



Mapping Entrepreneurship Education Programmes: A Case Study of Higher Education Institutions in Bandung, Indonesia

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ABSTRACT

This study fills the gap in the literature on entrepreneurship education by examining the portrayal of entrepreneurship education programs (EEPs) in higher education. Therefore, it aims to analyse the implementation of entrepreneurship education at three universities in Bandung, Indonesia. The research method employed is qualitative approach by conducting in-depth interviews with several key informants in this field. The results indicate that the characteristics of entrepreneurship education are based on the input, process, and output. The input here relates to the institutional setting, audience, type of EEP, and objectives. The process includes the content, teaching and training method. Meanwhile, the output encompasses the success indicators, drawbacks and advantages as an effort to leads students in the venture creation process. This study also addresses the current issue of entrepreneurship education and recommends improvement strategies, the implications of which are that policymakers should create regulations that encourage students to become entrepreneurs.

Keywords: Entrepreneurship education programme, high education, innovation, venture creation

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INTRODUCTION

There has been an increasing interest in entrepreneurship education and training (Jones & Matlay, 2011; Solomon, 2007). This development has occurred due to a belief in the potential for entrepreneurship education to produce more entrepreneurs thereby, over time, promoting economic growth. A considerable number of studies has looked at this important topic (Ligthelm, 2007; Mojica, Gebremedhin, & Schaeffer,

2010; Ruswanti, 2016).

In Indonesia, research related to entrepreneur education remains relatively scarce. Hadi, Wekke and Cahaya (2015) conducted a study to enhance entrepreneurship education in East Java through the Potency and Entrepreneurship Program for senior high school students. According to Hadi et al. (2015), the solution to the shortage of entrepreneurs consisted of nurturing students as early as possible to realise their potential and, importantly, to introduce and instil a spirit of entrepreneurship. Research in this area has been conducted through entrepreneurship policy mapping (Mirzanti, Simatupang, & Larso, 2015). Goldstein, Ick, Ratang, Hutajulu and Blesia (2016) employed an action research approach to analysing the process of entrepreneurship education at Cenderawasih University. The results indicated that differences in gender, culture, and socio-economic conditions affected the entrepreneurial mindset which would also eventually influence their entrepreneurial spirit and business performance. Additionally, Christina, Purwoko and Kusumowidagdo (2015) attempted to assess the effectiveness of entrepreneur education at Ciputra University.

At the time of writing, limited research exists on entrepreneurship education at tertiary level institutions. Therefore, this study seeks to examine the implementation of entrepreneurship education within higher institutions in Indonesia. It addresses why entrepreneurship education is relatively scarce (Fayolle & Gailly, 2008; Solomon,

2007).

The current study is an attempt to map the characteristics of entrepreneurship education based on input, process, and outcome. It review literature on entrepreneurship education and recommends a more adaptable structural entrepreneurship education as a means of promoting entrepreneurship.

LITERATURE REVIEW

There is a lot of interest in entrepreneurship education, especially in higher education institutions in Indonesia. Education in this specific discipline has been promoted by the Indonesian Ministry of Higher Education since 1997 through an entrepreneurship development programme within universities offering various activities, including; entrepreneurship lectures in an effort to introduce entrepreneurship as a means to develop entrepreneurship spirit on the part of students. Entrepreneurship lectures are delivered to provide entrepreneurial knowledge, share entrepreneurial experience and encourage the growth of entrepreneurial motivation as an initial activity of prospective entrepreneurial students (Directorate General of Higher Education, 2010b). Entrepreneurial Apprenticeship is a student activity providing an opportunity to gain real work experience within small and medium enterprises which is expected to develop an entrepreneurial spirit. Practical entrepreneurial work is an activity that includes the necessary skills to apply science and technology, entrepreneurial managerial practices and the marketing and adoption of technological innovation

(Research and Development Agency, 2010). The New Entrepreneur Incubator, offers an integrated package to college alumni interested in becoming entrepreneurs at an affordable cost over a fixed period of time (2-3 years). It includes: 1) office facilities or production rooms that can be shared; 2) access and networking opportunities with technology and business support services, technology and information resources, raw material resources, and finance; 3) consulting services covering aspects of technology, management, and marketing; 4) establishment of a network of entrepreneurs, and 5) development of research products to be commercially produced (Directorate General of Higher Education, 2010a).

There are two policies relating to the implementation of entrepreneurship education programmes in Indonesia: 1) entrepreneurship as a subject at both secondary and tertiary education levels and 2) entrepreneurship as a skill assessed against a competence standard (Ministry of National Education, 2010). Higher education institution curricula are invariably required to follow developments in science and technology and work need trends. It should combine explicit knowledge in one area with explicit knowledge in others; in other words, it entails the process of translating concepts into knowledge. The 2010 findings of a Research and Development Agency indicated that a curriculum creative-oriented and entrepreneurial spirit need to be nurtured within the education sector.

Since 2009, the Indonesian Ministry of Higher Education has introduced a

programme that fosters creativity among students via research, community service, technology application, scientific articles, and students' own ideas to enable them to be creative in various fields, including entrepreneurship. The programme is based on the fact that college graduates' competence in a particular scientific field no longer guarantees them entry into an increasingly competitive employment market. Rather, graduates require the ability to analyse, synthesise, take advantage of opportunities, demonstrate the necessary courage to take calculated risks, as well as entrepreneurial competence.

In response to the importance of entrepreneurship education, higher education institutions across the world have formulated entrepreneurship education programmes and provided students with entrepreneurship courses. In Indonesia, the entrepreneurship education concept has been adopted and integrated into engineering and science courses. It is inevitable that when implementing entrepreneurship education, one should define the outcomes expected and strategy to achieve the goals. In this study, the framework created by Fayolle et al. (2006) was adopted. Figure 1 shows the components of assessment model of entrepreneurship education. This study adapts the work of Fayolle et al. (2006) as a conceptual framework since it is considered suitable. Therefore, this research analyses implementation of entrepreneurship education in higher education institutes. Additionally, it maps the entrepreneurship programme using the same framework.

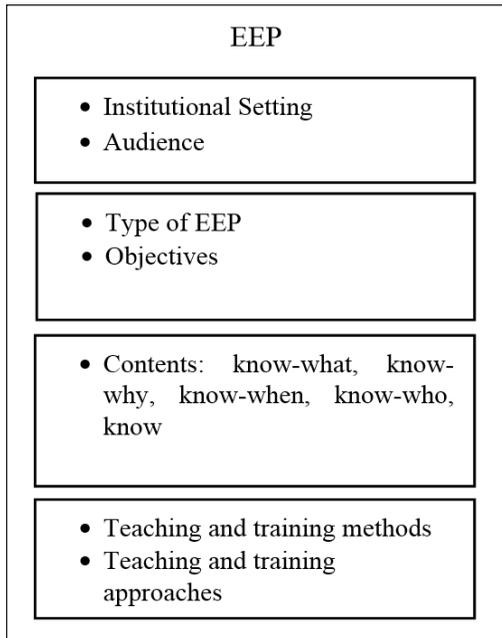


Figure 1. Framework of entrepreneurship education programme by Fayolle, Gailly and Lassas-Clerc (2006)

MATERIALS AND METHODS

This paper incorporates a case study due to the nature of the research questions. According to Yin (2009), case studies were appropriate when researchers asked the question of “how?” or “why?” when the investigator had little or no control of the condition. This study covered multiple cases and interviewed seven respondents who taught entrepreneurship education in three tertiary level institutions in Bandung.

This study focused on higher education institutions in Bandung because the city received the “Natamukti Nindya” award for the best development of small and medium enterprises (SMEs) in Indonesia as assessed by the Indonesian Council for Small Business (ICSB) and the Ministry of Cooperatives and SMEs (Pikiran Rakyat,

2016). This means that the environment in Bandung is very supportive of the establishment of new businesses. These three universities established entrepreneurship majors and courses more than 10 years ago and considered providing entrepreneurship learning as part of the university’s goal to encourage creation of more Indonesian entrepreneurs. In addition, these three institutions are included among the universities in Indonesia offering the highest quality entrepreneurship and management degree courses. It is assumed that by interviewing lecturers directly involved in entrepreneurship education, developing a deep understanding would be possible as they have first-hand knowledge and information on this.

Informants were asked on the institutional setting, type, and purpose, process and success indicators of entrepreneurship education. Table 1 shows the profile of informants participating in this study. The identities of sample members are deliberately withheld to protect the college’s reputation. The initials HEI represent an abbreviation for the higher education institution, while the code letters are the initials of a particular participating division or faculty.

The collected data was processed by means of an iterative process in a search for meaning and patterns between categories. In order to produce robust findings, the authors decided to undertake qualitative coding. Following the data collection process, the interpreting and thematic coding of the data were completed.

Table 1
Profile of respondents

Case Study	Description	Sample Details
HEI-1, F1	HEI-1 is one of the technology-based public universities in Bandung. This institution consists of 12 faculties. It has the best-known engineering programme in Indonesia. This F1 is the business and management faculty in HEI-1. This faculty offers entrepreneurship study as a major in the hope that in the long term, entrepreneurial spirit can be developed within each faculty leading to commercialising of every innovative product which addresses a societal problem. Furthermore, this public institution is the only one offering an entrepreneurship major in Indonesia.	38-year-old male Educational Background: Doctoral Degree Position: Director of the Bachelor Programme in Entrepreneurship Programme at the School and Business Management Expertise: Entrepreneurship, Technology Commercialisation
HEI-1, F2	F2 is one of the faculties focused on pharmacy. It has been delivering entrepreneurship courses for more than ten years with its knowledge and alignment with institutional goals at that time rendering it an entrepreneurial university. Moreover, the faculty develops products such as drugs, food, and drinks. This faculty offers several entrepreneurship courses, including: bachelor's degrees and master's degrees in the pharmaceutical industry.	60-year-old male. Educational Background: Doctoral Degree (Professor) Position: Entrepreneurship lecturer on both bachelor degree courses and in the professional school of pharmacy Expertise: Hospitality Management
HEI-1, BI-1	BI-1 is a business incubator whose function is to support the innovative commercialization of R&D results in HEI-1. This incubator offers various programs in the selection process, coaching, training, creating awareness of intellectual property, and forming of an innovative ecosystem and cooperation with industry.	39-year-old female. Educational Background: Doctoral Degree Position: Tenant Coordinator specialized in Entrepreneurship Expertise: Corporate Social Responsibility, Small Business Development
HEI-2	HEI-2 is one of the private higher education institutions in Bandung and consists of five faculties. This institution consistently strives to produce professional graduates who demonstrate competence and competitiveness in the field of Business and Commerce. In addition, this institution offers entrepreneurship education as a compulsory subject. The institution is included in the 37 private higher education institutions delivering the best management major courses in Indonesia.	36-year-old male. Educational Background: Master's Degree Position: Lecturer Expertise: Entrepreneurship and Small Business Management
HEI-3	HEI-3 is a private higher education institution in Bandung consisting of seven faculties. The institute has specialized study programs in information technology and communication, management and the creative industries and promotes entrepreneurship as one of the values. Moreover, this institution offers entrepreneurship education as a compulsory subject. The institution is also included in the 37 private higher education institutions offering the best management majors in Indonesia.	36-year-old, Female Educational Background: Master's Degree Position: Lecturer Expertise: Entrepreneurship and Small Business Management

Table 1 (continue)

Case Study	Description	Sample Details
HEI-3, BI-2	BI-2 is a business incubator established through cooperation between higher education institutions and the Ministry of Industry of the Republic of Indonesia. This institution synergizes the role of the Quadruple Helix (academy, business, government, and communities) as an innovation forum where lecturers, students, and the general public can learn to do business. The institute aims to produce innovative products, start-up creation, and the commercialization of research results.	30-year-old male Educational Background: Master's Degree Position: Incubator Coordinator Expertise: Information Technology
HEI-3, DSA	DSA is a unit of the higher education institution focusing on student problems. One student affairs division is that of student entrepreneurship which facilitates student entrepreneurship through gaining access to the network and meeting entrepreneurial experts.	50-year-old female. Educational Background: Master's Degree Position: Student Affairs, Head of Entrepreneurship Student Division Expertise: Management

RESULTS AND DISCUSSION

Entrepreneurship education possesses various characteristics because it has a range of learning objectives. As shown in the table above, there are three types of entrepreneurship education programmes, namely courses, training and undergraduate degree programmes. This study found these characteristics to be heavily influenced by curricula which detail the learning objectives that were managed by higher education institutions.

Based on the findings from in-depth interviews and their observations, there are several characteristics of the implementation of entrepreneurship education shown in the framework adapted from Fayolle et al. (2006). In this study, variables such as instructors, the success indicator, and the advantages and drawbacks of the programme are also considered. Table 2 shows the results of data analysis.

Based on the contents of the table, it can be concluded that a higher education institution has distinct goals for its entrepreneurship programme which consequently shape the design of content, teaching and training methods, and the delivery mode. Additionally, it can also be seen that there are several unique characteristics of entrepreneurship education programme in three higher education institutions in question. The first is related to the input of entrepreneurial education programme which consists of instructors, audience, and institutional setting. The following excerpt from an interview provides insight into issues connected with the implementation of the entrepreneurship education programme.

As Figure 2 shows, the institutional setting is where the development of the course and the nature of entrepreneurship content will be conveyed. Both instructors

Table 2
Results tabulation

	HEI-1	HEI-2	HEI-3
Institutional setting	<ul style="list-style-type: none"> • Entrepreneurship Education Major, • University-based incubator, • Entrepreneurship education as a mandatory course 	<ul style="list-style-type: none"> • University-based incubator, • Entrepreneurship education as a mandatory course 	<ul style="list-style-type: none"> • University-based incubator, • Entrepreneurship education as a mandatory course • Incubator business • Student entrepreneurship division
Audience	<ul style="list-style-type: none"> • Students selected based on their business proposal • Engineering students with business ideas • Science students 	<ul style="list-style-type: none"> • Students selected on the basis on their business proposal • Students who have business ideas 	<ul style="list-style-type: none"> • Students selected on the basis of their business proposal • Students who have business ideas
Type of EEP	<ul style="list-style-type: none"> • Course, • Training and Seminar, • Major 	<ul style="list-style-type: none"> • Course, • Training and Seminar 	<ul style="list-style-type: none"> • Course, • Training and seminars • Entrepreneurship-focused meetings • Entrepreneurship competitions
Objectives	<ul style="list-style-type: none"> • Promotion of entrepreneurship as an academic discipline • Increase in the number of entrepreneurs and start-ups • Provide basic knowledge of what entrepreneurship is and how it works 	<ul style="list-style-type: none"> • Promotion of entrepreneurship as an academic discipline • Increasing of entrepreneurs and start-ups • Provide basic knowledge of what entrepreneurship is and how it works 	<ul style="list-style-type: none"> • Promotion of entrepreneurship as an academic discipline • Increase in the number of entrepreneurs and start-ups • Provide basic knowledge of what entrepreneurship is and how it works • Facilitate student access to a wider network and the legality of their business through recommendation to the student entrepreneurship division
Contents	<ul style="list-style-type: none"> • General management • Entrepreneurship • Practical aspect of managing new or small businesses • Theoretical dimension • Professional dimension • Spiritual dimension • Occasional lack of consensus on content (based on students' needs) • Extensive alignment of the main educational content, such as pharmaceutical management 	<ul style="list-style-type: none"> • General management • Entrepreneurship • Theoretical and professional dimensions • Practical aspect of managing new or small businesses • Occasional lack of consensus on content (based on students' needs) 	<ul style="list-style-type: none"> • General management • Entrepreneurship • Theoretical and professional dimensions • Practical aspect of managing new or small businesses • Occasional lack of consensus on content (based on students' needs)

Table 2 (continue)

	HEI-1	HEI-2	HEI-3
Teaching and training methods	<ul style="list-style-type: none"> • Experiential learning (action and reflection) • Didactic teaching methods • Constructivist teaching methods • Guest lecturers, practitioners • Case studies • Business plan, lean start-ups and business model canvas, simulation 	<ul style="list-style-type: none"> • Experiential learning (action and reflection) • Constructivist teaching methods • Guest lecturers, practitioners • business plan, lean start-ups and business model canvas, simulation 	<ul style="list-style-type: none"> • Experiential learning (action and reflection) • Constructivist teaching methods • Guest lecturers, practitioners • Case studies • Business plan, lean start-ups and business model canvas, simulation
Teaching and training approaches	<ul style="list-style-type: none"> • Focus on venture creation • Nurturing entrepreneurial spirit • Broadening entrepreneurial awareness • Emphasis on combining the R&D and commercialisation 	<ul style="list-style-type: none"> • Focus on entrepreneurial characteristics education • Nurturing entrepreneurial spirit • Broadening entrepreneurial awareness 	<ul style="list-style-type: none"> • Focus on entrepreneurial characteristics education • Nurturing entrepreneurial spirit • Broadening entrepreneurial awareness • Emphasis on combining the R&D and the commercialisation
Instructors	<ul style="list-style-type: none"> • PhD in entrepreneurship • Specialised in entrepreneurship, most having general business school background • Engineer or science PhD who have field experience as managers or previously owned a business • Have training and coaching experience in entrepreneurship 	<ul style="list-style-type: none"> • Specialised in entrepreneurship, most having general business school background • Lecturer who have field experience as managers or previously owned a business • Have training and coaching experience in entrepreneurship 	<ul style="list-style-type: none"> • Specialised in entrepreneurship, most having general business school background • Lecturers who have field experience as managers or previously owned a business • Have training and coaching experience in entrepreneurship
Success indicator	<ul style="list-style-type: none"> • Venture creation • Change in behavioural mindset to have greater entrepreneurial spirit • Awareness of the importance of entrepreneurship 	<ul style="list-style-type: none"> • Venture creation • Change in behavioural mindset and to have greater entrepreneurial spirit • Awareness of the importance of entrepreneurship 	<ul style="list-style-type: none"> • Venture creation • Change in behavioural mindset to have greater entrepreneurial spirit • Awareness of the importance of entrepreneurship
Drawback	<ul style="list-style-type: none"> • Little integration between teaching and research • Sole focus on students who may become entrepreneurs • Have no trace study to measure the effectiveness of the programme 	<ul style="list-style-type: none"> • Little integration between teaching and research • Have no trace study to measure the effectiveness of the programme 	<ul style="list-style-type: none"> • Little integration between teaching and research • Sole focus on students who may become entrepreneurs • Have no trace study to measure the effectiveness of the programme

Table 2 (continue)

	HEI-1	HEI-2	HEI-3
Drawback	<ul style="list-style-type: none"> • Have little outreach on prospective business funding • No active collaboration between each major in the university 	<ul style="list-style-type: none"> • Have little outreach on prospective business funding • No active collaboration between each major in the university 	<ul style="list-style-type: none"> • Have little outreach on prospective business funding • No active collaboration between each major in the university
Advantages	<ul style="list-style-type: none"> • High visibility of new entrepreneurs • Increasing the use of real-life ventures as vehicles for learning • In the long term, the university strives to address the mechanism for creating entrepreneurs through collaboration with each stakeholder such as faculties and majors 	<ul style="list-style-type: none"> • High visibility of new entrepreneurs • Increasing the use of real-life ventures as vehicles for learning 	<ul style="list-style-type: none"> • High visibility of new entrepreneurs • Increasing the use of real-life ventures as vehicles for learning • The university seeks to collaborate with stakeholders, such as the banking industry to establish business incubators (funding access)
Obstacle	<ul style="list-style-type: none"> • Bureaucratic barriers and regulations that still do not stimulate and support new small business • Students abandoning their business due to the demands of daily life and their main responsibility of finishing other courses to graduate • The synergy between university, faculty and major. • Robust curricula and learning methods of the entrepreneurship course appear obsolete 	<ul style="list-style-type: none"> • Bureaucratic barriers and regulations that still do not stimulate and support new small business • The synergy between university, faculty and major. • Robust curricula and learning methods of the entrepreneurship course appear obsolete 	<ul style="list-style-type: none"> • Bureaucratic barriers and regulations that still do not stimulate and support new small business • Students abandoning their business due to the demands of daily life and their main responsibility is to their courses before graduating • Robust curricula and learning methods of the entrepreneurship course appear obsolete
Margin for improvement	<ul style="list-style-type: none"> • Creating business ecosystem and a scheme to stimulate emergent entrepreneurs • Product portfolio • Window displayed prototype of R&D product 	<ul style="list-style-type: none"> • Creating business ecosystem • Product portfolio • Business incubator 	<ul style="list-style-type: none"> • Creating business ecosystem • Product portfolio • Window displayed prototype of R&D product • Mentorship

- *The entrepreneurship course has become mandatory since the rector requires that this university should be an entrepreneurial institution.*
- *The requirements for acceptance onto the entrepreneurship major course include a business executive summary and permission from the student candidate.*
- *In the incubator, the tenant must form part of two teams, one as the leader, and the other as the motor.*
- *The lecturer must be equipped with entrepreneurship knowledge, or at least have experience of both corporate sector work and self-employment.*
- *The lecturer has play the role not only of provocateur, promoting an entrepreneurial mindset, also of supporter.*

Figure 2. Input of EEP

and students are considered to be assets of the programme. Their quality and self-development are what is required to maintain the excellence of the outcomes. Moreover, the process includes content, methods and type of EEP.

Figure 3 shows that even lecturers recognise the need to introduce technology-based learning or e-learning or blended learning within entrepreneurship education. Unfortunately, the method used in the classroom remains conventional in nature, namely instructors relying heavily on theories. This finding is in line with that of

Solomon (2007) who argued that traditional teaching methods are still prevalent within entrepreneurship education. In contrast with the aforementioned characteristics, entrepreneurship as a major is based on an experiential and constructivist perspective of learning. A previous study by Higgins & Elliott (2011) also posited that entrepreneurship education should be more action-oriented in character. Meanwhile, the output of entrepreneurship education is represented by its objectives, success indicator, advantages and drawbacks.

- *We provide training in business cycles, design thinking, business launches, managing start-ups, business development, business sustainability and business exits. In addition to formulated courses, each week the students receive training and coaching from practitioners and/or professionals.*
- *Over several semesters, entrepreneurship students will be directly involved in business set-up. They must gain experience managing their own enterprises.*
- *Sometimes, lecturers are aware of their limited competence in the area of advanced technology that is supposed to stimulate students to learn. At times, we still teach in a conventional manner. Occasionally, we provide business cases while, at other times, students who are already running their own businesses raise context-specific problems.*

Figure 3. Process of EEP

- *My hope is that students taking this course have changed in regard to their orientation, not merely being satisfied with becoming a marketer, but also becoming an entrepreneur and finding solutions to social problems.*
- *The greater my involvement in entrepreneurial studies, the deeper my understanding that, even in so-called entrepreneurial universities, weaknesses persist. We do not have collaborative mechanisms to support and enhance business creation.*
- *The goal itself is too wide-ranging. No wonder it will require considerable time to accomplish. We cannot see it yet. However, even the smallest achievement of this generation represents improvement and things will continue to improve further in the long run.*

Figure 4. Output of EEP

The recommendation with regard to the obstacles hindering entrepreneurial activities in higher education institutions mostly relate to the lack of regulatory support. This may stem from internal regulation such as that exercised by the rector and the consolidation between faculty members, or from external strictures, for example, the government encouraging an expansion in the number of entrepreneurs still active in higher education institutes. As mentioned by one respondent, portfolios represent one possible solution. Sandhu and McQuarrie (2016) emphasise that the portfolio for learning programme constitute a significant resource for developing networks with external stakeholders and securing access to them. According to Jensen (2014), in order to develop a dynamic and systematic understanding of entrepreneurship education initiatives, one should focus on outcomes, especially on the competence and experience that the programme seeks to transfer and the lessons learnt by students since these relate closely with their intention to become entrepreneurs. From the findings based on interviews with respondents (see

selected excerpts in Figures 1 to 4), this study formulated the conceptual model of entrepreneurship education programme in higher education institutions. Figure 5 below describes the conceptual model.

The conceptual model to examine the entrepreneurial education programmes is modified from the themes which recognise the use of modified discourse analysis based on Fayolle's work (2006). This comprises three principal themes: inputs, (institutional setting and audience that leads to the differentiation of EEP type and objectives), process, (contents, teaching methods and approaches), and output, (entrepreneurial knowledge, spirit and behaviour) of the entrepreneurship education programme. The three main themes that constitute the entrepreneurial education programme is presented diagrammatically (Figure 5). The existence of entrepreneurial education programmes in Indonesia can be determined through them. Three types of EEP are identified, each possessing its own characteristics, namely entrepreneurship as courses, entrepreneurship as a major degree subject, and entrepreneurship as training.

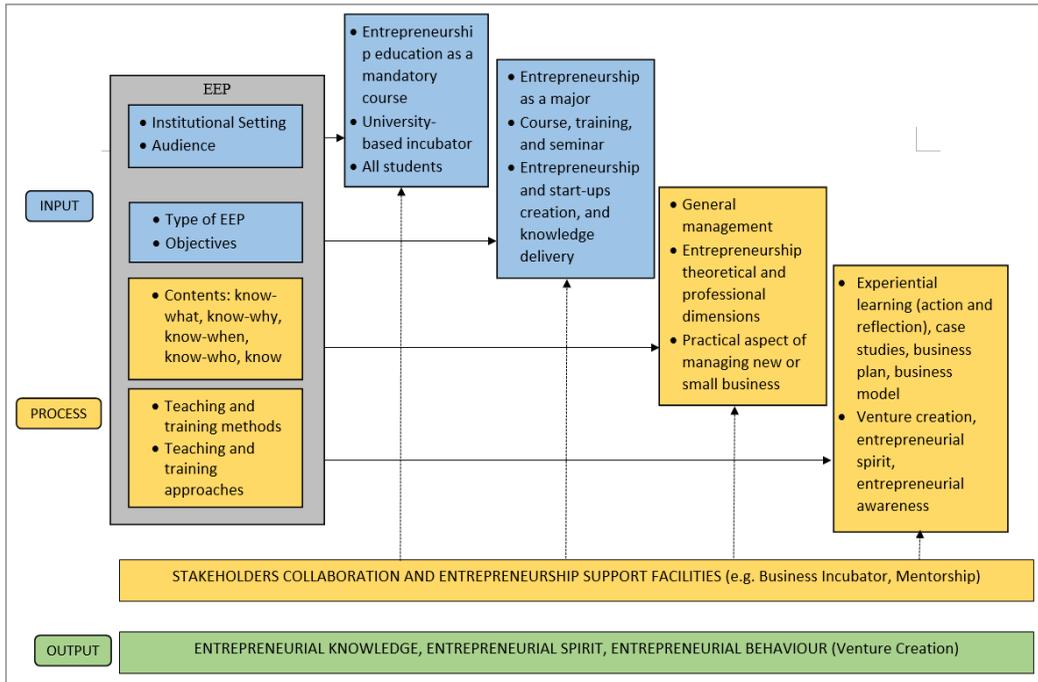


Figure 5. Conceptual model

CONCLUSION

The study aimed to examine the delivery of entrepreneurship courses in higher education institutions in Bandung. The results showed that the characteristics comprised input, process, and output. The inputs are related to the institutional setting, audience, type of EEP, and objectives. Meanwhile, the processes include the content, teaching and training method. The outputs is represented the success indicators, drawbacks and advantages as an effort to leads students in the venture creation process. In addition, this study addressed the current issue of entrepreneurship education and recommended improvement strategies.

This research contributes to the existing body of knowledge about entrepreneurship

education by mapping such existing education in Indonesia. The limitations on the study arise from the fact that it was only conducted in a single time frame and focused solely on undergraduate entrepreneurship education. For that reason, further research should be conducted into entrepreneurship education programmes at Master's and Doctoral degree level in order to provide a comprehensive analysis of these programmes' distinguishing features and involve other stakeholders, such as the government. Subsequent research could also adopt a quantitative approach to determine the presence of these characteristics and the framework feature in each entrepreneurship education programme.

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