

Preliminary exploration of teaching excellence in technical institutes and colleges in Taiwan - presenting entrepreneurship education as an example

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ABSTRACT: The main aims of this study were to investigate the development and promotion of entrepreneurship education curricula in technical institutes and colleges of Taiwan, and to provide this information as a reference in promoting entrepreneurship education curricula and hosting entrepreneurship business competition. To achieve this, in-depth interviews were used to investigate a total of five teachers, who had engaged in lecturing entrepreneurship education curricula for more than five years. The research findings indicate that the educational functions of entrepreneurship education should be to develop students' competence in entrepreneurship, entrepreneurial management skills and personal entrepreneurial skills. The educational insight of entrepreneurship education should be based on basic entrepreneurial knowledge. The main framework of the course design of entrepreneurship education includes three categories: foundation curriculum, core curriculum and an integrated curriculum of entrepreneurial practices.

INTRODUCTION

The main objectives of entrepreneurship education are to cultivate future entrepreneurs and develop students' entrepreneurship based on innovative education and instruction, which is beneficial to students' future workplace performance. The higher the students' involvement in entrepreneurship education, the higher their learning effectiveness [1][2].

Advanced countries, such as the United States and Japan, have been strongly promoting entrepreneurship education. In addition, they also provide relevant supporting measures to encourage graduates to start an enterprise as one of the major measures to increase the employability of students. The United Nations Educational, Scientific and Cultural Organization (UNESCO) also regards entrepreneurship as the third *learning passport*, in addition to academic and occupational ones [2-4]. In terms of the technical and vocational education, one of the major issues of entrepreneurship is to put entrepreneurship into practice. Therefore, entrepreneurial competence will become a basic required competency for future students at technical institutes and colleges [5][6].

Post-entrepreneurial competencies, such as entrepreneurial competence, entrepreneurial decision making, operation assessment and problem-solving strategies will affect entrepreneurs meta-cognitive awareness of entrepreneurship [5-8]. The scale of entrepreneurial self-efficacy can be used to collect information on dimensions such as searching, planning, marshaling, implementing human resources, implementing finances and addressing attitudes toward venturing at the beginning of an enterprise. Such content is beneficial to the cultivation of students' entrepreneurial competence. During the processes of entrepreneurship, in addition to being alert to and able to recognise opportunities, the skill of reflection is important to overcome the difficulties encountered during the processes of starting an enterprise [8-10]. In addition to the concept of alertness, the meta-cognition of the mental self-model is important. In regard to the study of entrepreneurial cognition, it is necessary to take affections and emotions into consideration, including the discovery of entrepreneurial opportunities and maintenance of entrepreneurial alertness [9-11].

The majority of entrepreneurship education content includes substantial operational activities and general social practices, 45% and 35%, respectively. Regarding students' opinions on the involvement of entrepreneurial activities, they suggested that the purpose of these activities was mainly to develop and cultivate their entrepreneurial competence, followed by the purpose of making money. Furthermore, they have a positive attitude toward participation in entrepreneurial activities during college; and 46% of undergraduates and 57% of graduates intended to start an enterprise [8]. Based on the above, this study intended to investigate opinions on the educational function, educational insights, course design and promotional strategies of entrepreneurship education, as seen from the view of the instructors of entrepreneurship education [8], and to provide such information as references to promote entrepreneurship education in Taiwan, thus, improving students' employability.

Based on the motivations above, the research purposes are:

1. To investigate opinions on educational functions, educational insight, course design and promotional strategies of entrepreneurship education, as seen from the perspective of instructors of entrepreneurship education.
2. To propose effective strategies for the promotion of entrepreneurship education in technical institutes and colleges in Taiwan based upon the research results.

METHODS AND IMPLEMENTATION

This study conducted in-depth interviews of five selected teachers, who had been giving lectures on entrepreneurship education in technical institutes and colleges for more than five years as its research subjects. These teachers have a good understanding of both the entrepreneurship education background and teaching and, therefore, can provide good opinions on entrepreneurship education and instructional teaching patterns.

Based on the results of literature reviews, an interview outline was developed to conduct pre-interviews, which were then used to amend the interview outline, contents, order and terminology. Regarding the formal interviews, these were conducted based on the interview outline and protocol, and recorded with the consent of the subjects.

According to the data obtained from the interviews, modified analyses were applied to arrange and analyse the interview data of each subject, with concept analysis performed on the interview content for the purpose of encoding the subjects' responses. Regarding data analysis, constant comparative analysis was applied to arrange, analyse and record the differences and similarities of all data, which was compared with relevant data presented in the literature. Suggestions were proposed to promote improvements in the operation of entrepreneurship education according to the research findings. The background, time of interview and codes of the research subjects are shown in Table 1.

Table 1: Summary of the research subjects.

| Code | Background | | | Time of interview and code |
|------|---------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| | Occupational title | Department | Teaching subjects | |
| A | Associate professor | Department of Business Administration | Strategic management, strategic alliances and acquisitions, management case studies | 7 September 2010 (A907) |
| B | Associate professor | Department of Marketing and Distribution Management | Global logistics management, warehousing, transportation management | 15 September 2010 (B915) |
| C | Lecturer | Department of International Trade | Global logistics information management, international trade practices, international trade finance practices, international business practice courses | 23 September 2010 (C923) |
| D | Assistant professor | Department of Accounting Information | Accounting information systems, non-profit accounting | 9 October 2010 (D1009) |
| E | Associate professor | Department of International Trade | International trade practices, cross-strait economic research, economic and trade research | 13 October 2010 (E1013) |

RESULTS AND DISCUSSION

Educational Functions of Entrepreneurship Education

It was found that teachers at technical institutes and colleges suggested that, in order to begin an enterprise the following are required tact, need for achievement, need for autonomy, need for power, social orientation, self-efficacy, endurance, propensity for risk taking, practical skills, market awareness, creativity, flexibility and entrepreneur intentions [11][12]. Entrepreneurship education is different from MBA education or business administration education, in which distinct educational units are provided. The main objective of entrepreneurship education is to motivate students' intentions and actions to engage in establishing an enterprise. In order to create the opportunities for using entrepreneurship education, it is necessary to take student selection, course content, learning methods, resource provision, external network linkage, establishment of environment, etc, into consideration. It is also necessary to recruit or to train staff to with appropriate capabilities. The contents of subject interviews are summarised as follows:

Entrepreneurship education is superior to business administration education as it enables students to obtain better entrepreneurial knowledge and learning of the aspects of industry analysis, entrepreneurial marketing,

innovative management, research and development management, business strategy, and entrepreneurship theories (A907).

In my experience as an instructor of entrepreneurial education, entrepreneurship education enables students to obtain better learning in the aspects of analytical ability, organisational skills, determination, communication skills and team-working. In addition, factors such as individual personalities, courses, and environments will affect the learning of entrepreneurial knowledge and competence (D1009).

The concept of entrepreneurial education is to encourage students to transform the passive concept of employment into the active concept of beginning an enterprise (C923).

The main idea of entrepreneurial education should be to encourage students to start an enterprise as their career option and to develop students' meta-cognition and decision-making abilities in entrepreneurial learning (C923).

In Taiwan and abroad, entrepreneurship education has been regarded as one of the approaches that assist students in their career development, which helps to solve unemployment issues and to promote effectively the reform and development of educational curriculums in technical institutes and colleges (E1013).

Educational Insight into Entrepreneurship Education

It was found that teachers at technical institutes and colleges suggested that the actual learning content of entrepreneurship education is to learn about entrepreneurial concepts and the habits of entrepreneurs. School courses can cultivate entrepreneurs' potential traits, including specific personal traits, entrepreneurial beliefs and perceptions of entrepreneurial competence [12][13]. Entrepreneurship curricula can effectively develop students' abilities in team-work, problem-solving and creative thinking [3]. Entrepreneurship educational curricula should include the business economy and performance, management and law, personnel studies, and small business and retail management, in order to develop learners' entrepreneurial competence including entrepreneurial attitudes, entrepreneurial beliefs and perceptions of entrepreneurial competence [12]. The core concept of entrepreneurship courses should be objective-oriented mobile learning the development of which can be divided into major stages namely, course preparation, formation of basic concepts, mobile learning, preparation for participation in business competition and experience sharing. The contents of the interviews are summarised as follows:

In the educational insight into entrepreneurship education, entrepreneurial knowledge, entrepreneurial skills, and entrepreneurial attitudes are important in entrepreneurship education (A907).

Importance should be attached to oral expression and written communication skills for negotiation skills concerning entrepreneurship, as well as the training of the knowledge and skills required for a start-up (B915).

The core content of entrepreneurship education should include marketing, economics, finance, accounting, management and information systems (C923).

As a matter of fact, entrepreneurship is concerned with global markets, legal systems and business planning, as well as entrepreneurial attitudes to entrepreneurial opportunities are also important issues (D1009).

To integrate entrepreneurship into education and shorten the time to practical applications, the education of integrated entrepreneurial knowledge should be provided, and teachers that for entrepreneurship education should be cultivated (E1013).

Course Design of Entrepreneurship Education

This study found that teachers at technical institutes and colleges suggested that regarding the development of entrepreneurship education in schools, the primary concern was to identify and specify general and professional entrepreneurial competencies that could be taught at technical institutes and colleges. Schools can develop the courses of entrepreneurial competencies relevant to various industries. In addition, entrepreneurship educational curricula should be established that include entrepreneurial competencies. Furthermore, entrepreneurship education should be integrated into instruction. Teaching materials and methods should be designed to effectively integrate entrepreneurial competencies [14-16]. The focus of entrepreneurship courses should be on dimensions, such as the collection of entrepreneurial information, planning of entrepreneurial activities, implementation of entrepreneurship, execution of human resource management, execution of financial strategies and entrepreneurial attitudes. The variables related to entrepreneurial competencies include autonomy, need for fulfilment, dynamism, risk-taking, taking initiatives, assuming responsibility and determination [5]. The contents of the interviews are summarised as follows:

Regarding the instruction and mentoring mechanisms of instructional activities, successful entrepreneurs and individuals in cooperation with those that have entrepreneurial experience can be invited to give lectures (C923).

For entrepreneurship education, other than completing the internship courses, it is hoped that students can experience the functions of entrepreneurship education through entrepreneurial mentors and advisors, who began an enterprise several years after graduation (D1009).

To develop entrepreneurship education, the primary concern is to identify entrepreneurial competencies that can be developed at technical institutes and colleges, and to specify general and professional entrepreneurial competencies in order to design entrepreneurial competence indicators that meet the needs of industries and support students' careers. Afterwards, schools can develop the educational courses for cultivating entrepreneurial competencies according to familiarity with the different competencies required in various industries (B915).

The entrepreneurs with innovative skills are less likely to be affected by any bias against their current status and are able to seek information to change their current status. Innovation should be included in the design of entrepreneurship courses (A907).

Strategies for Promoting Entrepreneurship Education

It was found that teachers at technical institutes and colleges suggested that the mentoring activities of entrepreneurial mentors were one of the most effective strategies for promoting entrepreneurial education. In addition, the pyramid model of entrepreneurial mentor was proposed by this study. According to the model, entrepreneurs or entrepreneurial mentors dominate entrepreneurial motivation, human resource development, information, physical infrastructure, potential entrepreneurs and finance [17]. Entrepreneurial mentors' interdisciplinary curriculum design can help students learn business innovation from entrepreneurial thinking, actions and leadership, design thinking and team-work [18]. From the perspective of cognitive learning of mentoring group discussions, entrepreneurs increased management knowledge and skills, improvement in business visions, identification of new investment opportunities, development of strong learning awareness and self-efficacy, verification of personal images in enterprises and a decreased sense of the loneliness of fighting a lone battle can help improve entrepreneurs' coping abilities [19]. The contents of the interviews are summarised follows:

It is necessary to establish an industrial-academia integrated employment system to provide entrepreneurial mentors using physical or digital teaching (A907).

Students' involvement in entrepreneurial learning during internship education, such as participation in entrepreneurial business competition, BP internship, and corporate internship, can help increase their level of involvement in entrepreneurial educational, as well as their learning effectiveness concerning entrepreneurship education (B915).

An example from the US deals with entrepreneurial education involving retail stores. With the sponsorship of educational groups and associations, teachers apply team-work activities for a week, and participate in entrepreneurial activities, including writing entrepreneurial schemes, seeking funds and stores, looking for store locations, naming a store, determining business opportunities, determining commodity selling prices, calculating costs, and advertising. Such progressive activities can help students to effectively participate in entrepreneurial educational activities (D1009).

To become proficient in entrepreneurship education, entrepreneurial mentors can make suggestions for teaching materials and engage in instructional activities, such as demonstrating, coaching, explanations, guiding, and amending. Moreover, learners' observations, practices, and applications, as well as interactions between instructors and students can all be included in instructional activities (B915).

What courses should be provided in entrepreneurship education? How to best present lectures concerning entrepreneurship education? Are students brave enough to begin their own enterprises after education? How many years after graduation would students begin an enterprise? Can the roles and functions of entrepreneurial mentors, as arranged in entrepreneurship courses, be put into practice? Studies abroad have indicated that with the consultation provided by entrepreneurial mentors, 62% of new entrepreneurs experienced an increase in learning effectiveness of cognitive learning, while 35.9% experienced an increase in the learning effectiveness of learning achievement and effective learning (C923).

CONCLUSIONS AND RECOMMENDATIONS

The educational functions of entrepreneurship education should include the acquisition of various competencies, such as technical competence, management competence and individual entrepreneurial competence. Technical competencies include writing, oral communication, monitoring of the environment, practical skills and interpersonal relationships [21][22]. Management competencies include planning and goal setting, decision making, interpersonal relationships, marketing and finance. Individual entrepreneurial competencies include the assumption of risks, innovation and change-oriented development. According to the criteria specified in the National Standard for Business Education, as amended

by Chou, Shen, Lee and Hsiao, published by US National Business Education Association, the entrepreneurial competencies required by electronic commerce are divided into ten major categories: entrepreneur's vision, entrepreneur's opportunities, marketing, economics, finance, accounting, management, global markets, legal capacity, business planning and information systems competence [23]. Such information can be provided as guidelines for entrepreneurship education to develop future policies concerning entrepreneurship education in technical institutes and colleges.

Educational insight into entrepreneurship education should be based on basic entrepreneurial competencies, including entrepreneurial environmental design and development, establishment of social networks for entrepreneurship education, cultivation of entrepreneurs, entrepreneurship, recognition and identification of entrepreneurial opportunities, planning and obtaining entrepreneurial resources, organisation and management of entrepreneurial teams, strategic planning and business model design, start-ups, entrepreneurial growth and withdrawal from management. Entrepreneurship education is characterised by outstanding innovation. It is more important to put entrepreneurship theories into practice than just to learn. The main objective of entrepreneurship education is to allow education to meet current needs for the development of societies, economies and cultures. In addition to developing learners' decent psychological quality and personality traits, it is also important to develop their ability to engage in actual practice, and cultivate their social adaptation and multiple coping abilities in order to cultivate the talents required by future societies and industries. Therefore, entrepreneurial competencies include professional technical competence, business management, social communication competence, competence in analysing and solving actual problems, competence in receiving and processing information, and integrated competence in seizing and creating opportunities.

The main framework for course design of entrepreneurship education includes three categories: foundation curricula, core curricula and integrated curricula. These should include the following: 1) a foundation curriculum has four categories: cultivation of entrepreneurs, development of new business and business management, entrepreneurial environmental planning and management, innovative research for specific industries; 2) a core curriculum: entrepreneurial decision making and processes, characteristics of entrepreneurs and their influence on economic development, the influence of entrepreneurial development on both domestic and international economies, triggering of innovation, the discovery and assessment of entrepreneurial opportunities, writing and expressing entrepreneurial schemes, obtaining entrepreneurial resources, control and management of enterprise growth, intra-enterprise nature and operation; and 3) an integrated curriculum includes three types of internships: entrepreneurial advisers, entrepreneurial competitions.

Regarding the strategies for promoting entrepreneurship, education should be integrated with instruction to emphasise both entrepreneurial competencies and entrepreneurial motivation, which have an important influence on students' entrepreneurial learning. There is a need to establish a mentoring system of entrepreneurial mentors, which can assist in the socialisation and entrepreneurial instruction for start-ups. For students, entrepreneurship education can transform an inclination into entrepreneurship. The required competencies include strong entrepreneurial attitudes, practical vision, cognition learning abilities, cognitive learning perceptions, trust in interpersonal relationships, entrepreneurial organisational design and development, project management, entrepreneurial management for different business competition, thought processes, knowledge management, absorbing experts experience, emotional intelligence and strategically intuitive feelings. For technical institutes and colleges to promote entrepreneurship education, it is necessary to integrate the instructional activities. Schools should design teaching methods and materials that effectively integrate entrepreneurship education into formal courses, such as general subjects, professional subjects and internships, as well as potential courses, such as extracurricular activities, club services, school competitions and skills certification.

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