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Improving perceived entrepreneurial abilities through education: Exploratory testing of an entrepreneurial self efficacy scale in a pre-post setting



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ABSTRACT

This study evaluates the impact of an entrepreneurship program. Two pre-test/post-test surveys were performed among students attending the 2009–2010 and 2010–2011 classes. A third pre-post survey was sent to students enrolled in an innovation management course, who served as the control group. We evaluated the influence of the program/course on entrepreneurial self-efficacy (ESE), attitudes to entrepreneurship and whether or not the students had started a company during their education. The result indicates that the entrepreneurship program was effective in enhancing ESE, attitudes to entrepreneurship and start up behavior, which was not observed in the control group. The paper concludes by pointing out some limitations of the study and discussing the possible influence of entrepreneurial education on ESE, attitudes to entrepreneurship and start up.

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1. Introduction

Interest in entrepreneurship teaching began in the early 1970s, at which stage it was only offered at a few universities around the world (Landström and Benner 2010). Since then, this interest has steadily expanded and a plethora of university courses is now available. In one of the most extensive reviews to date, Katz (2003, 2008) finds support for increasing number of institutions providing entrepreneurship educations, endowed positions in entrepreneurship, and increasing numbers of publications. In the US, courses in entrepreneurship have increased from 16 in 1970 to 504 in 2001 (Vesper & Gartner, 2001), the number of undergraduate courses to 1400, while the number of endowed entrepreneurship positions has doubled every four years since the 1990s. The scope of entrepreneurship education has also broadened, from primarily a business school topic to all fields of university education (Kuratko, 2005). Despite the rampant growth of entrepreneurship as an educational field, the question “Can entrepreneurship be taught?” is still a topic of lively debate (Neck & Greene, 2010).

This question remains relevant, as the effects of entrepreneurship education are poorly understood. Few studies have evaluated entrepreneurship education in general, and of those that did so, many had significant methodological weaknesses

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such as a lack of pre-post tests and control groups. Some studies revealed the positive impact of education (Fayolle, Gailly, & Lassas-Clerc, 2006; Tkachev & Kolvereid, 1999), while others demonstrated no impact (Franco, Haase & Lautenschläger, 2010) or even negative effects (Oosterbeek, Praag, & Ijsselstein, 2010). Thus, there is justification for calling the field of entrepreneurship education into question.

Several educators have argued that the rapidly growing demand for entrepreneurship education has meant that the curriculum lags far behind the advances in entrepreneurship research (Honig, 2004; Rasmussen & Sørheim, 2006). More specifically, these authors and others (e.g. Kirby, 2004; Krueger, 2007; Neck & Green, 2010; Politis & Gabrielsson, 2009) have argued in favor of experiential learning models (Kolb, 1984) and effectual decision-making (Sarasvathy, 2001). However, these learning models have yet to be evaluated.

There has been growing concern about entrepreneurship courses and programs. To what extent do they actually support the development of *entrepreneurial* skills and abilities? Research indicates that regular assessment of study results, grades, student satisfaction with courses etc. is inadequate for evaluating entrepreneurial skills and abilities (Kailer, 2007; Moberg, 2011).

In the present study we performed a multi-dimensional evaluation of entrepreneurial self-efficacy (ESE), attitudes and nascent behavior using a pre-post design, on an educational program based on experiential learning models and effectual decision making. We also included a control group from an innovation management class, in which lectures constituted the main pedagogical tool.

The purpose of this study was to evaluate the change in attitudes, entrepreneurial self efficacy and nascent entrepreneurship behavior among entrepreneurship students in comparison with a control group, in order to understand the impact of the education. We hope that this study will provide insights into evidence-based arguments as to whether entrepreneurship can be taught, and if so, in what way.

2. Evaluating entrepreneurship education

Research evaluating entrepreneurship education is limited (Kailer, 2007; Storey, 2000). If conducted at all, such evaluations are usually aimed at understanding the students' attitudes to the course or program after its conclusion. Questionnaires typically investigate students' attitudes to the school, the entrepreneurship course, work placements and entrepreneurial activities engaged in (Kailer, 2007). There is a lack of longitudinal studies (Weber, Graevenitz, & Harhoff, 2009) and studies with control groups (Wilson, Kickul, & Marlino, 2007). Contrary to expectations, one of the few studies that measured entrepreneurship self-efficacy before and after participation in an entrepreneurship course found a negative impact (Cox, Mueller, & Moss, 2002). The authors of the latter study discussed, among other things, the possibility that the students' educational level had influenced the results and that the poor results obtained should in fact be interpreted positively, as students may have had an inflated and over-confident attitude to entrepreneurship at the start of the programme, which after the program became more realistic. A second possible explanation, which merits further investigation, is that the particular educational program evaluated used traditional as opposed to experiential teaching methods. Another longitudinal study by Oosterbeek et al. (2010) found similar negative effects of entrepreneurship education on students' intention to become entrepreneurs, which illustrates the need to study and evaluate the outcome of entrepreneurial education.

3. Effects of entrepreneurial education: entrepreneurial self-efficacy, attitudes to entrepreneurship and start up behavior

Three broad categories of entrepreneurial education can be evaluated; learning entrepreneurial skills, attitudes, and start up behavior (OECD, 2009). The categories evaluated depend on the goals of the class under study.

In this particular study we investigated primarily confidence in entrepreneurial skills, and secondarily investigating behavior and attitudes; using an experimental design. We evaluated the impact of the education on students' confidence in their entrepreneurial skills (ESE), attitudes to entrepreneurship, and if they perceive that they are starting a business. ESE and attitudes are part of the theory of planned behavior, which has been widely studied in entrepreneurship and proposed as an evaluation method for entrepreneurship education (Fayolle et al., 2006). In the following we will discuss the research underpinning these categories.

3.1. *Entrepreneurial self-efficacy (ESE)*

One of the more promising aspects of entrepreneurship education is that it may improve students' confidence to engage in entrepreneurial activities. While research indicates that ESE is a robust measure for evaluating a person's belief in her/his ability to successfully launch an entrepreneurial venture, few studies are available (Mauer, Neergaard, & Kirketerp, 2009). ESE can be defined as an individual's perceived competence in starting a business, i.e. it is a refined task-specific version of Bandura's (1997) Self-Efficacy concept. Despite the potential usefulness of the ESE in entrepreneurship education, it is empirically under-researched in educational settings (McGee, Peterson, Mueller, & Sequeira 2009). The following discussion is based on the categorization of entrepreneurial tasks developed by Mueller and Goic (2003) and the refinement of their categorization presented by McGee et al. (2009), who suggested that ESE can be measured by five categories: Searching, Planning, Marshalling, Implementation of human resources and Implementation of financial resources. In the following section we will discuss each of these categories.

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