Course Module Development and Learning Achievements of Entrepreneurship Education: A Perspective of Taiwanese Case

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ABSTRACT

The purposes of this study were to develop Course modules of micro-enterprises entrepreneurship education and evaluate learning achievements of Taiwanese vocational college students by applying Collaborative Action Research techniques. The members of this research group consist of practically experienced or devoted entrepreneurship course instructors, local entrepreneurs and CEOs (mentors) of the Industry alliance with the school in question. Through theoretical survey and focus-group forums, thirteen core course modules for micro-enterprise entrepreneurship were developed. The results showed that these modules could enhance learning of professional knowledge and promote learning transition. Keywords: Instructional Module; Learning Achievements; Entrepreneurship Education; Collaborative Action Research

INTRODUCTION

A junior college education or higher is interested in further education; however, 60.69% of students do not intend to undertake further studies (DGBAS, 2005). Information on jobs Entrepreneurship education is a form of education that aims to develop and improve students' basic abilities in setting up new businesses; it also fosters an appetite for business, ambition, and spirit of adventure. The objective is to prepare the student to engage in business, enterprise, and commercial planning (Ronstadt, 1985; Chou and Shen, 2003a&2003b&2003c). UNESCO has placed the passport of entrepreneurship education on a par with those of academic and vocational education, calling it “the third passport”. More than business management education, entrepreneurship education stresses the entrepreneurial squad’s initiative and the development thereafter, and their willingness to take on a variety of managing roles in an organization. Entrepreneurship education therefore can not only satisfy the educational idea of “learning-by-doing”, but also accord with the thought of “collaborative learning”; it is in the mean time, a cooperative education scheme between academia and industry.

Entrepreneurship education generally treats the writing and execution of business set-up plans as result testing of its teaching. During the teaching process, students are organized in teams so that from discovering business opportunities – developing products, looking for sales points, to surveying market, etc; all of these activities are carried out jointly (Wang, 2002). Figures from Taiwan's Directorate-General of Budgeting, Accounting and Statistics (DGBAS) suggest that 39.31% of students with ekers from the Council of Labor Affairs (CLA) shows that as many as 320,096 people looking for their first job were unable to find a position immediately in 2005 (CLA, 2005). The CLA has provided funding for entrepreneurship courses at the secondary and tertiary education levels in order to bring the skills of graduates of vocational education closer to the needs of employers (CLA, 2005). Entrepreneurship is now a commonly-taught course in universities and colleges throughout Taiwan, and research has indicated that
it helps students develop a range of skills including analytical skills, organizational skills, judgment ability, communication skills, teamwork and cooperation capability which are valuable in the workplace (Wang, 2002) and these have also been identified as the skills that vocational students are particularly lacking. (Chou & Shen, 2003b) Therefore, by joint learning, entrepreneurship courses should be able to enhance student’s motivation to learn and develop abilities to effectively utilize and integrate professional knowledge. It thus improves their prospects for employment after graduation.

The success of entrepreneurship education is dependent on input from mentors (business owners or professional managers). They must share their experience in actual business situations with students, as a complement to the professional skills taught by school instructors. However, these two elements – academic knowledge and hands-on experience, must be well integrated and coordinated so that both resources can be effectively transmitted to the students. Careful planning, adjustment and change of course format and content are therefore necessary (Hsiao, 2001; Chen, Greene, & Crick, 1998). Cooperation with enterprises is a key plank in the development strategies of Taiwanese vocational institutions. Basically, the main way of cooperation is such that enterprises provide funds while the academic institution provides human resources. This provides an important boost to the research of the instructors, but it does not have a direct impact on the students’ learning quality. In fact, the biggest resource that enterprises can provide that can directly improve student’s learning is no more than human capital. However, the input from business speakers tends to be fragmented, as few micro-enterprise entrepreneurs can commit to teaching for an entire semester (Watt, 2002). Therefore, it is most pressing to plan appropriate education schemes: utilizing the notion of cooperative teaching and integrating enterprise resource into the overall course plan.

In recent years, Taiwanese vocational institutions have laid emphasis on employing instructors with working experience, or providing more on-the-job training to expand instructors’ practical experience. Although instructors’ practical experience does have a positive effect on student’s learning (Hsiao, 2001), it is not clear that this has any direct effect on students’ attitudes towards work or their employability. Therefore, in designing appropriate teaching schemes, practical experience should be integrated into the curriculum, rather than be fragmentally scattered passively according to the needs of different courses. As a result, by integrating academic and enterprise resources, this research develops the entrepreneurship course modules and offer teaching materials and teaching strategy. From the above discussion, entrepreneurship education emphasizes interdisciplinary and resource integration; and by advocating this education scheme, human resources from enterprise can be systematically incorporated into academic courses, and instructors can select the most crystal enterprise experiences to convey to the students. This is important in developing the cooperative education between academia and enterprises.

Entrepreneurship education is in its infancy in Taiwan and teaching materials have yet to be developed. At this time, schools offering entrepreneurship-related courses have sprung up all over the country, in both ordinary and vocational higher education. For example, in 2004, 13 schools began new entrepreneurship courses; in 2006, it was 21 (Department of Education, 2007). However, these courses are mostly designed by individual instructors and focus on a single discipline. The educational idea and teaching materials of emphasizing individualism and competency so as to develop entrepreneurial ability and entrepreneurial spirit, is yet to be developed. Wen (2003) suggested that there are individual, curricular and environmental aspects in promoting education; he proposed that entrepreneurship education should begin from individual motivation, training in entrepreneurial abilities, and the entrepreneurship education environment. Wen’s proposals have some value as a reference, but they remain confined within conventional educational theory that deals only with single course curriculum.
In evaluating the changes in students’ cognition after learning these modules, we followed the methodology of Zanting, Verloop and Vermunt (2001). Based on this methodology, the experience and belief constructs which students gain from their mentors as the students become more experienced, pass through three phases—externally supported, transitional, and self-regulatory. Hence, this research will explore student’s cognitive changes in these three stages which can be briefly described as follows: 1) externally supported stage: this reflection at different levels, from routine, technical, practical to critical level toward professional socialization during practical training; 2) transitional stage: this indicates three levels on which the practical knowledge transitions from abstract form to concrete form and includes the knowledge transformed into actual behavior in daily learning activities, of individual characteristics and in environment-specific action; 3) self-regulatory stage: this demonstrates what the student learns under the direction of the mentor, including work proficiency, goals and values, organizational culture and interpersonal relations. Brown (1983) has found that enhancing the post-cognitive abilities of students by appropriate training can improve their problem-solving abilities. Duncan (1996) also posited that apprenticeship is an effective learning mechanism, and that systematic plans for entrepreneurship education will improve students’ professional socialization and thus their job-seeking competency through the imparting of mentor’s experience imparting and the apprenticeship learning.

This research, therefore, based on the module concept on one hand, develops course modules which meet the diverse needs of students’ progress. On the other hand, it also aims to understand the effectiveness attained by learning these modules, and to thus provide pars for the planning and motivating of entrepreneurship education. Using the basis of the research background and motivation stated above, the purpose of this research is to develop entrepreneurship’s core course modules for micro-enterprise in vocational institutions and evaluate their learning effectiveness. It has the following objectives:

1. Develop core course modules of entrepreneurship education for micro-enterprises.
2. Understand students’ levels of satisfaction with the entrepreneurship course modules.
3. Analyze students’ cognitive changes brought about after learning the modules.

METHODS AND PRACTICE

The research focuses on developing entrepreneurship’s core competency course modules of micro-enterprise in vocational institutions and their learning effectiveness. The methods and procedures employed are stated in the following.

METHODS

Development of course modules

Collaborative action research methods were used, and practically experienced and interested instructors from selected institutions, community entrepreneurs and CEOs (mentors) from academic-industry cooperation spin-offs were invited. They formed the research team and develop course modules and a syllabus through theoretical investigation and joint discussion. The team then carried out collaborative teaching and evaluated the students’ progress with the modules in order to examine and improve the modules. Records of the research team meetings, regular discussions by the researchers, instructors and mentors, and other documents generated in the course of the research formed the raw data on which this paper is based, so as to perfect the planning and implementation of the course modules.
Student’s achievement and changes in student’s cognition

44 fourth-year students taking an entrepreneurship course module at the Transworld Institute of Technology were the subjects of the research, since fourth-year students are facing imminent exposure to the labor market after a final year of study. While the students took the modules, the classes were observed to record the learning process and situation; furthermore, deep interviews, thinking-aloud and stimulated recall procedures were taken. The obtained data was then transcribed. Finally, case study and coding were carried out in order to understand students’ achievement. They also evaluated student’s cognitive changes after taking entrepreneurship course modules through class observation and analysis of documents.

Transworld Institute of Technology was chosen for this case study because it was selected by the Ministry of Education in 2003 as a key school for the development of entrepreneurship education. In 2003 it was also the first institution to establish a center for medium-to-small business entrepreneurship education. It has actively and systematically promoted education and research in micro-entrepreneurship education.

Research design and data collection

The sources of data and data-collection tools used in this study are presented in Table 1. Data sources include classroom activities, telecast teaching and discussion, business set-up plan reports and their execution, observations and interviews with entrepreneurs, and outside-school experience. Data collection tools include workplace observation forms, workplace diaries, analytical forms of entrepreneurial success, and also transcripts of interviews with entrepreneurs (mentors) and instructors on what they discovered from the course. An itemized account of the main activities and data collection tools is as follows:

A. Telecast teaching and discussions: observing and commenting on the taped recordings of entrepreneurs and their hands-on shop activities.
B. Teaching tape-recording: filming of teachings by entrepreneurs (mentors) and instructors.
C. Writing a business set-up plan report and executing: students are divided into ten business setting-up teams, each directed by one mentor. Then they must develop a business set-up plan, treating the campus as their market and the students/faculty as their customers; then the ten business units proceed to sell by setting up stalls in the campus at the same time and place. Students are required to give oral and written presentations on their results, and oral presentations are tape-recorded and graded.
D. Observation of and interviews with entrepreneurs: for three days, students visit local entrepreneurs in their workplaces to observe their operations and make interviews under the supervision of their mentors.
E. Workplace experience: students undertake 160 hours of work experience in the industry in which they want to start a business.

<table>
<thead>
<tr>
<th>Theoretical motivation</th>
<th>Concept learning</th>
<th>Scaffolding</th>
<th>Collaborative learning</th>
<th>Situational learning</th>
<th>Situational learning</th>
<th>Situational learning</th>
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</tbody>
</table>
Data analysis methods

Nvivo software was used to encode and transcribe qualitative data and the analysis was done by critical incident technique (CIT). Data were subject to modified analysis and concept analysis and then coded, then the similarity and dissimilarity of each record was assessed by constant comparative analysis. All data from the study was compared and discussed, and the research conclusions finally drawn. Two coders prepared the data, and their inter-coder reliability was 89 (Wimmer & Dominick, 2000). Self-administered questionnaires were used to assess students’ satisfaction with the modules and the cognitive changes that the modules produced. Students recorded their responses to a series of statements on a five-point Likert scale ranging from “agree” to “disagree”.

RESULTS AND DISCUSSIONS

The results of the module development and student’s satisfaction assessment phases of the project are presented below.

3.1. Thirteen entrepreneurship course modules were developed based on the core competencies of the micro-entrepreneurs.

The core competencies for micro-entrepreneurs is described by Shen (2006) and measured using the methodology described in Li (2004); based on the core competencies, this research developed entrepreneurship course modules through many rounds of discussions among subject specialists and entrepreneurs, and each module formed its own syllabus. The thirteen modules, set out in Table 2, are part of an integrated curriculum. The modules were grouped for teaching purposes into three courses. The courses are: entrepreneurship theory; micro-enterprise operations; and entrepreneurship in practice. The courses were collaboratively taught by the developers.

<table>
<thead>
<tr>
<th>No.</th>
<th>Developer</th>
<th>Position</th>
<th>Name of Module</th>
<th>Course</th>
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<td>Tsai Huei-Ching</td>
<td>Manager, China Productivity Center</td>
<td>Interpersonal relations and communication skills</td>
<td>Entrepreneurship theory</td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Position/Title</td>
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<td>Course Focus Details</td>
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<tr>
<td>7</td>
<td>Chen Ming-Hsi</td>
<td>CEO, Fu-man Communications</td>
<td>Internet technology in business management</td>
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<tr>
<td>8</td>
<td>Liaw Yi-Long</td>
<td>CEO, Mei-jih Hsin</td>
<td>How to read a financial statement</td>
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<tr>
<td>9</td>
<td>Liu Shin-Yun</td>
<td>CEO, Hsin-kai</td>
<td>How to manage finances for start-up</td>
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<tr>
<td>10</td>
<td>Liu Chin-Wei</td>
<td>CEO, Li-de</td>
<td>Market surveys and analysis</td>
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<td>2</td>
<td>Lin Hsien-Ta</td>
<td>Senior manager, security firm; lecturer in finance</td>
<td>Crisis-management skills for micro-entrepreneurs</td>
<td>Micro-enterprise operations</td>
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<td>1</td>
<td>Lin Ching-Shin</td>
<td>CEO, accountancy firm</td>
<td>Micro-enterprise legal affairs</td>
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<td>3</td>
<td>Chuang Ming-Kuo</td>
<td>Professor, Dept of International Business Management, Dayeh University</td>
<td>5s in the micro-enterprise workplace</td>
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<tr>
<td>4</td>
<td>Tang Yi-Guan</td>
<td>Senior associate, Froch</td>
<td>Sale skills for small businesses</td>
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<tr>
<td>5</td>
<td>Chan Tsong-Pei</td>
<td>Chief, Yunlin County Govt. Business Department</td>
<td>Registration of micro-enterprises</td>
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<tr>
<td>11</td>
<td>Vincent Lin</td>
<td>Senior lecturer in management and advisor to student businesses</td>
<td>Work experience</td>
<td>Entrepreneurship in practice</td>
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<tr>
<td>12</td>
<td>You Ching-Sing</td>
<td>Senior lecturer in management</td>
<td>Entrepreneur lectures</td>
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<tr>
<td>13</td>
<td>Lin Bi-Lu</td>
<td>GM, Mu-Yuan</td>
<td>Business set-up plan: writing and expansion</td>
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</table>

**Student satisfaction with entrepreneurship course modules**

**Delivery of modules**

Students were asked about their level of satisfaction on seven settings: introducing business-people/external mentors; mentor’s hour arrangement; course content; teaching style; instructors’ attitude; professional knowledge; administration and assistance in seeking for employment. As in Figure 1, the highest level of satisfaction was “professional knowledge”, with 37 students answering “very satisfied” or “extremely satisfied”. In descending order of levels of satisfaction, the seven aspects were: professional knowledge; administration and assistance in seeking for employment; instructors’ attitude; introducing business people/external mentors; mentor’s hour arrangement; course content. The results of this study support the findings of Liu (2001) and Wang (2002) that entrepreneurship education can improve students’ analytical skills, organizational skill, judgment ability, communication skills and cooperation skills. Starting an enterprise means establishing an entirely new business, using one’s own initiative to enhance sale and create business success. Entrepreneurial ability is a high level, integrated skill set based on one’s intelligence; it is a prominently creative ability (Hegarty, 2006; Hyti & O’Corman, 2004; Co & Mitchell, 2006; Jones & Iredale, 2006)
Note: meanings of setting abbreviations in above figure are as follows
A: introducing business-people/external mentors
B: mentor’s hour arrangement
C: course content
D: teaching style
E: instructors’ attitude
F: professional knowledge
G: administration and assistance in seeking for employment

Figure 1: No of students in different satisfactory categories/setting

Student’s feedback
Students were surveyed on their suggestions for improving the courses. The items students suggested include: more class hours with mentors; more workplace experience hours; more on-site observation and interviews with entrepreneurs; more general entrepreneurship classes; more assistance in seeking employment; promoting collaboration with industry, and more lectures hours of writing and executing business set-up plans. As in Figure 2, in descending order the most agreed on were four: more assistance in seeking employment; promoting collaboration with industry; more on-site observation and interviews with entrepreneurs. The next were: more workplace experience hours; more class hours with mentors; and more general entrepreneurship classes. These results back up Wen’s (2003) findings that offering of entrepreneurship courses can help to bring about the most significant improvements to learning entrepreneurship knowledge and skills.

Note: meanings of item abbreviations in above figure are as follows
A: more class hours with mentors
Student’s cognition change

Changes in student cognition were evaluated after the following activities: telecast teaching and discussion; teaching tape-recordings; developing and executing a business plan (micro-enterprise practice); on-site observation and interviews with entrepreneurs; workplace experience. The results are presented in Table 3, and described below.

Externally supported cognition

Externally supported cognition refers to enhancement in the way the students think. The data show that the students believe the following factors to affect their thinking (most important factors listed first in each case):

1. Teaching tape-recordings, micro-enterprise practice affect routine thinking.
2. On-site observation and interviews with entrepreneurs, teaching tape-recordings, workplace experience: these are factors that affect relatively higher than the previous thinking level and can improve and replace previous technical thinking level.
3. Micro-enterprise workplace experience, telecast teaching and discussion, on-site observation and interviews with entrepreneurs affect practical thinking.
4. Telecast teaching and discussion helps to improve student’s critical thinking.

These results are similar to those found by Hegarty (2006). Entrepreneurship education has traditionally made use of lectures, case studies, visits to businesses, teamwork, and hands-on demonstrations; but teaching approaches can also include guest speakers, novel assessment methods, projects or interchange-student actual entrepreneurship decision making activities, and e-learning. These approaches can all be of benefit to student’s knowledge and understanding, improve their professional/practical skills and their transferable/key skills.

Transitional cognition

Transition refers to the development process of student’s practical knowledge from an abstract form to a concrete form. The data show that the students consider the following factors to affect this process:

1. Activities that can help students turn pedagogical knowledge into “images” of actual learning behavior in daily learning activities include: teaching tape-recordings, business set-up plan reports writing and execution, micro-enterprise workplace experience, and observation and interviews with entrepreneurs.
2. Activities that reflect the cause and purpose of why individual student takes actions and activities that posses generally stated and individually idiosyncratic “practical principles” include: telecast teaching and discussion, business set-up plan report writing and execution, micro-enterprise workplace experience, observation and interviews with entrepreneurs.
3. Activities that briefly state the “implementation principle” of actual behavior in some special circumstance under the direction of “practical principles” include: observation and interviews with entrepreneurs, telecast teaching and discussion, teaching tape-recording.

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**Figure 2: No. of students for different suggestions**

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The results of this paper are in accord with the viewpoint of Berman & Ritchie (2006) and Levenburg, Lane & Schwarz (2006); through integrated entrepreneurship education activities, not only the technicality of professional skills is represented, but also the need of entrepreneurial attitude is included in the entrepreneurial activities; in particular, entrepreneurship education can enhance student’s activeness towards employment. Hegarty (2006) pointed out that early entrepreneurial competence is beneficial in the development of leadership, curiosity and entrepreneurship skills; it also helps in the learning of cognitive, affective and psychomotor skills in entrepreneurship education).

Self-regulating cognition

Self-regulation refers to the student’s regulative content in cognition while taking these micro-enterprise entrepreneurship course modules. The data show that the students deem the following factors conducive to cognitive changes after taking the course modules: 1. Observation and interviews with entrepreneurs, workplace experiences enhance work proficiency. 2. Telecast teaching and discussion, observation and interviews with entrepreneurs help recognizing goals and establishing values. 3. Teaching tape recordings improve working attitude. 4. Telecast teaching, teaching tape recordings, and micro-enterprise practice (business set-up plan execution) improve interpersonal relations. 5. Micro-enterprise practice helps familiarizing with historical conventions. 6. Workplace experience improves use of role-appropriate language. Combining with the research result of Shen (2006), the result of this research indicates that education for micro-entrepreneurs should cover the following key areas: entrepreneurial spirit, management skills, and technical skills. There are three key roles: 1. Entrepreneurial spirit that includes: initiative, insight into business opportunities, and ability to deal with setbacks; 2. Management skills that include: managing interpersonal relation networks, product exhibitions, market demand positioning, marketing techniques, managing finances; and 3. Technical skills that include: developing new products, and product manufacturing techniques.

These skills differ from the core competencies required by business managers. The main difference lies in the emphasis for micro-entrepreneurs on technical skills and individualized management techniques, and particularly entrepreneurial spirit (Shen, 2006; Mueller & Thomas, 2000).

<table>
<thead>
<tr>
<th>Cognitive type</th>
<th>Action type</th>
<th>Telecast teaching and discussion</th>
<th>Teaching tape recordings</th>
<th>Developing and executing a business set-up plan</th>
<th>Observation and interviews with entrepreneurs</th>
<th>Workplace experience</th>
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</thead>
<tbody>
<tr>
<td>Externally supported</td>
<td>Routine thinking</td>
<td>circle</td>
<td>○</td>
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<td></td>
<td>Technical thinking</td>
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<td>Practical thinking</td>
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<td>Critical thinking</td>
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<td>Image</td>
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<td></td>
<td>Implementation regulation</td>
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CONCLUSION

By employing Collaborative Educational Study this research develops core course modules for micro-enterprise entrepreneurship education. Students taking the modules were surveyed by questionnaire to evaluate their satisfaction extent and to investigate their cognitive changes induced by the modules by applying qualitative research methodology.

This research has developed 13 course modules and carried them out; and the results shows that these course modules are conducive to student’s learning of professional skills and greatly help student’s self-reflection, learning transition, work proficiency and employment competence. Specifically, these syllabi can provide students in Taiwanese institutions of vocational education with an opportunity to systematically “learn by doing, do while learning”. This will motivate their learning, give confidence in learning again and thus improve educational quality with real benefit.

REFERENCES

Chinese language


English language


