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Research paper



Technology-based Business Incubator Model as Efforts to Improve the Learning Process

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Abstract

This paper tries to identify technology-based business incubator models as an effort to improve the right learning process. The method used is an experimental method, where in the early stages the criteria for learning technology-based business incubator learning criteria are developed by integrating pedagogical aspects and technological aspects that will be used as experiments through need assessment, then proceed with making a model design. Model design based on the teaching model that will be applied. In the next stage, the implementation of the trial was carried out by using the teaching model and the entrepreneurship courses that were set, and then conducted a trial on the technology-based business incubator learning system with the same teaching model and courses and the same students. The results of this study produce a learning system that is able to create individuation, acceleration, enrichment, expansion, effectiveness and productivity of learning which in turn will improve the quality of education as an overall human-resource development infrastructure.

Keywords: *technology-based business incubator; learning model; entrepreneurship.*

1. Introduction

Technology-based business incubators are designed to help students how to create or establish new and developing businesses so that they are well-established and able to make a profit by providing information, consulting, services and other support. Business incubators have been developed by universities with various approaches and targets. With the Business Incubator, it is expected that universities will be able to implement the knowledge that is owned and participate in the community service program more significantly. Namely growing new entrepreneurs who are able to develop small and medium micro enterprises (SMEs)

Research on the contribution of technology-based business incubators to economic growth began to gain momentum in the 1980s, following the growing phenomenon of business incubation [20], [21-23]. In the 1990s most of the research analyzed data from the US, where technology clusters and techno poles developed around technology generators such as universities, national laboratories, private research and development (R & D) laboratories and other high-tech companies [1-2] in recent [3-10] provide evidence from Canada, Denmark, Greece, Italy, Korea, Norway and Portugal Business incubators (in various forms, such as industrial parks, science parks or technology innovation centers) are institutions that help new entrepreneurs in starting their businesses to improve development prospects and resilience, so that they can survive in the real business environment [11].

Technology-based business incubator was one of the learning models is expected to be one of the learning models that will foster student independence. Internally, the creation of innovations from inventions in universities will continue to grow due to commercialization activities. Technology-based business incubators also remain a part of the education process, especially real learning about how to create value added creation, increase professionalism, be responsible, create reliable entrepreneurs [24-26], and how to form a business community in higher education. Going forward, technology-based business incubators are expected to be one of the spearheads in an effort to maintain their independence. Furthermore, it must be able to be a mediator to encourage the creation and growth of social wealth creation. This research aims: How is technology based business incubator model as effort to improve the learning process in university.

2. Methodology

The design that will be used in this study, which is using the experimental method, where in the initial stage is designed the criteria for learning technology-based business incubator model through the integration of pedagogical aspects and technological aspects that will be used as an experiment through need assessment, then proceed with making a model design.

The design of a technology-based business incubator learning model based on the teaching model that will be applied. In the next stage, the implementation during the implementation of technology-based business incubator learning model using teaching models and entrepreneurship courses was carried out, then conducted a trial on the technology-based business incubator learning system with the same teaching model and courses and the same students.

In the process of testing the implementation of technology-based business incubator learning models, all learning activities are recorded with a video camera. Interviews were conducted on students and lecturers after the implementation was carried out, to find out

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their opinions from the trial data model from interviews and recordings are then analyzed according to the criteria and guidelines that have been made, then an initial research report is made from the results of testing the implementation of the next stage of making guidelines, dissemination and dissemination of technology-based business incubator learning models by inviting parties involved. Academics for more details can be seen in Figure 1.

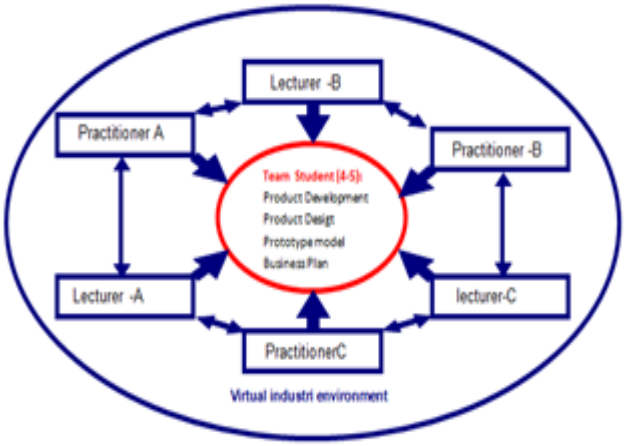

Fig. 1: Learning process through technology-based business incubators

3. Results and Discussion

Application of technology-based business incubators in the learning process at universities can facilitate the interaction between students with material or lecture material. Students can share information or opinions about various matters related to lecturing material or their self-development needs. In addition, lecturers can place learning materials and tasks that must be done by students in specific places on the web to be accessed. In accordance with needs, lecturers can also provide opportunities for students to access certain learning materials and exam questions that can only be accessed by students once and within a certain time span [12]. When drawn the primacy of the learning process using technology-based business incubators are as follows can be seen Figure 2.

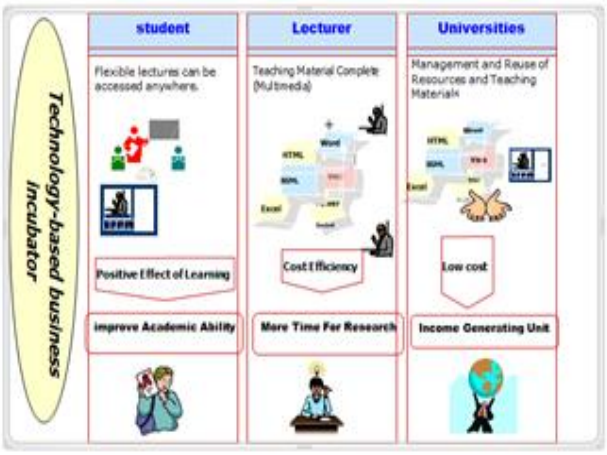

Fig. 2: The virtue of the learning process through technology-based business incubators

As one form of innovative learning models, technology-based business incubator learning models have advantages, including: (1) Providing different learning experiences. Thus, it can overcome boredom and boredom in learning with ordinary methods, (2) Overcoming problems of time and place. (3) Through this model one can do learning easily anytime and anywhere by using a computer connected to the Internet network (4) Establishing independent learning awareness (5) Cost reduction (6) High flexibility (7) Personalization. Students can learn according to their learning abilities. (8) Standardization. Through this learning, model can anticipate differences derived from teachers, such as: how to teach, material and mastery of different material, to provide a more consistent quality standard. (9) Speed. The speed of distribution of lecture material will increase, because the lecture material can be quickly delivered through technology

However, this technology-based business incubator learning model also has drawbacks such as (1) Lack of interaction between teachers and students or between fellow students reduce the function of humans as social beings. (2) Some lecture material requires practice that must be directly under the guidance of the teacher. (3) Problems of skills and knowledge, not everyone understands computers and the Internet (4) Lack of interaction between teachers and students or even between students themselves, which can slow the formation of values in the learning and teaching process. (5) The tendency to ignore academic aspects or social aspects and vice versa to encourage the growth of business aspects (6) Students, who do not have high learning motivation tend to fail.

Understanding of the learning environment emphasizes the role played by the teacher, the role of students during learning, the format of instruction and learning strategies themselves. An effective learning environment will produce optimum learning outcomes so that in the end it will lead to the ability of students to apply knowledge to actual life experiences to solve problems.

The rapid development of Information Technology, there has been a shift in views about learning both in lecture halls and outside lecture halls. In the traditional view of the past (and still in the present), the learning process is seen as: (1) something difficult and heavy, (2) efforts to fill the shortage of students, (3) a process of transfer and receipt of information, (4) individual or solitary processes, (5) activities carried out by describing the lecture material to small and isolated units, (6) a linear process

In line with its development, there has been a change in views regarding learning, namely learning as: (1) natural processes, (2) social processes, (3) active and passive processes, (4) linear and or non-linear processes, (5) integrative ongoing processes and contextual, (6) activities based on the student's model of strengths, skills, interests, and curriculum, (7) activities that are assessed based on task fulfillment, results from acquisition, and solving real problems both individually and in groups. The role of the lecturer has changed from: (1) as a transmitter of knowledge, the main source of information, expert material, and the source of all answers, become facilitators of learning, coach, collaborator, navigator of knowledge and learning partner; (2) of controlling and directing all aspects of learning, become more provide more alternatives and responsibilities for every student in the process of Learning. Lecturers as: coaches (coaches), counselors, learning manager, participant, leaders, learners, and authors [13].

Meanwhile, the role of students in learning has undergone changes namely: (1) from passive recipients of information to active participants in the learning process, (2) from re-revealing knowledge to produce and various knowledge, (3) from learning as individual activities (solitary) become collaborative learning with other students.

The presence of the technology-based business incubator in the business environment is a synergy between the business practitioners with academics on the development of the strategic environment, especially the changing demands and behavior. The changes are grouped into: first, emerging markets. Second, the second curve of the life cycle. Third, the environmental sound business practices. Fourth, the quest for competitiveness. Fifth, quality trends. Sixth, the economic crisis turbulence. Seventh, electronic and virtual competition

Approach model adapted for the prototype of a technology-based business incubator model are an entrepreneurial education model that can produce educated entrepreneurs [14, 19], for more details can be seen in Figure 3.

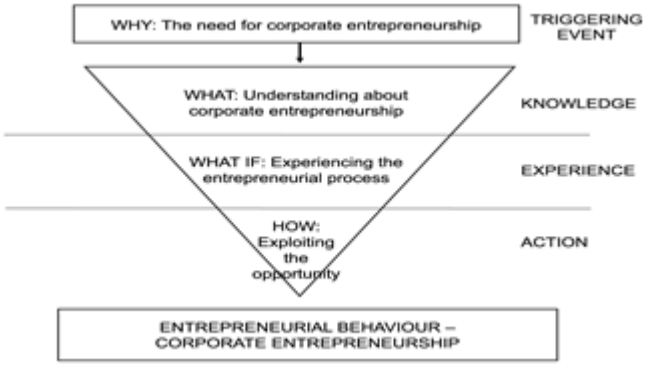

Fig. 3: Learning Approach to Entrepreneurship in Higher Education

Based on the specifications of the needs problem that has been made, the design of the learning source component for the development of entrepreneurial competencies that will be applied is the design of this entrepreneurial learning source taken from [15-16] can be seen in Figure 4.

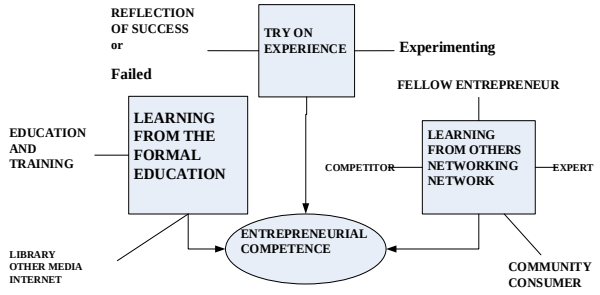

Fig. 4: Entrepreneurial learning resources

Prototype The model for developing technology-based business incubators is one of the models for developing entrepreneurship education learning in PT, not only producing entrepreneurs who are able to establish new businesses that are usually small business (new business startup) businesses. The learning model approach used is The Generic action approach which emphasizes the learning process through the activities carried out, this approach is somewhat different from the case that there was no previous solution to a problem and always questioned the assumption of each proposed alternative [17, 27]. In this learning model approach, students are given a highly contextual solution. Students not only discuss the practical implications of the solution but also the consequences that arise from the concepts and theories used, thus learning actions not only emphasize the experience gained while undergoing an activity but also have a strong knowledge base before carrying out these activities. Students are not only skilled at mastering concepts that will be used in solving problems but also enriching their insights. Students are trained to conceptualize their experiences (theorizing their experience) through the preparation of learning points obtained from each activity. Modeling Results of this technology-based business incubator produce the following objectives can be seen Table 1:

Table 1: Modeling Results of Technology Based Business Incubator Produce

Goals	Competencies	Indicators
To Know	Knowing and understanding the meaning of Entrepreneurship, Entrepreneurship. Entrepreneur and the key to success (success story) and entrepreneurial value	Being able to express themselves in verbal, written, mindset and attitude entrepreneurial
To Know	Increasing understanding of entrepreneurship through positive (positive image) and entrepreneurial values	Knowing the role of motivation and spirit of entrepreneurship
To Know	Understanding the Components of Entrepreneurship Education through creativity, innovation and risk taking analysis.	Knowing the role of creativity, innovation and risk taking in entrepreneurship
To Do	Understand the concepts of efficiency, economics and socio-culture in the context of entrepreneurship and entrepreneurial behavior	Understanding entrepreneurial behavior and basic communication
To Do	Understand the specific role of entrepreneurial skills (team work) and the knowledge needed for social or commercial activities.	Increased digital skills, basic economics and finance
To Do	Understanding the role of the organization, managing conflict and negotiation, the entrepreneurial way of life, ability to plan	Increased capacity planning and implementing
To be	Understand the techniques and strategies to realize ideas into action (business start-up)	The increasing number of business plans that are feasible and realized
To Be	Understand the techniques and strategies to realize ideas into action (business start-up)	Understand various aspects of business management and functions

After knowing the purpose of making the model, a basic model is developed to improve the quality of entrepreneurship learning through technology-based business incubators, which are described as Figure 5.

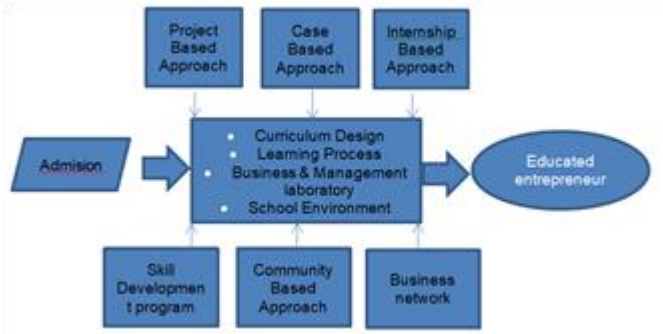

Fig. 5: Basic Model of Quality Improvement of Learning

The next process is to realize the basic model to the learning model through technology-based business incubators through stages of activities that train students who take entrepreneurship courses in order to produce "new" entrepreneurs who are able to identify opportunities, innovate (persistent) pursuit of goals, courage to see risk and deal with it through analysis. The implementation process of the activity is summarized in Table 2.

Table 2: Implementation of learning activities through Technology-based Business Incubators

	Session 1 2 3 4	5 6 7 8	9 10 11 12	13141516
Big map ping	Scanning , Identifying and analyzing Opportunity	Understanding About Entrepreneurship Experiencing the entrepreneurial processes	Accelerated integrated of entrepreneurship	Experiencing being entrepreneur
The me	Creativity Program	Foundation Program	Establishing Entrepreneurship program	Hatchery program
Participant	All student		Evaluate; selective student that have high entrepreneurial character and motivation	Establishing start up new venture
Objec-	Small business	Project Business	Comprehensive Business	

tive out-put	plan		Plan	
			Upgrading I Foundation business project	Upgrading II Foundation Business project

The learning pattern developed at this stage, when viewed from the learning needs of students, it seems that the whole learning activity is directed to the satisfaction of student learning, facilitating lecturers as implementing learning. Based on this reality, it appears that the learning model through technology-based business incubators not only maximizes the participation or involvement of students during learning, but has significantly improved lecturer performance in all aspects of ability and learning skills. In the context of this study, the use of modules, images, clippings and concept charts developed by the lecturer through technology throughout the learning process is very helpful for students in understanding the main concepts of the material, and the actual business issues or problems in their community. Through the activities of solving business problems directly in learning activities by using the generalization concepts that have been learned, it will eliminate students' negative attitudes towards learning done by lecturers [18]. Thus, the findings of this study seem to be quite effective in increasing the motivation and learning culture of students in the entrepreneurship subject as one of the subjects that have been considered to be unable to create educated entrepreneurs.

Through four stages (1) creativity program (2) foundation Program (3) establishing entrepreneurship program (4) hatchery program from 105 students participating through technology-based business incubators to achieve the Hatching Program for only 27 students or 25%, and as many as 78 students can reach entrepreneurship program or as much as 75%. This finding shows that the stages of becoming an entrepreneurial learning model can be realized through technology-based business incubators.

Based on the testing that has been carried out in this activity, it can be stated as follows:

a. Organizing the design activities of technology-based business incubator models in entrepreneurship courses, the stages of model development have been carried out starting from the need's analysis stage, then continued with the design of models implemented in the form of lecture prototypes through prototype technology-based business incubators designed and has fulfilled the use case in the learning system and other aspects.

1) Adapting teaching materials. Teaching materials are holistic in nature where knowledge, skills and values (values) are integrated with the needs in this information age. The curriculum is a competency-based curriculum
2) Make a variety of ways of teaching to achieve the basic competencies you want to achieve with the help of computers, the Internet
3) Conduct assessments using existing technologies (using computers, online assessment systems); and
4) Provide adequate learning materials such as books, computers, multimedia, studios, labs, etc. Learning material stored on a computer can be accessed easily by both lecturers and students

b. Based on point number 1 then each introduction of a particular technology utilization, there are four things that need to be prepared, namely.
c. This model allows the occurrence of individuation, acceleration, enrichment, expansion, effectiveness and productivity of learning which in turn will improve the quality of education as an infrastructure for developing human resources as a whole
d. Through this learning model, each student will be stimulated to learn to progress continuously in accordance with his potential and skills. Besides this, model requires creativity and self-reliance to enable it to develop all its potential.
e. Through this learning model, students will obtain various information related to the subjects developed, as well as in a broader and deeper scope so as to improve their insights. This is a stimulus that is conducive to the development of student independence, especially in terms of developing competence, creativity, self-control, consistency, and commitment both to themselves and to other parties.
f. The model makes it easy for teachers to provide lecture materials and assignments.

4. Conclusion

In this study, one proposed learning model through a technology-based business incubator has been implemented and evaluated. The evaluation results show that this model can improve understanding, experience, and motivation to become entrepreneurs through Entrepreneurship courses

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