figure 1 gives an overview about these arguments.

Fig. 1: Seven Arguments against Entrepreneurship Education



Argument 1: Lack of Uniformity in Objectives, Content, and Pedagogies

Scholars have presented a variety of different concepts about EE, and their heterogeneity is abundant (Henry, Hill, & Leitch, 2005; Mwasalwiba, 2010). The analysis of specific EE programs, general literature reviews, as well as practical experience indicate that little uniformity exists regarding definition, objectives, content, and pedagogy. Such diversity, at least in part, appears to be linked to the debate about what EE is or must be, respectively (e.g. Holmgren & From, 2005; Pittaway & Cope, 2007), and what entrepreneurship stands for as a teaching subject (Fayolle, 2008). However, there also seems to be a disparity between the supply and the expectations of EE (Schwartz & Malach-Pines, 2009).

A fundamental concern addresses the economic and social objectives of EE. Laukkanen (2000) as well as Rasmussen and Sørheim (2006) divide EE into two different areas. On the one hand, he speaks of ‘education about entrepreneurship’, which refers to studying entrepreneurship as a phenomenon and theory building. On the other hand, they distinguish ‘education for entrepreneurship’ that addresses the conveyance of knowledge and skills in order to become an entrepreneur. Again, Fayolle (2008) defines the objectives of EE as follows: educating entrepreneurship professors and researchers (theories), preparing entrepreneurial individuals

(mindset), and training entrepreneurs or professionals in the field (skills). Whatever the focus is, the teaching methodologies applied in each of these modes differ considerably.

Furthermore, knowledge and research regarding EE contents remain relatively underdeveloped. According to Brockhaus et al. (2001, p. XIV), the field is still in its infancy since “very little is still known about effective teaching techniques for entrepreneurial educators”. What seems clear is that the structure of an EE program should be very different from a typical business management program (McMullan & Long, 1987). Notwithstanding, the absence of a single agreed definition of EE implies that even today the concept is often ill-mixed with traditional management education, social competence skills conveyance, or career path building. The wide and undefined nature of EE is, consequently, misleading and undermines its generally assumed importance.

Despite this diverseness, a certain consensus exists with respect to some pedagogies that proved to be advantageous for molding entrepreneurial individuals. Hereby, project based and experiential learning seems to be appropriate (Daly, 2001; Jones & Iredale, 2010). Such methodologies are supposed to increase motivation and to instill the emotional and intuitive dimensions of entrepreneurship. However, as they are linked with internships and field experience, these approaches, though effective, go far beyond the traditional teaching scheme in higher education and should rather be labeled as ‘Entrepreneurship Training’.

Argument 2: The ‘Trait Approach’

Despite the previously exposed attempts to define and configurate EE, the fundamental discussion on whether entrepreneurship is an innate ability remains. In other words, are certain individuals ‘born’ to be entrepreneurs? The debate is mainly based on the so-called ‘Trait Approach’, which deals with the entrepreneur’s personal characteristics from a psycho-sociological perspective. In a meta-analysis, Rauch and Frese (2007) confirmed the importance of considering the entrepreneur’s characteristics for business success. It seems that in recent scientific literature an upsurge of personality trait research is looming.

The main premise of the ‘Trait Approach’ is the assumption that entrepreneurs have a unique set of stable, inherent, and enduring personality characteristics that favor entrepreneurial activities. These traits are supposed to be permanent and remain consistent across time and context (Cope, 2005). Opportunity identification as one of the key concepts of entrepreneurship (Kirzner, 1973, 1979; Shane & Venkataraman, 2000) does not only involve entrepreneurial knowledge, but also less tangible forms, for instance wakefulness, creativity, innovativeness, proactiveness, risk-taking propensity, and the need for achievement. In Kirzner's (1973, 1979) view, entrepreneurial alertness is an innate ability.

More recently, Thompson (2004) says that EE alone cannot compensate for missing characteristics such as talent and temperament. In their conceptual paper, Klein and Bullock (2006)

conclude that it is not generally possible to teach discovery, recognition, decision-making, and the nature of the ‘entrepreneurial’ personality. In fact, it seems that certain traits favorable to entrepreneurship are more inherent, and the possibility to develop them by education depends upon the predisposition of the individual. Some of the mostly cited entrepreneurial characteristics are linked to the ‘Big Five’ factors (Costa & McCrae, 1992) defining human personality (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism), which contemporary psychology has identified as highly stable over time.

Consequently, as these characteristics are conceived to be inborn and a matter of personality, the possibilities for teaching individuals to become entrepreneurs may be limited. In an interview, David Birch expressed the following (Aronsson, 2004, p. 289): “If you want to teach people to be entrepreneurs, you can’t.” Addressing the question of whether or not entrepreneurship can be taught, Henry et al. (2005) conclude that the debate will continue. In fact, since most of entrepreneurial knowledge is tacit and a product of the entrepreneur’s personality and context, we believe that there is a need for differentiation with regard to the teachability of entrepreneurship, exposed in the following argument.

Argument 3: The ‘Teachability Dilemma’

In the discussion about the teachability of entrepreneurship, Henry et al. (2005) state that at least some aspects of entrepreneurship can successfully be taught. More concretely, Rae and Carswell (2001) admit that there are some relatively easy teachable (e.g., business and management functional knowledge, business plan) and not easily teachable (e.g. creativity and innovativeness) components of entrepreneurship. In our view, for their closeness to business management education, hard facts about business creation such as venture finance, accounting, marketing, management, and business plan development can easily be taught by EE. However, a considerable and essential part of entrepreneurial expertise is tacit and based on know-how; it is the ‘ingredient’ that distinguishes the entrepreneur from other individuals and should be the focus of EE.

Nonetheless, the inclusion of ‘know-how’ building elements in EE programs is still dilatory. Chen et al. (1998) confirm that EE tends to focus rather on the technical aspects of entrepreneurship, and according to Kirby (2004), the focus on developing entrepreneurial skills, attributes, and behavior remains scarce. Blenker et al. (2008) dispute that the present educational system is capable of developing students’ motivation, competences, and skills concerning entrepreneurship. They argue that, at present, universities have not mastered the necessary learning methods, pedagogical processes, and frames for EE.

In fact, when comparing the required competences and qualifications for entrepreneurs with up-to-date EE from the literature review and practical experience, the ‘New School’ or the ‘Enterprising Learning Mode’, proposed by progressive entrepreneurship educationalists (Ronstadt,

1985; Gibb, 1993), has in no way substituted the traditional EE; the latter is still the predominating concept. Solomon's (2007) recent examination of the state-of-the-art EE in the United States indicates that the most widespread EE pedagogies are class lectures, business plan creation, guest speakers, and class discussions. We believe that too many programs still conceive EE as an adapted business management education, covering all related functional areas in a quick run, and only a few approaches seem to be suited to transmit entrepreneurial 'know-how'.

As a consequence, a 'Teachability Dilemma' (Haase & Lautenschläger, 2010) in EE comes into picture. On the one hand, tacit and experience-based elements are highly relevant for successful business venturing, and their appropriate conveyance is what among all things differentiates and contrasts EE from traditional business management education. On the other hand, those qualifications are difficult to convey through EE; they must rather be experienced. In other words: Whatever set of qualifications EE is able to provide, it encounters its limitations when transmitting the core value of entrepreneurship.

Argument 4: Lack of Measurement in Overall Impact

Regardless of the discussions on the teachability of entrepreneurship, several researchers have attempted to capture and measure the impact of EE programs and courses. Measurement means defining commonly agreed or standard success indicators, but due to the lack of alignment about what educators wish to achieve with the applied pedagogical approaches (Mwasalwiba, 2010), a huge variety of measures exist. Indeed, there is considerable debate over the most appropriate methods of EE evaluation (Westhead, Storey, & Martin, 2001). 'Impact' can be interpreted as a change in miscellaneous aspects related to entrepreneurship, such as the EE participant's intention, desire, conviction, willingness, perception, attitude, risk assessment, feasibility, confidence, skills, ability, and knowledge as variables of the pedagogical effect. It is worthy of notice that impact can also mean to attain certainty about not starting a business by detecting shortcomings within the before mentioned items.

Then again, there are more tangible effects, i.e. economic outcomes measuring entrepreneurial success, beneath this propensity of start-up activities, survival rate, new venture's performance and market share, employment and sales growth, and economic development. In fact, McMullan, Chrisman, and McMullan (2001, p. 38) stress that the objectives of EE should be "primarily economic" and as such "appropriate measures would include businesses started or saved, revenue generation and growth, job creation and retention, financing obtained and profitability". Of course, both types of effects cannot be judged separately; rather there exists a linkage spanning from the pedagogical to the economic impact. The former does not per se generate an increase in welfare, but it is often a pre-condition for the economic effects.

Nevertheless, due to the multifaceted effects that EE could cause, no study has yet measured the overall usefulness and effectiveness, towards individuals and society, of educating individuals to become entrepreneurs. The bulk of research that has been carried out has barely dealt with measuring the pedagogical impact. Hereby, most studies indicate a positive influence on (short-term) entrepreneurial intentions (Lüthje & Franke, 2003; Lee, Chang, & Lim, 2005; Fayolle, Gailly, & Lassas-Clerc, 2006; Souitaris, Zerbini, & Al-Laham, 2007; Pittaway & Cope, 2007). On the other hand, there are recent studies that create doubt on the effectiveness of EE (Franco, Haase, & Lautenschläger, 2010; Oosterbeek, van Praag, & Ijsselstein, 2010). To give an example, the latter authors analyzed the impact of an EE program in the Netherlands. Their results reveal that the intended effects failed to appear: the effect on students' entrepreneurial skills and intention was insignificant, even negative, respectively. Thus, although a variety of practitioners, educators, and policy-makers recite the alleged benefits of EE like a mantra, little rigorous research actually exists, and the conviction of the positive outcomes seems often more ideologically than empirically grounded, as Peterman and Kennedy (2003) alert.

Argument 5: Negative Relation between Entrepreneurial Training and Activities

With regard to entrepreneurship, the United States and their higher education system are considered to be a role model. As explained in the introductory section, many countries undertook great efforts to establish similar programs in order to raise the business start-up rate. However, a view on the level of entrepreneurial activities reveals that the United States are not on top of the most entrepreneurial countries. While the early stage entrepreneurial activity (i.e. the 18-64 aged population who are either a nascent entrepreneur or owner-manager of a new business) amounts to 10.8% for the United States, some countries such as Uruguay, Peru, Angola, India, and Mexico reveal a much higher entrepreneurial activity level (Bosma, Acs, Autio, Coduras, & Levie, 2009). Generally, already since a couple of years, Global Entrepreneurship Monitor (GEM) indicates that the self-employment and start-up rates in developing or transition countries exceed the industrialized regions, in particular those who invest much efforts in higher education EE.

In this context, the special topic of GEM 2008 was addressed to EE. It was found that the relationship between training in business creation and entrepreneurial attitudes, aspirations, and activity is generally positive, but varies by phase of economic development (Bosma et al., 2009). Interestingly, the analysis also demonstrates that within the innovation-driven economies, several negative correlations are apparent. Bosma et al. (2009, p. 47) conclude that "governments with low levels of entrepreneurial activity have been investing more in entrepreneurship education and training in an effort to increase entrepreneurial activity". But other explanations are surmisable also. For example, it is probable that in some industrialized economies the educational system is

characterized in a way that it prevents young people from developing business ideas and starting up a venture.

Argument 6: EE Limited to Higher Education Institutions

Despite the establishment of EE on all educational levels during the last decades, a major part of all the courses and programs are run within the higher education sector. EE at colleges and vocational schools is an ongoing event; however, the overwhelming majority of the theory and practice in the discipline, not least cited in the literature in this article, focuses on universities. Under these circumstances, a significant share of the population and, therewith, a considerable proportion of potential business founders are excluded from taking part in EE. It precludes those who are not able or not willing to attend higher education institutions. Most EE seems to be offered only for individuals who fulfill the requirements to enter a university. The reflections depicted earlier, however, underpin a huge entrepreneurial potential outside the academic world. The mere concentration of one, though important, subgroup contradicts the sense of EE, as other individuals are forced or prefer to pursue entrepreneurial activities without formal qualification.

Argument 7: The ‘All-Rounder Paradox’

Entrepreneurs have to be all-rounders. This means that they must have multiple skills and expert proficiency in a significant number of subject areas, especially in all management aspects of businesses as well as its products or services. For example, David Birch speaks of three skills “an entrepreneur needs to know and master: selling, managing people, and creating a new product or service” (Aronsson, 2004, p. 290). Thus, being a successful entrepreneur requires being a generalist with the ability to bring a series of disciplines and talents together in a practical manner. Nevertheless, a type of education that is unilaterally and uniquely directed towards the creation of new businesses cannot ‘produce’ generalists or all-rounders. EE should, therefore, be designed to include the broad range of entrepreneurial skills and expertise that coin the entrepreneur. Yet, under these conditions, is it still justified to speak really of ‘Entrepreneurship Education’?

QUO VADIS ENTREPRENEURSHIP EDUCATION?

The analysis has shown that EE is not a precondition for more entrepreneurs to start and grow new firms. In the previous sections, we have purported a number of rationales underpinning the argument that EE is rather a contemporary fashion and far from being effective. The danger lies

in wasting a huge amount of public money in trying to encourage start-up via EE. Mainstream EE is up-to-date an unavailing measure to overcome the underlying deficits in modern economies related to entrepreneurship, namely the difficulties to develop and implement new business ideas, the missing intuition to recognize opportunities and the underdeveloped strive for being self-employed.

Thus, if the promotion of entrepreneurial activities by EE at higher education institutions does not seem to be as fruitful as academics and policy-makers reiterate, what else should be done? Using the funds for EE and invest them in direct business development and support? Or, in spite of all criticism, try to develop a new type of EE in order to overcome the shortcoming stated in the former section? To answer these questions, we have to explore the nature of entrepreneurship as well as the causes why some economies possess more entrepreneurial capital than others.

According to Fritsch (2008), the main supply-side effects by entry of new businesses lie in their contribution to securing efficiency, stimulating productivity, accelerating structural change, amplified innovation and providing a greater variety of products, and problem solving. Within these functions, we especially highlight innovation and problem solution potential. Consequently, it seems appropriate to focus EE on these aspects. This implies, above all, the stimulation of creative thinking, instead of teaching knowledge on business creation. Without the capacity to outbreak from solidified and retracted thought structures in order to discover new opportunities, economically significant business start-ups will not occur.

The elucidation of the particular characteristics of the entrepreneur has illustrated that the decisive attributes do not rest in his specialist knowledge about starting a business, but rather in the abilities to attract resources, to develop ideas and to follow a vision. Herein, traits such as proactiveness, creativity, innovativeness, risk-taking propensity, wakefulness, and need for achievement are outstanding features and at once the 'essence' of what differentiates the entrepreneurial from non-entrepreneurial individuals. Entrepreneurs have to be all-rounders, performing a variety of tasks and are far from being ordinary or a 'routine'. They must be able to succeed in unknown fields of acting and constantly find out new and alternative solutions. Hence, positively thinking, inventively acting, and creative decision-making are the basic components to become an entrepreneurial individual.

The importance of openness and free scope for developing entrepreneurship and the economy as a whole has been underpinned by recent studies. When analyzing the remarkable spin-out rate from the Intershop Company in Jena (Germany), Buenstorf and Fornahl (2009) found that the vast room for manoeuvre and the great responsibility attributed to mostly young and inexperienced staff during the New Economy period facilitated entrepreneurial behavior. Similarly, the study of Dörre and Neis (2009) on high-tech spin-offs from German universities evidenced that potential entrepreneurs do actually need freedom to operate and individual time, without institutional or market pressure, to develop their team and ideas.

Against this background, we postulate that poor entrepreneurial interest and abilities are due to the educational systems themselves. Already secondary education and continuously university education are focused on imparting knowledge, neglecting creativity and problem solving abilities. Bearing in mind their importance, it is questionable why EE does so less to make these skills a subject of discussion. The shaping of creativity, opportunity recognition and problem solving capabilities should encompass the whole educational system.

How this could be put into practice, exemplifies the recently cited Singapore model. Here, some major initiatives have been launched to foster greater creativity and innovation among students. Their key strategies include (1) the explicit teaching of critical and creative thinking skills; (2) the reduction of subject content; (3) the revision of assessment modes; and (4) a greater emphasis on processes instead of outcomes when appraising schools (Tan & Gopinathan, 2000). Nowadays, Singapore possesses one of the world's best-performing school systems. Moreover, today Singapore is also characterized by one of the few countries with arguably the 'healthiest' entrepreneurial anatomies. The GEM 2008 confirms that Singapore has "the highest relative prevalence of High-Growth Expectation Early-Stage Entrepreneurship of all innovation-driven countries in the sample" (Bosma et al., 2009, p. 33).

In light of these considerations, how could a future EE at higher education institutions be designed in order to enable more individuals to develop and implement their ideas? To tackle this issue, we propose to take into consideration the following aspects:

- (1) The educational system should concentrate on nurturing creativity as well as open and critical thinking. Curricula have to strengthen problem recognition and problem solving activities. University education should create spaces for creative thinking and working. Herein, dropping out from solidified and retracted thought structures should be particularly practiced, however with clearly determined objectives. This helps to develop qualities such as creativity, confidence and perseverance, which are imperative for being an entrepreneur. Within these processes, helpful tools can be the implementation of creativity techniques.
- (2) A change is needed in teaching methods. The focus should not only lie on the facilitation of knowledge about business creation but rather on approaching the students how to acquire such knowledge and on the training of such abilities. Therefore, lectures related to entrepreneurship should be an exception in university education. As long as every individual has the ability to collect information from the internet or the library, it should no longer be the task of the teacher to give a lecture. University education should transform students into active learners. This comprises an experimental and experiential environment that allows trial and error, and, thus, facilitates students to discover a diversity of entrepreneurial experiences enabling them to grow holistically.

-
- (3) Nevertheless, the conveyance of entrepreneurial knowledge on business creation is imperative. Note that the objective of this writing is not to demonstrate that start-up related knowledge does not matter. Hard facts about the entrepreneurial process should take on an important role in higher education. However, this does not require a specific course or discipline; entrepreneurial hard facts should rather be covered by standard business management education of the respective university department and not be treated as something outstanding. This is underpinned by the fact that nowadays entrepreneurial thinking and acting is not only expected from a business founder, but also from employees and managers of established businesses, the latter labeled as ‘Intrapreneurship’.
- (4) There are indications that the probability of business ventures’ success can be enhanced by the promotion of entrepreneurial self-complexity. From experience we know that EE programs easily reach their limits if the interest, intentionality, and conviction in entrepreneurship is missing. For this reason, it is necessary to explore the entrepreneurial potential early, namely even before individuals enter the universities. This allows, on the one hand, to direct educational efforts towards those who are willing to start a venture. On the other hand, it permits the selective admission to higher education of entrepreneurially oriented people in order to sharpen their potential as business founders.

Of course, these propositions are not the panacea to overcome the existing deficits in the entrepreneurial thinking and acting of many industrialized economies, which are to a large extent a result of the cultural, social, and environmental conditioning. Our reflections should rather be understood as a contribution to the ongoing debate about the sense of state-to-the-art EE and its future role in higher education. Hopefully our paper will inspire entrepreneurship educators in their quest for the most appropriate measures for promoting entrepreneurial engagement.

AUTHORS’ NOTE

An earlier draft of this paper was presented at the 13th Annual Interdisciplinary Entrepreneurship Conference (G-Forum), Leipzig (Germany), October 29-30, 2009.

REFERENCES

- Acs, Z. J. (1996). *Small Firms and Economic Growth*. Cheltenham (UK): Edward Elgar Publishing Ltd.
- Aronsson, M. (2004). Education Matters—But Does Entrepreneurship Education? An interview with David Birch. *Academy of Management Learning and Education*, 3(3), 289-292.
- Audretsch, D. B. (2002). The Dynamic Role of Small Firms: Evidence from the U.S. *Small Business Economics*, 18(1), 13-40. doi:10.1023/A:1015105222884

- Autio, E., & Parhankangas, A. (1998). Employment Generation Potential of New, Technology-Based Firms During a Recessionary Period: The Case of Finland. *Small Business Economics*, 11(2), 113-123. doi:10.1023/A:1007941801303
- Baumol, W. J. (1990). Entrepreneurship: Productive, Unproductive, and Destructive. *The Journal of Political Economy*, 98(5), 893-921.
- Birch, D. L. (1981). Who Creates Jobs? *The Public Interest*, 65, 3-14.
- Blenker, P., Dreisler, P., Faergemann, H. M., & Kjeldsen, J. (2008). A framework for developing entrepreneurship education in a university context. *International Journal of Entrepreneurship and Small Business*, 5(1), 45-63. doi:10.1504/IJESB.2008.015953
- Bosma, N., Acs, Z. J., Autio, E., Coduras, A., & Levie, J. (2009). *Global Entrepreneurship Monitor 2008. Executive Report*. Babson College and Universidad del Desarrollo.
- Boyle, T. J. (2007). A new model of entrepreneurship education: implications for Central and Eastern European universities. *Industry and Higher Education*, 21, 9-19.
- Brockhaus, R. H., Hills, G. E., Klandt, H., & Welsch, H. P. (2001). *Entrepreneurship Education: A Global View*. Aldershot: Ashgate.
- Buenstorf, Guido, and Dirk Fornahl. 2009. "B2C—bubble to cluster: the dot-com boom, spin-off entrepreneurship, and regional agglomeration." *Journal of Evolutionary Economics* 19:349-378.
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4), 295-316.
- Cope, J. (2005). Toward a Dynamic Learning Perspective of Entrepreneurship. *Entrepreneurship Theory and Practice*, 29(4), 373-397. doi:10.1111/j.1540-6520.2005.00090.x
- Costa, P. T., & McCrae, R. R. (1992). Normal Personality Assessment in Clinical Practice: The NEO Personality Inventory. *Psychological Assessment*, 4(1), 5-13.
- Daly, S. P. (2001). Student-Operated Internet Businesses: True Experiential Learning in Entrepreneurship and Retail Management. *Journal of Marketing Education*, 23(3), 204-215. doi:10.1177/0273475301233006
- Dana, L. P. (2001). The education and training of entrepreneurs in Asia. *Education + Training*, 43(8/9), 405-416. doi:10.1108/EUM000000006486
- Dörre, K., & Neis, M. (2009). Ist der Kaiser nackt? Reformwartungen und Innovationswirklichkeit: Befunde zur regionalen Wirkung der "unternehmerischen Universität". *Die Hochschule. Journal für Wissenschaft und Bildung*, 18(1), 53-68.
- Fayolle, A. (2008). Three types of learning processes in entrepreneurship education. *International Journal of Business and Globalisation*, 2(2), 198 - 207. doi:10.1504/IJBG.2008.016627

-
- Fayolle, A., Gailly, B., & Lassas-Clerc, N. (2006). Assessing the impact of entrepreneurship education programmes: a new methodology. *Journal of European Industrial Training*, 30(9), 701-720. doi:10.1108/03090590610715022
- Fölster, S. (2000). Do Entrepreneurs Create Jobs? *Small Business Economics*, 14(2), 137-148. doi:10.1023/A:1008141516160
- Franco, M., Haase, H., & Lautenschläger, A. (2010). Students' Entrepreneurial Intentions: An Inter-Regional Comparison. *Education + Training*, forthcoming.
- Fritsch, M. (2008). How does new business formation affect regional development? Introduction to the special issue. *Small Business Economics*, 30(1), 1-14.
- Gibb, A. A. (1993). Enterprise Culture and Education: Understanding Enterprise Education and Its Links with Small Business, Entrepreneurship and Wider Educational Goals. *International Small Business Journal*, 11(3), 11-34. doi:10.1177/026624269301100301
- Haase, H., & Lautenschläger, A. (2010). The 'Teachability Dilemma' of Entrepreneurship. *International Entrepreneurship and Management Journal*, forthcoming.
- Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: can entrepreneurship be taught? Part II. *Education + Training*, 47(3), 158-169. doi:10.1108/00400910510592211
- Holmgren, C., & From, J. (2005). Taylorism of the Mind: entrepreneurship education from a perspective of educational research. *European Educational Research Journal*, 4(4), 382-390.
- Jones, B., & Iredale, N. (2010). Enterprise education as pedagogy. *Education + Training*, 52(1), 7-19. doi:10.1108/00400911011017654
- Katz, J. A. (2003). The chronology and intellectual trajectory of American entrepreneurship education: 1876-1999. *Journal of Business Venturing*, 18(2), 283-300. doi:10.1016/S0883-9026(02)00098-8
- Kirby, D. A. (2004). Entrepreneurship Education Can Business Schools Meet the Challenge. *Education + Training*, 46(8), 510-519.
- Kirzner, I. M. (1973). *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Kirzner, I. M. (1979). *Perception, opportunity, and profit: studies in the theory of entrepreneurship*. Chicago: University of Chicago Press.
- Klandt, H., Koch, L. T., Schmude, J., & Knaup, U. (2008). *FGF-Report 2008 - Entrepreneurship-Professuren an deutschsprachigen Hochschulen: Ausrichtung, Organisation und Vernetzung*. Bonn: FGF e. V.
- Klein, P. G., & Bullock, J. B. (2006). Can Entrepreneurship Be Taught? *Journal of Agricultural and Applied Economics*, 38(2), 429-439.

- Laukkanen, M. (2000). Exploring alternative approaches in high-level entrepreneurship education: creating micromechanisms for endogenous regional growth. *Entrepreneurship and Regional Development*, 12(1), 25-47.
- Lee, S., Lim, S., Pathak, R., Chang, D., & Li, W. (2006). Influences on students attitudes toward entrepreneurship: A multi-country study. *The International Entrepreneurship and Management Journal*, 2(3), 351-366. doi:10.1007/s11365-006-0003-2
- Lee, S. M., Chang, D., & Lim, S. (2005). Impact of Entrepreneurship Education: A Comparative Study of the U.S. and Korea. *The International Entrepreneurship and Management Journal*, 1(1), 27-43. doi:10.1007/s11365-005-6674-2
- Lüthje, C., & Franke, N. (2003). The 'making' of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT. *R&D Management*, 33(2), 135-147. doi:10.1111/1467-9310.00288
- McMullan, W. E., Chrisman, J. J., & Vesper, K. H. (2001). Some problems in using subjective measures of effectiveness to evaluate entrepreneurial assistance programs. *Entrepreneurship Theory and Practice*, 26(1), 37-54.
- McMullan, W. E., & Long, W. A. (1987). Entrepreneurship education in the nineties. *Journal of Business Venturing*, 2(3), 261-275. doi:10.1016/0883-9026(87)90013-9
- Mitra, J., & Matlay, H. (2004). Entrepreneurial and vocational education and training: Lessons from Eastern and Central Europe. *Industry and Higher Education*, 18(1), 53-61.
- Mwasalwiba, E. S. (2010). Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators. *Education + Training*, 52(1), 20-47. doi:10.1108/00400911011017663
- Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review*, 54(3), 442-454. doi:10.1016/j.euroecorev.2009.08.002
- Peterman, N. E., & Kennedy, J. (2003). Enterprise Education: Influencing Students' Perceptions of Entrepreneurship. *Entrepreneurship Theory and Practice*, 28(4), 129-144. doi:10.1046-j.1540-6520.2003.00035.x
- Pittaway, L., & Cope, J. (2007). Entrepreneurship Education: A Systematic Review of the Evidence. *International Small Business Journal*, 25(5), 479-510. doi:10.1177/0266242607080656
- Rae, D. (1997). Teaching entrepreneurship in Asia: impact of a pedagogical innovation. *Entrepreneurship, Innovation, and Change*, 6(3), 193-227.
- Rae, D., & Carswell, M. (2001). Towards a conceptual understanding of entrepreneurial learning. *Journal of Small Business and Enterprise Development*, 8(2), 150-158. doi:10.1108/EUM0000000006816
- Rasmussen, E. A., & Sørheim, R. (2006). Action-based entrepreneurship education. *Technovation*, 26(2), 185-194.
- Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work and Organizational Psychology*, 16(4), 353 - 385.

-
- Roberts, E. B. (1991). *Entrepreneurs in High Technology: Lessons from MIT and Beyond*. Oxford: Oxford University Press.
- Ronstadt, Robert. 1985. "The Educated Entrepreneurs: An Era of Entrepreneurial Education is beginning." *American Journal of Small Business* 10:7-23.
- Schwartz, D., & Malach-Pines, A. (2009). Entrepreneurship education for students How should universities prepare for the challenge of teaching entrepreneurship? *Industry and Higher Education*, 23(3), 221-231.
- Shane, S., & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *The Academy of Management Review*, 25(1), 217-226.
- Solomon, G. (2007). An examination of entrepreneurship education in the United States. *Journal of Small Business and Enterprise Development*, 14(2), 168-182.
- Solomon, G. T., Weaver, K. M., & Fernald, L. W. (1994). A Historical Examination of Small Business Management and Entrepreneurship Pedagogy. *Simulation & Gaming*, 25(3), 338-352. doi:10.1177/1046878194253003
- Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566-591. doi:10.1016/j.jbusvent.2006.05.002
- Steffensen, M., Rogers, E. M., & Speakman, K. (2000). Spin-offs from research centers at a research university. *Journal of Business Venturing*, 15(1), 93-111. doi:10.1016/S0883-9026(98)00006-8
- Tan, Jason, and S. Gopinathan. 2000. "Education Reform in Singapore: Towards Greater Creativity and Innovation?" *NIRA Review* 7:5-10.
- Thompson, J. L. (2004). The facets of the entrepreneur: identifying entrepreneurial potential. *Management Decision*, 42(2), 243-258. doi:10.1108/00251740410515861
- Tiffin, Scott. 2004. *Entrepreneurship in Latin America: Perspectives on Education and Innovation*. New York: Praeger Publishers.
- Westhead, P., Storey, D. J., & Martin, F. (2001). Outcomes reported by students who participated in the 1994 Shell Technology Enterprise Programme. *Entrepreneurship and Regional Development*, 13(2), 163-185.

