Entrepreneurship Literacy for Educational Technology Students – An Action Research

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Abstract: Entrepreneurship education has become an important issue in higher education nowadays because it is part of the process in shaping students' entrepreneurial characters in order to respond to global challenges in building a nation by creating their own jobs or becoming young entrepreneurs. Entrepreneurship course is taken by students of all study programs at Universitas Pendidikan Indonesia. Making students to be literate in entrepreneurship is more important as a form of learning outcome implementation so that students can start their own business. In the context of educational technology, the literacy is directed towards developing the competency of entrepreneurial character development in the field of educational technology. This study used action research because it focuses on the improvement of the entrepreneurship course in order to conduct a more effective course for students of educational technology department. The action research was conducted in two cycles which involve planning, action, observation, and reflection. The research results are the followings: 1) Map of business ideas in the field of educational technology; 2) Business plan; 3) Business products in the field of educational technology.

1 INTRODUCTION

The implementation of entrepreneurship course in higher education is intended to provide knowledge and entrepreneurship experience and to foster students' motivation as new entrepreneur aspirants. Realizing an effective entrepreneurship education requires attention of several aspects. Kasih (2013) reveals that aspects that must be considered in the implementation of entrepreneurship course include designing a clear and targeted entrepreneurship curriculum, establishing appropriate method, selecting teachers who have competence in the field of entrepreneurship, creating entrepreneurship atmosphere, and designing a gradual and continuous learning process.

Although entrepreneurship education has been implemented in universities, its contribution is not as expected yet because the number of students involved in entrepreneurship is still low. There is a number of criticisms on the implementation of entrepreneurship course, as pointed out by Dumiyati (2015), that the material presentation in the course tends to be theoretical and emphasizes cognitive aspect, not contextual, lack of entrepreneurial practice, and lack of facilities and infrastructure to train entrepreneurial skills such as business incubators. Santosa (2014) asserts that the weakness of entrepreneurship development among students principally cannot be separated from the learning method applied in universities.

Sirelkhatim and Gangi (2015) found that common practices of entrepreneurship education program in higher education consisted of three main groups: teaching "about" entrepreneurship, teaching "for" entrepreneurship, and teaching "through" entrepreneurship. While the first group was aimed at increasing students' awareness about entrepreneurship, the second and the third group were found to be more learner-centered, which focused on building entrepreneurial skills and creating situation that enables students to experience creating a new business. Thus, learner-centered entrepreneurship classes prefer to apply experiential teaching methods which include the use of simulations, incubators, internships, and live projects. In this case, out of these methods, Ardianti (2009) revealed that for Indonesian students doing real business or live project was the most preferable. This is probably because this method

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makes learning more challenging and is relevant with students' needs. However, Sirelkhatim and Gangi (2015) and Ardianti (2009) did not recommend any instructional activities that can be replicated, as the best practice of entrepreneurship education in higher education.

This study was conducted as an effort to create a learning process that could give students holistic entrepreneurship knowledge and experience so that not only did they aware about entrepreneurship but they were also motivated to participate in entrepreneurship project and would be able to run a small business after completing the course. This study aims to find out the pattern of learning activities emphasizing the acquisition of business literacy skills in the field of educational technology. The business literacy in question is the ability to behave and act in accordance with the learned knowledge conception, to map entrepreneurship opportunities, to be ready with creativity capital by finding innovative ideas and explore independently business potentials through good networking practice to sustain the entrepreneurship effort.

2 LITERATURE REVIEW

2.1 Trends of Educational Technologist Competencies

Educational technology involves the disciplined application of knowledge for the purpose of improving learning, instruction, and/or performance. The notion of disciplined application of knowledge is included here to reflect the view that educational technology is an engineering discipline in the sense that principles based on theory, past experience, and empirical evidence guide what professional educational technologists do. These principles are derived from basic science and empirical research in such areas as cognition, cybernetics, information science, human factors, learning theory, mass communications, message design, organizational theory, and psychology. Educational technology is inherently an interdisciplinary enterprise. The principle of encouraging problem solvers to reflect on the nature of the problem first can be traced to research in cognitive psychology (Spector, 2016: 13).

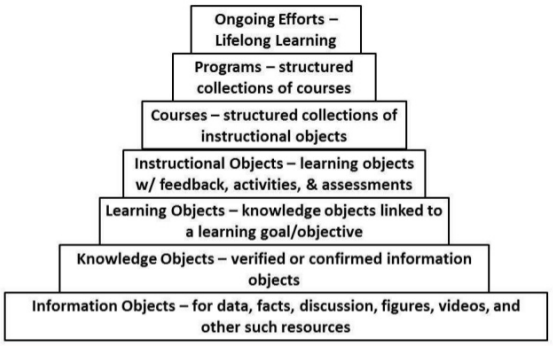

Figure 1: Educational technologies and instructional objects.

Educational technologists have different perspectives on the various processes and activities with which they are involved. Using technology to promote learning, instruction, and performance is far from a formulaic enterprise. There are many approaches, methods, and tools to inform good solutions for the challenging problems educational technologists confront. Figure 1 represents a way to view educational technology in terms of support for learning and instruction, especially with regard to instructional objects, (Spector, 2016).

Referring to the above trends of educational technologist competencies, higher education particularly educational technology study program thus has the responsibility to prepare graduates with academic and professional abilities to plan, develop, utilize, manage, and evaluate learning instruction and performance.

2.2 Entrepreneurship Literacy

An excellent definition of literacy is the "ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of teach enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their communities and wider society", (UNESCO, 2005).

Entrepreneurship education, embraces more than specific the process of firm creation or the detection of business opportunities. It is also the set of activities that foster in the learners, or young people, entrepreneurship mind-sets, attitudes and skills to enable them to be more creative and self-confident in whatever they undertake (European Commission, 2012). Therefore, entrepreneurship education aims to develop more creative and innovative individuals, who seize opportunities in their environment and who

assume the risks to change things, achieving thus their personal fulfilment, social inclusion, active citizenship and employability in a knowledge-based society (Bustamante, 2014).

The purpose of any literacy program is to reduce the lack of knowledge, skills, attitudes and capabilities to perform or undertake an activity. As it was pointed before, we might consider that entrepreneurship illiteracy may reflect: the lack of capability to seize opportunities, to implement them into a new venture that has to be managed or the lack of a proactive attitude towards changes and autonomous solutions. Hence, when implementing an entrepreneurship program we may differentiate between developing entrepreneurial attitudes, skills and capabilities in any of the three previous domains (Bustamante, 2014).

Amongst the most relevant entrepreneurship attitudes are a sense of initiative, risk propensity, self-efficacy, need for achievement and structural behavior. Entrepreneurship skills are those required to detect an idea and to combine resources to a more effective or efficient use (Davidsson, 2003) from an economic or social perspective. They are: creativity, analytic thinking, motivation, networking and adaptability (European Commission, 2012). Finally, entrepreneurship (managerial) capabilities are the knowledge, business skills and the practical know-how and abilities to create, assess, manage and sustain new ventures (Bustamante, 2014).

3 METHODS

The obvious aims of action research are actions of *improvement* and *involvement*, i.e. firstly, the improvement of teaching practice, secondly, the improvement of the perception or understanding of teaching practice by its practitioners, and thirdly, the improvement of the concrete problematic situation by joint collaboration of all involved in action research. This entails a cyclical inquiry that involves planning, acting, observing and reflecting and then re-planning, further action, further observation and further reflection, as illustrated in Figure 2 (Costello, 2003).

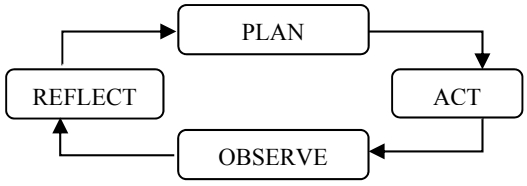

Figure 2: Action research cycle.

The subject of this research was students of educational technology study program who were currently in the sixth semester and took the entrepreneurship course in 2015/2016 academic year. The students consisted of 90 people and were divided into two classes and eleven groups (7-9 people per group). The action cycle was conducted twice with details as follow.

3.1 Cycle I

- Planning: Preparing for learning instrument and instrument for actions, of which filing form as instrument for actions that allow students to generate creative business ideas and opportunities and diary as instrument to describe entrepreneurship motivation.
- Action: Perform learning by giving out the filing form containing business ideas.
- Observation: Observe how students explore the possibilities of business ideas related to educational technology that can be followed up.
- Reflection: Review business ideas generated from previous activity and prepare SWOT analysis for business product development.

3.2 Cycle II

- Planning: In this second cycle, the planning includes preparing for document of SWOT analysis as part of the business plan.
- Action: Create product design to be exhibited at the end of the course.
- Observation: Observe how students work in groups to develop and present the business proposal as well as how they exhibit and sell their products during business exhibition at the end of semester.
- Reflection: Review the output of the course by assessing the business products generated and evaluating the effectiveness of business exhibition conducted.

4 RESULTS AND DISCUSSION

4.1 Cycle I

Session 1 until session 7 of the course was dedicated to provide theoretical foundation for students so that they have broad entrepreneurial knowledge and strong entrepreneurial spirit. The materials include: (1) The concept of entrepreneurship, (2) Entrepreneurship personality and characters, (3)

Profile of successful entrepreneur, (4) Entrepreneurship management, (5) Acquiring capital, (6) Marketing strategy, and (7) Entrepreneurial opportunity in educational technology.

The first cycle was conducted from session 9 until session 11, which was started by planning the learning activities. The lecturer prepared a blank concept map that should be filled by students in order to generate business ideas. Each component of the concept map was given one indicator following 5W+1H method. The descriptors of the 5W=1H method are as follow:

- *What*, this question relates to the type of business that will be run and it also explains the strength and uniqueness of the product to be developed in order to attract prospective costumer to buy. In relation to educational technology, this stage involved identifying the challenging problems faced by educators and finding out what instructional objects that can be used to solve the problems, which finally lead to promoting effective learning and improve learning outcome (Spector, 2016).
- *Why*, this question explains why choosing certain product or business and why customers should buy it. This stage entailed students' creativity in designing a product or an instructional object and the application of entrepreneurship mind-sets, attitudes and skills (European Comission, 2012).
- *Who,* this question determines who will run and manage the business and who will be prospective customers.
- *Where,* this question relates to where the business will be organized and where customers gathered.
- *When*, this question determines when the business will start; and
- *How,* this question explains how to run and manage the business and how to market products.

Actions conducted on the first cycle resulted in identified students' ability in processing and understanding information related to business in educational technology by starting to map business ideas and their supported descriptors. Assessment on students' acquisition of entrepreneurship literacy in educational technology revealed that the students were able to develop entrepreneurial attitudes, skills and capabilities (Bustamante, 2014), which was shown by their motivation, innovation, and creativity in generating business ideas (Davidsson, 2003; European Comission, 2012) in the field of educational technology, that were mapped and presented in the Table 1 below.

Table 1: Educational technology business ideas.

Business Name	Business Idea
Inikita Studio	Inikita Studio is a business engaged in media-based products and services.
Paracord	Paracord is a business related to creation of learning media products and services.
Warung Grafika	Warung Grafika is a business engaged in graphic media related products and services. It offers art of printing or lettering for various printing purposes.
Pakar	Pakar is the acronym of Paper Karya. Pakar focuses on simple media based products and services. The philosophy is making craft using paper such as paper craft, pop-up, and origami. These products can be used as learning media.
D'art Photography	D'art Photography provides products and services related to photo media. The ability to create photos is combined with the current trends and technologies that allow customers to put pictures or photos they want on mug, plates, pins, etc.
Private multimedia	Warung Grafika is a business that provides products and services using Computer Based Instruction that is computer based learning media. It runs its business based on orders besides giving private course on multimedia.
Design, fun animal card, and typography	Design, fun animal card, and typography is a business that provides graphic media based products and services. It offers cards or printed letter art that can be used to decorate walls in schools to make it more meaningful with inspirational and beautiful words.
Popeye	Popeye is a business that provides products related to learning media in the form of cartoon.
Moving Forward	Moving Forward provides products and services of various learning media in the form of digital videos.
13 Project	13 Project business core is making learning media for mathematic subject in elementary school.

The results of cycle I suggest that students were able to process and understand information related to entrepreneurship literacy in the field of educational

technology. This is shown by eleven business ideas generated above, of which 9 businesses are related to production of learning media and 2 businesses are related to program evaluation services and learning and teaching products.

4.2 Cycle II

The cycle II of the action research was conducted on session 12 until session 16 of the course. Students were given five weeks to make business plan, prepare for their product design, make the products, and deliver and exhibit their products at the exhibition located in campus area. On this second cycle, lecturers facilitate students to analyze the strength, weakness, opportunities, and threats to their business, which are presented in the form of business plan.

Group collaboration in making business plan was developed well enough, which can be seen from the quality of business proposals submitted. Collaboration was also conducted with outside parties in the form of mutual agreement especially in relation to production of learning media as products to market. Group work was chosen over individual work because Jones and English (2004) found that students showed less motivation, doubt, and confusion about working individually on their business plan, which might be due to the tension of creative process they should experience. Collaboration helped reduce this tension and made creative process challenging instead of stressing. Consequently, students had high motivation in realizing their businesses and could develop and execute the business plan appropriately. In addition, the products created could meet the expectation of customers.

The business exhibition gained high appreciation from visitors. Almost all groups sold their products out and there were several business that got orders from visitors. The exhibition process was also evaluated by lecturers and the aspects of evaluation were creativity, uniqueness, packaging, selling actions, and cleanliness. In addition, peer assessment was also conducted to measure individual contribution and dedication to their group work. As pointed out by Jones and English (2004), peer assessment allows students to be aware of the performance of their contribution to their group in terms of their communication, coordination and planning skills which are essential to develop their capabilities as future entrepreneurs.

The results of cycle II suggest that students are able to process and understand information related to entrepreneurship literacy in the field of educational technology. This is shown by the products exhibited in the business exhibition, which has successfully drawn many buyers and prospective customers. This means that the businesses can keep running even after the course ends and expect to grow into big business.

5 CONCLUSIONS

The purpose of any literacy program is to reduce the lack of knowledge, skills, attitudes and capabilities to perform or undertake an activity. This action research allowed educational technology students to develop and enhance their entrepreneurship literacy by first building their knowledge on entrepreneurship, seize business opportunities, create and market products which will eventually develop their entrepreneurship attitudes, skills, and capabilities.

This action research resulted in mapping of business ideas, business plans, and business products in the field of educational technology. Furthermore, the undertaken entrepreneurship education program has successfully brought learners to experience the world of entrepreneurs, which motivated them to develop their entrepreneurial skills instead of getting high grades and to continue their business and make it bigger.

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