

TEACHING APPROACHES AND METHODS FOR ENTREPRENEURSHIP EDUCATION AND TECHNOPRENEURSHIP HIGH SCHOOLS: A REVIEW

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ABSTRACT: Many claim that entrepreneurial skills are an important skill for every individual to survive in this challenging, competitive and limitless world. It has also stated that entrepreneurship skills are important skills to drive a country's economic growth. In connection with this, many countries, including Indonesia, have made entrepreneurship education a compulsory subject in their high school education. Aiming to develop students to become independent, responsible, creative, innovative and entrepreneurial individuals, many teaching approaches have been adopted. However, the effectiveness of this teaching approach is still questionable. As such, there is a need to investigate various approaches to propose new teaching approaches that are tailored to the needs of students in Indonesia. This study aims to review a variety of documented teaching methods in entrepreneurship education to identify their emphases, strengths, and weaknesses. For this purpose, 35 articles have been reviewed. It was found that the entrepreneurial teaching approach in high schools adopted five approaches and the scientific, technological, and community approach is found to be superior to the other four approaches as it is found to have the most cited approach and does not have any weaknesses in comparison to the others. Further, innovation is considered the least catered value in the approach.

Keywords: Entrepreneurship education, Teaching approach, Technopreneur, High school

INTRODUCTION

Entrepreneurial skills have been recognized as important skills for each individual to survive in this challenging, competitive, and unlimited world. Individuals with entrepreneurial skills can be independent in seeking their income in comparison to those without entrepreneurial skills. Every country has made the effort to equip its nation with entrepreneurial skills for the economic growth of a nation. Many have claimed that entrepreneurship skills are important skills to drive a country's economic growth. Recognizing the importance of the nation being equipped with entrepreneurial skills, all schools specifically high school education have made it compulsory for all students to enrol in entrepreneurial education.

Entrepreneurial education has long been implemented in high school. Various teaching and learning approaches have been adopted to ensure students undergoing entrepreneurship education achieve the knowledge and skills of entrepreneurship. Researchers have also investigated and experimented with various teaching approaches claiming the strengths and benefits of the proposed teaching approaches. Learning outcomes are considered significant in entrepreneurship education research (Rönkkö & Lepistö, 2015)[1]. Although many teaching and learning approaches have been implemented, the effectiveness of these approaches is still questionable. Many argue that the entrepreneurial skills gained by students who have undergone entrepreneurship education are still questionable. Specifically, they still have problems to become a successful entrepreneur.

The common emphasis to measure student's achievement of learning is evaluating students' learning outcome with respect to students' intellectual attitudes and skills. In this case, student's competency in entrepreneurship is measured based on the skills they demonstrate rather than the knowledge they gain. The knowledge or theoretical study that is excessive without being balanced with the application skills in life is a futile work (dos Santos & Ferreira, 2017)[2]. The teacher's

perspective and methods of working teachers in entrepreneurship education in secondary education will create a gap (Kirkley, 2017)[3]. In this regard, there have been conflicting views concerning the measurement of students' achievement in entrepreneurship education: skills, attitudes, or knowledge. Further, there is a need to identify the effective teaching method in entrepreneurship education.

The purpose of this paper is to present a review of literature relating to the teaching approaches of entrepreneurial education. In particular, the review of this paper is guided by the following research question: What are the approaches to teaching entrepreneurship education in high school?

RESEARCH METHODOLOGY

This review focuses on the presentation of the existing knowledge related to the various teaching approaches adopted in entrepreneurship education. Much of the documented teaching methods for entrepreneurship education can be identified based on the different emphases in the teaching and learning of entrepreneurship education. For this purpose, the review process involves two stages, namely: the first is the selection of data, the second is analysis and reporting.

The first phase of the review process focuses on the rules for selecting data. It started with identifying relevant studies using keywords such as; "Entrepreneurship education, an integrated approach, high school technopreneur", we explored and selected the paper from sources such as journals, online books, conferences, theses, and many others to identify the relevant literature. Initial searches for primary studies were examined using an online database, which is Google Scholar, Scopus, ScienceDirect, Springer, IEEEExplore, and ACM Digital. This article is also one of the alternatives for the primary study. The language in the reference search is limited to English and Indonesian only. All of the keywords were searched based on different combinations. As stated, the sophisticated search strings can be constructed using Boolean ANDs, NOT' s and ORs. We proceeded by scanning the abstract, introduction, and

conclusion of the papers. The focus of the screening was on the phrase "entrepreneurship education, an integrated approach and technopreneur".

Papers that are not relevant to our study were ignored. The scanning of the abstract and introduction resulted in the acceptance of 65 relevant papers. To ensure the similarity and quality of selected papers, the inclusion and exclusion criteria were adopted. The relevant papers were selected based on the criteria 54 papers were excluded, while only 35 papers were included in the analysis.

The selected papers are based on the two levels of selection described above. The analysis is based on research questions. In particular, this focuses on the approach to teaching entrepreneurship education.

RESULTS AND DISCUSSION

This paper investigates various approaches to teaching entrepreneurship education. For this purpose, 35 papers have been selected and analyzed based on the main features of teaching approaches and their strengths and weaknesses. Table 1 shows a summary of teaching approaches analyzed based on the selected 35 papers. As shown in Table 1, there are five teaching approaches, which are contextual, constructive, deductive-inductive, concept process, and science, technology, and societal teaching approaches. Among these approaches, the most frequently cited approach is the science, technology, and society (17 papers), followed by constructive (7 papers) and contextual (5 papers). Finally, deductive-inductive and concept and process approaches were documented in 3 papers respectively. This result indicates the most commonly adopted teaching methods are science, technology, and society.

Table 1: Teaching approaches in entrepreneurship education and technopreneurs

TEACHING APPROACH	TOTAL	SOURCES
Approaches to Science, Technology, and Society	17	(Kirkley, 2017)[3], (Peltonen, 2015)[4], (Rae, 2004)[33], (Rönkkö & Lepistö, 2015)[1], (Secundo et al., 2017)[5], (Zheng, 2017)[6], (Muhammad et al., 2017)[7], (Dessyana & Dwi Riyanti, 2017)[8], (Chapman & Skinner, 2006)[9], (Vinten & Alcock, 2004)[10], (Hendrawan & Samira, 2017)[11], (Abdullah et al., 2013)[12], (Pei-Lee & Chen-Chen, 2008)[13], (Dessyana & Dwi Riyanti, 2017)[8], (Gomez, 2017)[14], (Okorie et al., 2014)[15], (Mohd. Yunos, 2002)[16]
Contextual Approach	5	(Abaho, Olomi, & Urasa, 2015)[17], (Ruskovaara & Pihkala, 2013)[18], (Kerr et al., 2017)[19], (Jusoh & Hazianti, 2006)[20], (Lalkaka, 2002)[21]
Constructivism Approach	7	(Barba-Sánchez & Atienza-Sahuquillo, 2016)[22], (Sullivan, 2000)[23], (dos Santos & Ferreira, 2017)[2], (McLarty, 2006)[24], (Othman et al., 2012)[25], (Thompson, 1999), [26]
Concept and Process Approaches	3	(Altinay & Wang, 2011)[27], (Orraca et al., 2017)[28], (Sambel, 2017).[29]
Deductive Approach - Inductive	3	(Seikkula-Leino et al., 2015)[30], (Taatila, 2010)[31], (Ackah et al., 2017)[32]
Total	35	

Additionally, the five teaching approaches were also analyzed according to their strengths and weaknesses. The strengths are presented based on students' improvement in learning such as their self-improvement, responsibility, creativity, and innovation. On the other hand, the weaknesses are identified as the time and money (fees) spent. The results of the teaching approaches about their strengths and weaknesses are presented in Table 2. As shown in Table 2, the contextual approach and the science, technology, and society approach, both have the highest strengths as it has all the four aspects identified. This is followed by constructivism, which addresses self, responsibility, and creativity, while the inductive-deductive approach and the concepts and processes

approach have relatively the least strength as they only address self and responsibility. It can also be concluded that the aspect of innovation is the least catered by the teaching approach. On the other hand, the contextual approach has time and fee weaknesses, while constructivism and concepts and processes have a weakness in time only.

The results from Table 1 and Table 2 indicate that the science, technology, and society approach is considered superior in comparison to the others. This is because it is relatively more popular based

on the highest number of papers cited and it does not have any weaknesses in comparison to the other four approaches.

Table 2: The Various Teaching Approaches and their strengths and weaknesses

TEACHING APPROACH	STRENGTHS					WEAKNESS	
	Self	Responsibility	Creative	Innovative	Integrative	Time	Fees
Approaches to Science, Technology, and Society	I	I	I	I	I		
Contextual approach	I	I	I	I		I	I
Constructivism	I	I	I			I	
Concepts and processes	I	I				I	
Deductive - Inductive	I	I					

An analysis of the various teaching methods in entrepreneurship education was also conducted. Table 3 shows there are seven different types of teaching methods used to teach entrepreneurship. As shown in Table 3, changing mindset has the highest number of papers cited (6), followed by skills (5). Four teaching methods have a similar number of papers (3) and they are training, holistic and psychological, social network, and guidance. On the other

hand, student participant receives the lowest number, that is two papers only. Based on these statistics, we can infer that changing mindset is essential to entrepreneurship education as being competent in entrepreneurship requires people to have a different mindset. It is also important to mention that only 29 out of 35 papers mention the teaching method.

Table 3: The teaching method

TEACHING METHOD	TOTAL	SOURCES
Guidance	3	(Orraca et al., 2017)[27], (McLarty, 2006)[[22], (Ogorelc, 1999)[28]
Holistic and psychological	3	(Rönkkö & Lepistö, 2015)[1], (Zheng, 2017)[6], (Dessyana & Dwi Riyanti, 2017)[[8].
Mind set	7	(Altinay & Wang, 2011)[27], (Secundo et al., 2017)[5], (Zheng, 2017)[6], (Seikkula-Leino et al., 2015)[[30], (Ackah et al., 2017)[[32], (Thompson, 1999)[26], (Mohd Yunus, 20002)[16], (Lalkaka, 2002)[21]
Skills	5	(Abaho et al., 2015)[[17], (Barba-Sánchez & Atienza-Sahuquillo, 2016)[22], (Rae, 2004)[[33], (Momenia et at., 2012)[34], (Muhammad et al., 2017)[7]
Student participation	4	(Kirkley, 2017)[3], (Taatila, 2010)[[31], (Gomez, 2017)[14], (Okorie et al., 2014)[15].
Social networks	3	(dos Santos & Ferreira, 2017)[2], (Kerr et al., 2017)[19], (Chapman & Skinner, 2006)[9]
Training	3	(Ruskovaara & Pihkala, 2013)[18], (Sullivan, 2000)[21], (Thompson, 1999)[23]
Total	29	

CONCLUSION

This is a review paper that investigates the teaching approach to entrepreneurial education. Based on an analysis of 35 papers, it was found that 17 papers used the scientific, technological, and community approaches and had the power of independence, responsibility, creativity, and innovation. Therefore, it can be concluded that the entrepreneurial

teaching approach in high schools uses scientific, technological, and community approaches. For future work, this proposed model will be tested for high school teachers in Indonesia.

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