



# Entrepreneurship education in Indonesian higher education: mapping literature from the Country's perspective

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## Abstract

Entrepreneurship education has become an important and fast-growing research area contributing to understanding and acknowledging global and national trends and developing future educational policies and actions. From the country's perspective, the development of entrepreneurship education in Indonesia is relatively recent. This circumstance is reflected by the minimal amount of research in English language articles published in prominent journals, the uneven provision programs, and the lack of modern practices in teaching and learning entrepreneurship in higher education across the country. Due to those rationales, this study aims to serve as an *initial proposition* by mapping some current states concerning Indonesian entrepreneurship education programs' provision, its common learning practices within the higher education context, and its relation to students' entrepreneurial competencies, characteristics, and Indonesian entrepreneurs' issues on entrepreneurship education. By using mapping literature methodology, this study has identified and analyzed 31 articles concerning Indonesian entrepreneurship in higher education, searched through electronic database and international and national universities publications for the last ten-year period (2010–2019). The results showed that major entrepreneurship education program provisions and implementation of contemporary entrepreneurship course contents and teaching methods in Indonesia are centralized in Java Island—Indonesia. Another notable finding is *mentoring*, the most recent and emerging entrepreneurial type in Indonesia to support more students' learning engagement and independence, or education *through* entrepreneurship. The study's findings could inform the Indonesian government, educators, researchers, and educational policymakers concerning the current circumstances of Indonesian entrepreneurship education and how to improve them in the future.

**Keywords** Entrepreneurship education · Higher education · Indonesia · Program provision · Common practice · Entrepreneurial learning

## Introduction

Entrepreneurship education has experienced phenomenal growth globally over the last half-century. The field's earliest roots are from Japan in 1938 when Professor Emeritus Shigeru Fujii at Kobe University initiated the first entrepreneurial education in higher education (McMullan & Long, 1987). Modules in small business and entrepreneurial management then became known in the American universities in the 1940s (George Washington University, 2014). Previous data collected from the National Survey of Entrepreneurship Education in the USA (Solomon, 2007) represent that entrepreneurship and business management courses have grown in acceptance at an accelerated pace from 93 universities and higher education institutions in 1979 to over 1,600 in 2004. These include various teaching contents ranging from traditional courses (i.e., marketing and finance) to unconventional ones (i.e., new product development and technology) (Charney and Libecap, 2011). The number had increased significantly, and entrepreneurship courses are now available in more than 2000 American universities a decade later (Albornoz & Rocco, 2009). Besides, numerous PhD programs conferring degrees in entrepreneurship, and entrepreneurship is a central aspect (Baum et al., 2007).

The case is, however, different for Indonesia. It is the fourth most populated country globally, with many young people making up its demographics. According to Statistic Indonesia (2015), the total school-age population was over 109 million people, or approximately 42 percent of the total 255.5 million people. With this situation and underpinned by its growing middle-class consumers, the demand for quality higher education will continue to grow. Today, there are more than 4,500 active higher education institutions (HEIs) in Indonesia, including universities and polytechnics, where millions of people graduate each year (Ministry Education Indonesia, 2016). Nevertheless, Indonesia has the third-highest unemployment rate (6.2%), after the Philippines (6.5%) and Brunei (6.9%), among the ten countries in Southeast Asia (International Labor Organization, 2015). With the considerably high number of unemployed higher education graduates, e.g., 819,714 in 2015 (Statistic Indonesia, 2015), one possible way could be supporting entrepreneurship in higher education (Ardianti, 2009).

Furthermore, after the 1997–98 financial crisis, the number of Indonesian small-medium enterprises (SMEs) steadily increased, absorbed over 100 million workers (Statistic Indonesia, 2015), and became more than 55 million units by the end of 2015 (Sarwono, 2015). However, the owners of those SMEs are arguably not “real entrepreneurs” because the main reasons to enter the business are merely *necessity-based* motivation instead of *opportunity-based* motivation (Larso & Saphiranti, 2016). The latter term is well-educated entrepreneurs who discover opportunity and use technological innovation to produce high-value-added products (Larso, Saphiranti, & Wulansari, 2012). In reality, this type of entrepreneur solely constitutes not higher than 3% of Indonesia's total population (Kompas, 2016). This number is considered inadequate as compared to those in some other neighboring Southeast Asian countries, such as Singapore (7%), Malaysia (5%), Thailand (4.5%), and Vietnam (3.6%) (Tempo Media, 2016).

The development of entrepreneurship education at the Indonesian higher education level is also relatively recent. This education type was previously going together with economic faculties in any state and private HEIs. The situation changed after the booming Indonesian economy of commodities and properties in the 1980s and some prominent business leaders who founded and set up the first Master Business Administration (MBA) and Masters in Management courses in Indonesia. The government eventually introduced formal business and entrepreneurship education under the National Higher Education System (Global Business Guide Indonesia, 2015). In this regard, the government has actualized the movement bypassing the law to promote and cultivate entrepreneurship education at the higher education level through the Indonesia Ministry of Education regulation with the Presidential Instruction No. 4 of 1995 (Hukum Online, 1995). The results were then several universities developed study programs or specialized schools in business and entrepreneurship. For example, Bandung Institute of Technology (ITB), one of the best public universities in Indonesia, established the School of Business and Management (SBM) in 2003, aiming to create more knowledge-based entrepreneurs who contribute to the economy and the nation. The University Ciputra (UC), one of the leading private HEIs that envisions becoming the best entrepreneurial university in Indonesia, followed a similar path in 2006. Those HEIs are few examples of Indonesian HEIs that integrate entrepreneurship education into the curriculum with the hope to support the national economy, eradicating “graduate unemployment.”

Despite the growing demand, studies argue that the practice of entrepreneurship education in Indonesian higher education has been ineffective (see, e.g., Ghina, 2014; Larso et al., 2012). The ineffectiveness includes the lack of entrepreneurship education programs’ provision all around the country; and, most importantly, the lack of an understanding of how and what appropriate methodologies to teach and produce graduate entrepreneurs (e.g., Rumijati, 2017; Priyanto, 2012). Entrepreneurship is still frequently taught as an elective subject in many Indonesian HEIs (Ardianti, 2009). Additionally, some studies also argue that general education in Indonesia tends to hinder rather than encourage entrepreneurship growth (Larso et al., 2009; Soepatini, 2013). The problems above justify the research need to study some current states of entrepreneurship education at the Indonesian higher education level.

Notwithstanding, the number of studies concerning entrepreneurship education at the higher education level in Indonesia is relatively minimal, let alone the English articles published in top-ranking journals in entrepreneurship, business, or management. In this regard, the primary systematic literature review method may not be suitable for this case. Rather, mapping out and categorizing some existing and available online literature (i.e., mostly conference papers from both national and international levels and scientific articles published within internal university publication journals) could be the most feasible alternative for the *initial* step. By using the mapping literature review methodology (Gough et al., 2003), we have identified and analyzed 31 English articles concerning Indonesian entrepreneurship education within the higher education context, during the year 2010–2019, from Google scholar and other institutional or national publication online library journals and then mapped them in some thematic issues. Due to the rationales above, this study believes that

it is paramount to confine the depth and breadth of the review into few emerging themes, specifically within the perspective of Indonesia. They are the Indonesian entrepreneurship education programs' provision—including research inquiries on the common practices of course contents and teaching methods, mentoring and other entrepreneurial learning types, entrepreneurial competencies, as well as some views concerning Indonesian students and entrepreneurs in relation to Indonesian entrepreneurship education programs' provision.

Finally, this study includes five sections besides this introduction. The following is the mapping literature review methodology used for this study will be explained. The study will continue by exploring the results and discussions that consist of descriptive and analytical elaboration—followed by conclusion and recommendation. Finally, the limitation and research implications will be explained at the end.

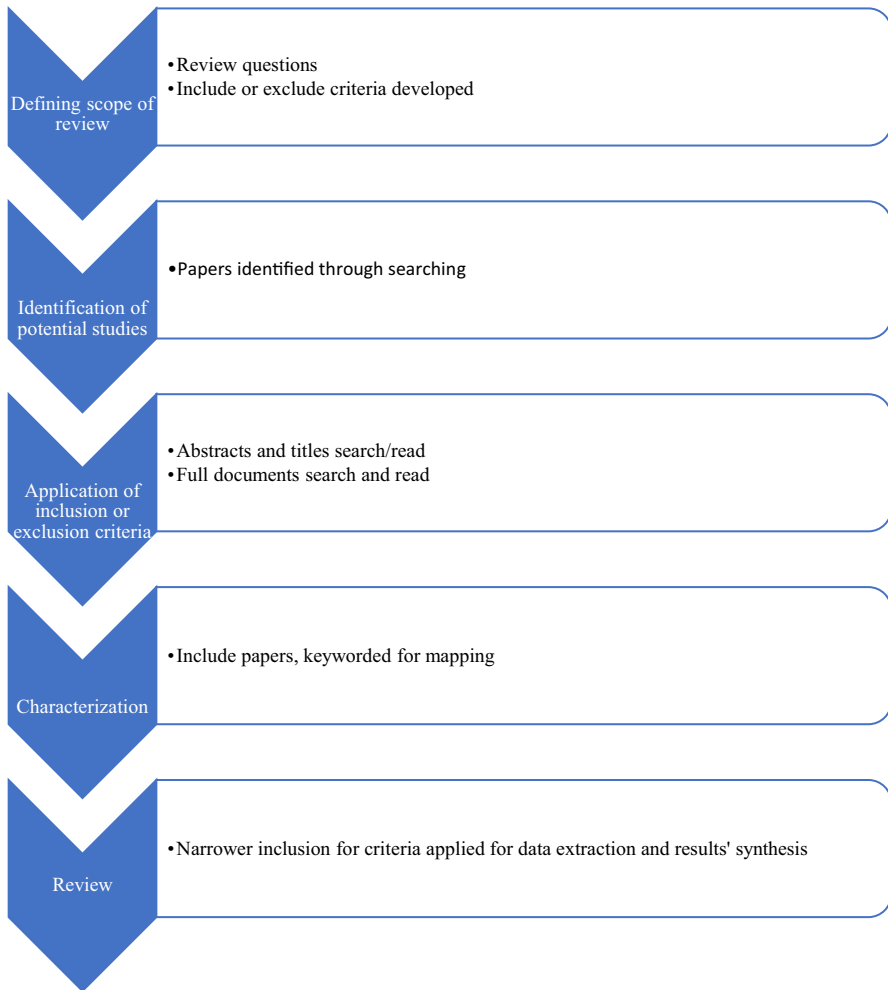
## Methodology

Following the method developed by Gough et al. (2003) from the EPPI—Institute Center of Education, University College London, mapping literature review methodology enables the contextualization of comprehensive reviews within broad literature and recognition of research needs and gaps. In this case, the mapping aims to reveal some states within the Indonesian literature in higher education, particularly from the country's perspective. This method is helpful as it can be used as a *proposition* or *starting point* for further research and investigation to cover more subsequent issues within the particular topic of Indonesian entrepreneurship education, especially in English language scientific articles. Moreover, it would offer Indonesian governments, practitioners, and scientists a clear and transparent way of identifying narrower action plans and practice-relevant research. Additionally, the collected articles must be in English from which they can be examined critically without having any language barriers, such as translation, interpretation, and other contextual issues.

Furthermore, this mapping methodology may characterize literature in some ways, such as the theoretical point of view, population category, or the part within which studies were involved (Gough et al., 2003). The mapping literature can provide some fundamental informed decisions about undertaking a further in-depth review and synthesizing research. Also, this map shows the total population and establishes whether they will help answer the review question and address practical considerations. See Fig. 1 for the stages of the mapping methodology.

The stages begin with defining the review's scope consisting of review queries and inclusion criteria, and exclusion. Some queries were delineated, i.e.,

- The entrepreneurship programs or courses within the Indonesian higher education;
- The entrepreneurship course contents and teaching strategies or methods offered in Indonesian higher education;
- The types of entrepreneurial learning practiced in Indonesian higher education;



**Fig. 1** Stages of mapping literature review (Gough et al. from the EPPI—Institute Center of Education, University College London, 2003)

- The students' entrepreneurial competencies expected from the Indonesian entrepreneurship in higher teaching programs; and
- The expected mindsets and characteristics, and issues of Indonesian students and entrepreneurs with connection to entrepreneurship education.

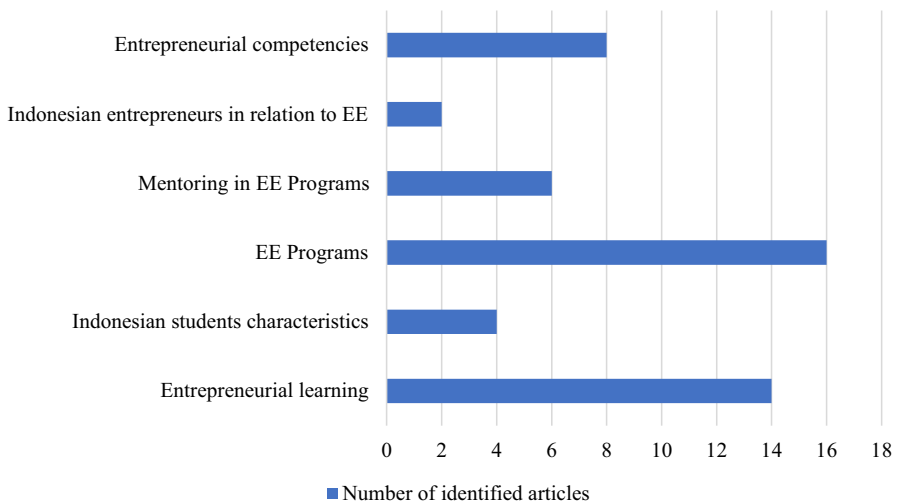
Moreover, the articles must study only about Indonesia (as geographical and demographical components). Still, the language of the articles must be in English and during the last ten period (the year 2010–2019). The context is within formal higher education, and the research type could be both empirical and conceptual.

The second step identifies the possible studies through the electronic database, i.e., mainly from Google scholar and other institutional or national publication online library journals. However, again due to the relatively limited amount of Indonesian entrepreneurship education research in full English language articles, the search resulted in approximately 44 articles (see “Appendix A”). Next is exerting inclusion and exclusion specification. That is, if the article is not about “entrepreneurship higher education in Indonesia,” “not in English,” “not about or in Indonesia,” and “not in the formal education setting, higher education level,”; the paper is excluded. By applying those criteria, the resulted documents become 31 articles (see “Appendix B”).

Finally, those included articles are explored and characterized based on several themes that were emerged during the analysis process (see Fig. 2). The emerging themes are Indonesian entrepreneurship higher education programs offered, entrepreneurial learning and mentoring, entrepreneurial competencies, and some views concerning Indonesian students and entrepreneurs. The following are our findings and the related discussion of each emerging theme from our mapping literature.

## Findings and discussions

Figure 2 shows significant themes that emerged from the literature studies of entrepreneurship education (EE) within the context of Indonesian higher education (HE). Out of 31 selected articles (see “Appendix B” for more details), two major themes emerged, i.e., EE programs’ provision and entrepreneurial learning in Indonesian entrepreneurship higher education. That means, majority of the selected articles primarily discussed those two issues intensively. The rest of the identified articles focus



**Fig. 2** Emerging themes revealed in the mapping literature of entrepreneurship education within the context of Indonesian higher education

on students' entrepreneurial competencies, mentoring, and other types of entrepreneurial learning in EE programs within the Indonesian higher education context and some issues on Indonesian students' characteristics and entrepreneurs about EE.

The following are the thorough discussions of those emerging themes. We will begin with the most discussed themes, i.e., entrepreneurship education (EE) programs' provision and entrepreneurial learning in Indonesian Higher Education. The former will include a more extensive discussion on the most common course contents and teaching methods practiced in Indonesian EE programs. The latter will also cover the "mentoring" theme. It is categorized as a new type of entrepreneurial learning (see, e.g., Kutzhanova et al., 2009; Kubberod, Fosstenloken, & Ersted, 2018; Lefebvre & Redien-Collot, 2013; Rigg & O'Dwyer, 2012). Furthermore, the discussion will continue to cover the rest of the themes. We will further explain some expected entrepreneurial competencies and skills in Indonesian students due to EE programs and some views on Indonesian students and entrepreneurs that may include some characteristics, mindsets, and issues related to EE.

### **Entrepreneurship education programs in Indonesian higher education level**

Entrepreneurship is teachable and no longer a matter of debate (see, e.g., Drucker, 1984; Gorman et al., 1997; Kuratko, 2005). The development of entrepreneurship education has an increasing impact over the last decades in creating the right attitude in individuals and developing knowledge and skills relevant to entrepreneurship (Baptista & Naia, 2015; Mitra & Manimala, 2015). Entrepreneurship education also involves developing certain personal qualities and is not necessarily directly focused on creating new businesses (Vacek et al., 2016). Although there is no agreed consensus on the definition of entrepreneurship education, Vesper and McMullan (1988) have concluded that entrepreneurship education is different from general business education, as it is different for entrepreneurs and familiar business managers. The former can generally generate more plans, exploit circumstances, and act accordingly through extensive actions. Subsequently, entrepreneurship education is about the process and learning that how entrepreneur experiences interact with the environment as the process change and value creation the entrepreneur generates through his or her actions.

Concerning Indonesia, its general education system has placed a significant focus merely on students' cognitive attainment for a long time (Darmaningtyas, 2004) while leaving behind the issue of knowledge application in real life (Joni, 2005). The outdated teaching methods, which give little room for critical and creative thinking, have also been discussed. As a result, many higher education graduates fail to contribute with innovative change in the community (Raihani, 2007), mismatch the labor market requirements, and the situation leads to the overall insufficiency of R&D's industrial activity (Soepatini, 2013). Business and entrepreneurship education was also considered a pure economic faculty, and the government did not see a need for specialized schools for the discipline. Then in the 1980s, when there was a booming economy in commodities and property,

the need for dedicated business education began to flourish and establish business schools and entrepreneurship education (Global Business Guide Indonesia, 2015).

Within our identified literature, out of 31 selected articles, over half of the total articles discussed the first theme of entrepreneurship education programs' provision, i.e., its conceptualization and programs' provision in the respected universities are shown in Fig. 3, and some more details in Table 1.

As shown in Fig. 3, the entrepreneurship education programs in higher education in Indonesia seem to have been centered on Java Island. Simultaneously, very few programs and studies existed outside Java, especially in the eastern parts of Indonesia. The problem of *centralized* higher education institutions (both for the quantity and even quality) in Indonesia seems everlasting. The central and provincial governments have never really been resolved since its root is likely due to the Indonesian population's unequal distribution. Out of 250 million people, 60 percent live on Java Island (Annurwanda, 2016). Similarly, the top-5 universities and HEIs in Indonesia are also "centralized" in Java (Harususilo, 2020).

Numerous existing programs in Table 1 are primarily for undergraduate level and still few for postgraduate one. The undergraduate level program mostly takes 3 to 4 years, while the master level takes 1 to 2 years, with business and management as the curriculum system and courses. Some universities also require students to undertake entrepreneurial projects or training activities as a part of the curriculum programs. For example,

1. "Entrepreneurship Track" and "Entrepreneurial Mentoring Program" in School of Business Management Bandung Institute of Technology (see, e.g., Ghina et al., 2014, 2017; Larso & Saphiranti, 2016; Larso, Saphiranti, and Wulansari, 2012);
2. "Entrepreneurial Start-up" program in Ciputra University (see, e.g., Antonio, 2012; Sembiring et al., 2011); and
3. "Entrepreneurship and Business Fair" activity in Petra Christian University Surabaya (Ardianti, 2009).



**Fig. 3** Map of Indonesia and its identified HEIs offering entrepreneurship education



**Table 1** List of Entrepreneurship Education Programs' Provision within the Indonesian HEIs

| HEIs/ University                                                                                                                                                                                                                                                                            | Types of EE Programs' Provision                     |                                                    | Some Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Types of Entrepreneurial Learning Offered in the Related Program                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                             | EE Programs' Provision for Undergraduate (UG) Level | EE Programs' Provision for Postgraduate (PG) Level |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                 |
| Bengkulu University in Bengkulu Province, Sumatra Island (Abdoh, 2012)                                                                                                                                                                                                                      | ×                                                   |                                                    | Compulsory (introductory) entrepreneurship course                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Students' entrepreneurship training and fund accessibility after the training and selection process                                                                                                                                                                                                                             |
| School of Business Management, Bandung Institute Technology in Bandung city, West Java Province, Java Island (Aldianto, Anggawita, and Umbara, 2018; Ghina et al., 2014, 2017; Larso & Saphiranti, 2016; Larso, Saphiranti, & Wulansari, 2012; Larso, Yulianto, Rustiadi, & Aldianto, 2009) | ×                                                   | ×                                                  | The E-Track (entrepreneurship track) of 4-year and MIT (management and technology track) of 3-year UG program. The former is the typical UG program. The latter is for students who formerly have a science and technology background and want to continue their UG studies and combine them with entrepreneurship. For the master's degree EE program, the MBA in Cultural and Creative Entrepreneurship (MBA CCE), specifically for creating more entrepreneurs in creative and cultural industries | Besides typical business and management lectures (e.g., courses in spotting and evaluating business opportunities, planning business and creating a profitable business model, initiating new venture, and growing the business), students are supported with entrepreneurial mentoring sessions, especially for the PG program |

Table 1 (continued)

| HEIs/ University                                                                                                                                                  | Types of EE Programs' Provision                                                                           | Types of Entrepreneurial Learning Offered in the Related Program                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ciputra University in Surabaya city, East Java Province, Java Island (Antonio, 2012; Kodrat, Liem, & Kusumowidagdo, 2011; Sembiring et al., 2011; Setiawan, 2014) | EE Programs' Provision for Undergraduate (UG) Level<br>EE Programs' Provision for Postgraduate (PG) Level | The EE program curriculum follows the gradual business model: -groundbreaker (personal selling skill); -business model creator (start-up and online); -venture executor (retail); -innovator (innovation); and -global player (international business)                                                                  |
| Petra Christian University Surabaya University in Surabaya city, East Java Province, Java Island (Ardianti, 2009)                                                 | Some Details                                                                                              | Besides some introductory entrepreneurship lectures, students are offered series of entrepreneurial learning activities outside the classes. For example: attending entrepreneurship seminars, hosting entrepreneurship seminars, and learning to commercialize products by opening booths in a student's business fair |

**Table 1** (continued)

| HEIs/ University                                                                                                      | Types of EE Programs' Provision                     |                                                           | Types of Entrepreneurial Learning Offered in the Related Program                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                       | EE Programs' Provision for Undergraduate (UG) Level | EE Programs' Provision for Postgraduate (PG) Level        |                                                                                                                                                                                                                                                                                                            |
| Ma Chung University Malang in Malang city, East Java Province, Java Island (Noya & Setiyati, 2015)                    | ×                                                   | Some Details                                              | Entrepreneurship 6-compulsory lectures each course is delivered for each semester for the whole three years. Besides that, an entrepreneurial grouped mentor assists students with entrepreneurial skills run and develop their businesses and motivate them to be business owners after graduation        |
| National University Malang in Malang city, East Java Province, Java Island (Sudarmiatin, 2016)                        | ×                                                   | Thy typical 4-year UG program, under the economic faculty | Compulsory entrepreneurship and business lectures, business plan group projects, presentations, and business trials. Also, there is an entrepreneurial/ marketing practice of the "Minimarket" Lab Weeks for students to test and evaluate whether their proposed products/ services are marketable or not |
| National University Manado in Manado city, North Sulawesi Province, Sulawesi Island (Sendouw, Kairupan, & Mege, 2018) | ×                                                   | Entrepreneurship courses for UG students                  | The UG students from all faculties are encouraged (but not obliged) to take entrepreneurship applied courses to learn basic entrepreneurial knowledge and skills to start and manage businesses                                                                                                            |

Table 1 (continued)

| HEIs/ University                                                                                                                                                            | Types of EE Programs' Provision                     |                                                    | Types of Entrepreneurial Learning Offered in the Related Program                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                             | EE Programs' Provision for Undergraduate (UG) Level | EE Programs' Provision for Postgraduate (PG) Level |                                                                                                                             |
| School of Business or <i>Sekolah Tinggi Ilmu Ekonomi</i> (STIE) Nobel Indonesia in Makasar city, South Sulawesi, Sulawesi Island (Hidayat, Musa, Haeranu, & Sudirman, 2015) | ×                                                   | Entrepreneurship courses for UG students           | Typical traditional lectures                                                                                                |
| University of Cenderawasih in Jayapura city, Papua Province (Goldstein et al., 2016)                                                                                        | ×                                                   | Entrepreneurship courses for UG students           | An optional entrepreneurship course for undergraduate studies at the faculty of economics at the University of Cenderawasih |

Nevertheless, those mentioned above *more advanced* entrepreneurship programs in Indonesian higher education seem to be familiar only in the big cities of Java Island. Other HEIs, especially in Sulawesi and Papua islands (the northeastern parts of Indonesia), still run conventional *in-class* entrepreneurship education programs (see, e.g., Sendouw, Kairupan, & Mege, 2018; Hidayat et al., 2015; Goldstein et al., 2016).

The *centralization* and *decentralization* of education, especially for entrepreneurship, is relatively a new discourse in Indonesia (Musanna & Bahri, 2011). The application of the decentralization concept is inseparable from the country's political- and sociological-based factors. Historically, Indonesia had been under a centralized governmental system from the year 1966–1998 under the regime of the *New Order* (Supriyatna, 1993). While sociologically, due to that past political regime, the education system in Indonesia generally was not designed to prepare students contributing to the community as *entrepreneurs* or active contributors in the decentralized educational system, instead of as *buyers* or passive individuals in a centralized system (Larso et al., 2009; Soepatini, 2013). Therefore, the situation is not surprising even when the *new-generation* students, especially in the rural areas of Indonesia, still prefer to work as employees or civil servants when they graduate. However, they may have taken entrepreneurship education in their higher education (Larso et al., 2009).

To overcome the above issue and support more the accommodation of entrepreneurship education outside Java Island, educational policymakers, government, and educators should encourage the empowerment of HEIs in provincial regions and communities and provide flexibility in planning and selecting materials according to regional conditions (Muhaimin, 2003). In doing so, two requirements of managing decentralization education, i.e., delegation and facilitation, should be well-undertaken (Jalil, 1999). The former means, for example, giving more empowerment to HEIs outside Java provinces to become more capable in the offering, planning, and managing entrepreneurship education programs, courses, and curricula according to the local demand, educators' capacities, as well as students' demographic and characteristics. While the latter, the central government should not give up completely the support of regional HEIs to implement the decentralization of entrepreneurship education responsibly all over the country. In this case, some prominent universities and HEIs in Java Province could do knowledge sharing and university department training programs for the HEIs outside Java that would like to implement entrepreneurship education curricula, courses, or programs in their related HEIs (Tjakraatmadja, Martini, & Pritasari, 2011).

Notwithstanding, this issue of decentralizing and balancing entrepreneurship education programs' provision in Indonesian HE still leaves several complications. One big challenge is that not all HEIs outside Java Island have mature readiness, both in quantity and quality. The component may include providing suitable and proper entrepreneurship educators and teaching staff, contemporary curricula contents and teaching methods, and supporting local entrepreneurs and industries to implement the knowledge into an actual business application (Siswoyo, 2009). Therefore, there should be a necessary governmental step in providing a supportive framework. Some possible supports are program assistance (i.e., funding allocation, knowledge

sharing, a research collaboration between universities and industries) and facilities supports (i.e., learning materials, entrepreneurship centers, entrepreneurship incubators, and community service centers) (Gustomo & Ghina, 2017). If this obstacle is not handled correspondingly, it is feared that the education decentralization policy will only repeat the implementation of policies rolled out in Indonesia. That means good policies but stop at the level of discourse, and never grounded and find their solid form in fixing various aftermath problems (Musanna & Bahri, 2011).

### **Common practice: course contents and teaching methods**

Education and, notably, higher education should nurture entrepreneurial thinking, skills and competencies, and attitudes where an individual might one day decide to create a business (Ducheneuaut, & Billoti, 2001). Therefore, the question is no longer whether learning entrepreneurship is possible or not, but what and how to teach entrepreneurship are the best environments, methods, and strategies (Baptista & Naia, 2015). Studies have recognized classifications of entrepreneurship education, i.e., “About,” “For,” and “Through,” entrepreneurship (see e.g., Gibb, 2002; Handscombe et al., 2008; Pittaway et al., 2009; Pittaway & Edwards, 2012). The “About” type is likely the most typical form of entrepreneurship education (Mwasalwiba, 2010). Teaching “About” entrepreneurship uses more conventional pedagogical practice (i.e., teacher-oriented), and the approaches are usually instructional. This type predominantly aims to raise students’ awareness about entrepreneurship, reproduce knowledge, give a general understanding of the phenomenon, and are often done through theoretical-based courses (Pittaway & Hannon, 2008).

The second most mainstream classification of entrepreneurship education is the “For” type. This type tends to support students in managing entrepreneurial tasks, activities, and projects that empower them to gain necessary competencies and skills (McMullan & Long, 1987; Solomon et al., 2002; Vesper & McMullan, 1988). Teaching “For” entrepreneurship means intentionally preparing students for future entrepreneurial careers (Gibb, 2002; Pittaway & Edwards, 2012). The approaches could be experiential, exploration-based, and project-based, such as business planning competition, marketing or financial modeling, and computer simulations (see Gorman et al., 1997; Brawer, 1997).

Lastly, teaching “Through” entrepreneurship means a process and experiential-based approach where students go through an actual entrepreneurial learning process (Kyro, 2005), but rather in *safer* conditions (Hills, 1988). That attribute differentiates between “For” and “Through” approaches. The “Through” approach supports a broader definition of entrepreneurship and can be integrated into other courses, connecting entrepreneurial characteristics, processes, and experiences to the central issue (Pittaway and Edwards, 2012). Since this approach focuses on learning-by-doing (Pittaway & Cope, 2007), allowing students to engage in actual companies or business consultancy could be one example (Gibb, 2002; Solomon et al., 2002). While the “About” and “For” approaches are relevant typically to the majority of students on secondary and university-undergraduate levels (Handscombe et al.,

2008; Smith et al., 2009), the “Through” approaches can apply to a broader audience and in a broader and higher education level (Lackéus, 2017).

Despite its significant need, there is still a lack of consensus on *what* and *how* entrepreneurship should be taught (Bennet, 2006). This study explores those two significant themes in the context of Indonesian higher education. Figure 4 and Table 3 exhibit the most discussed curricula content and teaching methods, respectively, and word frequency would give a general sense of the discussion of the two subjects (Bazeley & Richards, 2000).

Figure 4 suggests that course contents in entrepreneurship education in Indonesia HEIs mainly still teach “About” entrepreneurship. Courses like basic and advanced management knowledge, business plan and research, marketing, finance, and academic entrepreneurship are the most common in many entrepreneurship programs in Indonesia. Then, course contents that are teaching “For” entrepreneurship are lesser offering. Those courses are including opportunity recognition, team building, generating ideas, networking, creative design, and innovation courses in general. Furthermore, the course content teaching “Through” entrepreneurship is even the least offered, i.e., design thinking, only found in one article (i.e., Larso & Saphiranti, 2016).

Similarly, Fig. 5 suggests that teaching methods in entrepreneurship education in Indonesia HEIs are also generally still teaching “About” entrepreneurship. Traditional lectures, group discussions, case studies, business plan creation, competition, and guest lecturers are the most common teaching methods in many entrepreneurship programs in Indonesia. Recently, teaching methods of game and simulation (teaching “For” entrepreneurship) and mentoring, collaboration, and internship programs (teaching “Through” entrepreneurship) are getting well-known. However, it seems the teaching method of “About” entrepreneurship will remain to exist.

Concerning the above findings, developing entrepreneurship education in Indonesia has been challenging. For instance, Indonesia’s confrontations with the

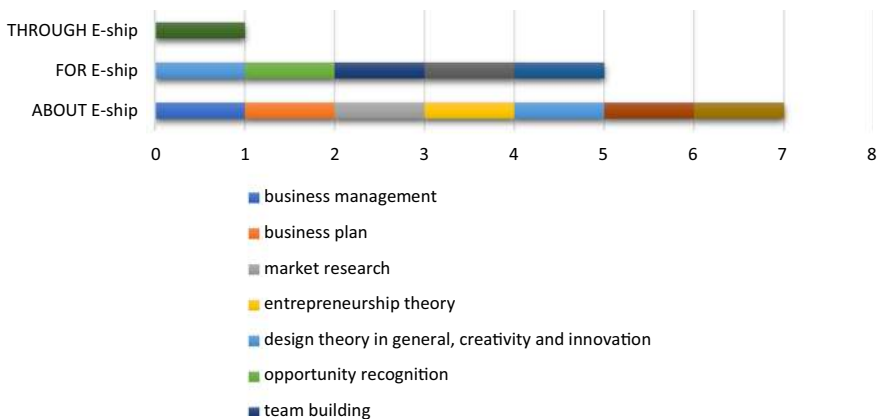
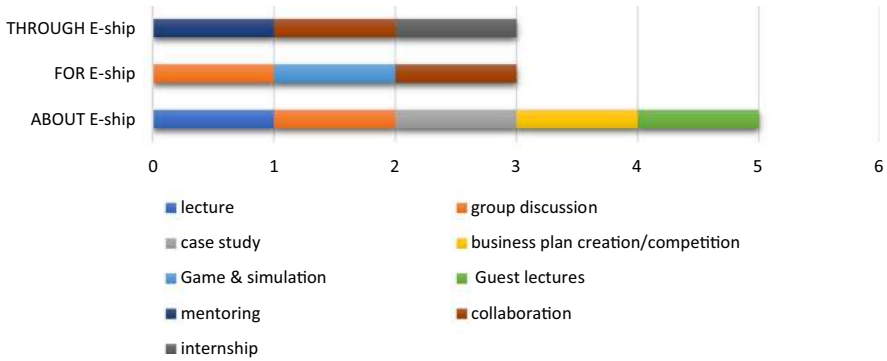


Fig. 4 Most common course contents within the provision of entrepreneurship education programs in Indonesian HEIs



**Fig. 5** Most common teaching methods within the provision of entrepreneurship education programs in Indonesian HEIs

unfavorable climate for the growth of an entrepreneurial society. Parents from poor and less-educated backgrounds usually prefer to get their children out of school as early as possible (Global Business Guide Indonesia, 2015). Thus, the number of secondary graduates who do not continue their education to a higher level is still eminent. Additionally, many Indonesian young people, due to cultural influence, prefer to become government officers rather than entrepreneurs after completing their education. In the same vein, it is pertinent to highlight that Indonesia lacks good programs geared toward entrepreneurship development. Tables 2 and 3, respectively, provide differences between the previous 1997–2003 and the 2009 entrepreneurship education programs.

As shown in Table 2, most entrepreneurship education at Indonesian HEIs was only providing a theoretical knowledge or teaching “About” entrepreneurship, but not creating mental abilities, attitudes, behavior, and practical skills for students to start their own business (i.e., teaching “For” entrepreneurship). This conclusion is also supported by Rumijati (2017) entrepreneurship teaching materials in the universities in Malang, East Java is emphasized more on improving knowledge or cognitive aspects. Similarly, Priyanto (2012) found that the curriculum and syllabus of

**Table 2** Indonesia previous entrepreneurship education (EE) programs in HEIs

| Year | Name of the EE program                                      | Focus                          |
|------|-------------------------------------------------------------|--------------------------------|
| 1997 | Entrepreneurship course (Faculty of Economics and Business) | Theory                         |
| 1997 | Entrepreneurship course plus small business internship      | Theory and Practice            |
| 1997 | Internship in small, medium, or big business                | Practice                       |
| 1997 | New business incubator                                      | Theory, Practice, and Guidance |
| 1997 | Business consultation and job placement                     | Consultation                   |
| 2003 | Cooperative Academic Education                              | Practice                       |

Source: “The 2009 report on student entrepreneurship education programs’ Provision–Program Experience and Lesson Learnt” (Purwadi, 2011)



**Table 3** Indonesian 2009 student’s entrepreneurship education (EE) program in HEIs

| Name of EE activities                                                              | Focus                     |
|------------------------------------------------------------------------------------|---------------------------|
| Short training (< one week)                                                        | Theory                    |
| Internship (in small business)                                                     | Practice                  |
| Manual and consultation during the internship                                      | Business plan development |
| Grant: at most 8 million IDR per student or 40 million IDR per group of 5 students | Start-up funding          |
| Consultation and close supervision                                                 | New business starts       |

Provided mainly university lecturers who were prepared through entrepreneurship Trainer of Trainers for Lecturers, coordinated with Ciputra Foundation (of Entrepreneurship).

Source: “The 2009 report on student entrepreneurship education programs provision –program experience and lesson learnt” (Purwadi, 2011)

entrepreneurship in some educational institutions in Salatiga, Central Java, have not encouraged students to become entrepreneurs significantly.

Furthermore, there has been no consensus at the national level over the definition, regulation, and practical aspects of entrepreneurship in higher education (Global Business Guide Indonesia, 2015). This circumstance has resulted in Indonesia’s adopting a narrow understanding of entrepreneurship, limited to venture creation, micro-, small, medium enterprises, self-employment, and trade. The expected result could be, for example, students from sociology backgrounds setting up food stalls selling fried chicken or engineering students selling T-shirts (Amry, 2019). Young graduates starting their business with limited experience, lack of funding, and minimum support will resort to being necessity-based entrepreneurs (Larso, Saphiranti, & Wulansari, 2012), having micro-businesses with no guaranteed growth and scaling up.

Given this experience, starting in 2009 (Table 3), the Indonesian government has allocated billions of funding to foster entrepreneurship in higher education. The intended funding was to prepare students to assess and take risks as *knowledge-based* entrepreneurs (Larso, Saphiranti, & Wulansari, 2012). The use of funds is for a practical internship, business mentoring and consultation, and start-up supervisory program (i.e., teaching “Through” “entrepreneurship”), rather than being focused only on employment (Kompas, 2016).

Lastly, from the above discussion, we may conclude that the Indonesian government has had a positive movement to reform its existing programs’ provision of entrepreneurship education. Nevertheless, this study shows that the standard practices of Indonesian entrepreneurship education at the higher education level still seem to be an infant and implement traditional course contents and teaching methods. Several fundamental business and entrepreneurship courses (i.e., teaching “About” entrepreneurship) that emphasize knowledge memorization and reproduction are the most common in Indonesian entrepreneurship education curricula. On the other hand, courses like entrepreneurial opportunity recognition, idea generation, networking, and design thinking emphasize students to create *value* for others, or the so-called teaching “For” and “Through” entrepreneurship is less famous.

Correspondingly, the teaching methods reflect similar findings. Teaching methods “About” entrepreneurship, such as lectures, solving case studies, and presenting guest lectures, is the best-known and used in Indonesian’ HEIs. In contrast, teaching methods that support more students’ independent learning processes (i.e., self-and group-based assignments, practical business collaboration, mentoring, and internship) are not yet well-employed.

### **Mentoring and other entrepreneurial learning types within the entrepreneurship education programs in Indonesia HEIs**

Entrepreneurial learning is a vigorous process of realization, reflection, affiliation, and application that involves adapting experience and knowledge into practical learning outcomes (Rae, 2006). It consists of knowledge, attitude, and psychological element (Cope, 2005). The process is influenced by the context in which learning takes place, and it includes both teaching content and methods through which learning occur (Politis, 2005). Individuals have personal differences in producing different learning outcomes within social and organizational communities (Corbett, 2005). There is also distinct relationship between entrepreneurial learning process with opportunity recognition (Duta & Crossan, 2005), as well as with exploitation, creativity, and innovation (Lumpkin & Lichtenstein, 2005). Entrepreneurship education is how an entrepreneur encounters an interaction with the environment as the process change and value creation the entrepreneur generates through his or her actions. Learning and value creation are the two main aspects of entrepreneurship and become the primary goal for students (Lackéus & Middleton, 2015). Letting students create value for external stakeholders will support them to develop entrepreneurial competencies, regardless of whether to achieve successful enterprise creation or not.

Within our identified literature of entrepreneurship education in Indonesian higher education, mentoring is one of the most recently emerging entrepreneurial learning types (see, e.g., Christina, Purwoko and Kusumowidagdo, 2015; Larso & Saphiranti, 2016; and Sembiring et al., 2011). As it comes from the social learning theory of Miller and Dollard (1941) and Bandura (1989), mentoring considers the active involvement of entrepreneurial role models or mentors as highly important in transferring entrepreneurial culture and developing imitation (Robinson et al., 2016). This approach arguably supports the entrepreneurial learning process more efficiently than a teacher alone (Kuberod, Fasstenlokken, & Erstad, 2018).

In this regard, Sembiring et al. (2011) in Ciputra University use this mentoring learning type combined with problem-based and project-based methodologies in teaching entrepreneurship. By exposing students to do real business projects, the mentors, in this case, are the entrepreneurship lecturers themselves, with whom students learn both theoretical knowledge and practical guidance and motivation. Moreover, Larso and Saphiranti (2016) involve real entrepreneurs as mentors in the School of Business Management Bandung Institute of Technology for students in their entrepreneurial learning process in a similar way. The mentoring approach seems to be a critical part of the curriculum and implemented through examples

and *off-class* discussions with the real entrepreneurs, while students are conducting their entrepreneurial activities simultaneously. In doing so, HEIs should consider some potential mentors' critical elements, either to be the entrepreneurship lecturers only or natural business practitioners in entrepreneurship education curricula (Christina, Purwoko, & Kusumowidagdo, 2015). The first is to determine the mentors' profiles that suit the respective learning goals of the entrepreneurship curriculum. The second is to pay attention to the mentors' background and business experience. Essentially, mentors should guide, provide business insights, and motivate students to learn interest and entrepreneurial activities.

Several studies in the literature recently have suggested mentoring and peer mentoring as an example of entrepreneurial learning (see, e.g., Kutzhanova et al., 2009; Kubberod, Fosstenloken, & Ersted, 2018; Lefebvre & Redien-Collot, 2013; Rigg & O'Dwyer, 2012; St-Jean & Audet, 2013). By interacting with entrepreneurial mentors, individuals could gain specific entrepreneurial competencies (St-Jean & Audet, 2013) and eventually develop an entrepreneurial identity (Rigg, & O'Dwyer, 2012). This mentoring usually involves novice individuals working and learn with natural business persons or experienced entrepreneurs (Lefebvre & Redien-Collot, 2013; St-Jean, & Audet, 2013). In contrast, peer mentoring involves pairing mentors and mentees with the same age and educational level (Kubberod, Fosstenloken, & Ersted, 2018). Terrion and Leonard (2007) explain that this mentoring could benefit both parties, i.e., by providing practical and professional support and psychological and emotional ones (Bozeman & Feeney, 2007; Terrion & Leonard, 2007).

Moreover, experiential or experiment-based learning type has started to be used more widely in Indonesian entrepreneurship education at the higher education level as well (see, e.g., Antonio, 2012; Kodrat Liem, & Kusumowidagdo, 2011; Ghina et al., 2017; Setiawan, 2014; and Sudarmiati, 2016). The term *experiential learning* or *learning-by-doing* (Cope, 2005; Kolb, 1984, respectively) emphasizes the importance of experience and describes the students' learning process through active involvement within an entrepreneurial company in a holistic manner to create and adapt knowledge (Woodier-Harris, 2010). It takes place when individuals learn from experience and accumulate new knowledge (Kolb, 1984).

Sudarmiati (2016) in National Malang University creates the entrepreneurship course based on experiential learning type that begins with an analysis of entrepreneurial opportunities and then puts students in a group to conduct and manage business activities in the "mini-market" setting. Similarly, Setiawan (2014) in Ciputra University design entrepreneurship courses that emphasize experiential-project-based learning. The approach encourages students to do "personal selling," followed by developing entrepreneurial ideas, acquiring feedback from potential customers, and eventually preparing statements into reality. With this approach, students learn how to develop the ability to realize the business plans in actual terms, creating and then marketing the products or services (Siswadi, 2013). The two above examples of the experiential learning process show two critical components: previous knowledge and the techniques themselves in acquiring, assimilating, and organizing newly formed knowledge (Kolb, 1984). The main point is that the learning process needs a symbolic representation of experience and then its transformation to develop a new

understanding, not merely a method of creating and re-creating one (Holcomb et al., 2009).

Apart from mentoring and experiment-based learning above, other articles in this study highlight the theme of entrepreneurial learning in Indonesian entrepreneurship education. For instance, Suroto & Suci (2015) discussed that integrating various internal and external dimensions of the universities into entrepreneurial learning could enhance Indonesia's higher education's entrepreneurial learning effectiveness. They believe that a valuable and conceptual model of entrepreneurship education is possible by formulating internal (effective learning curriculum design, teaching methods, and facilities) and external (roles of government, industries, and financial sectors) support. In a similar vein, Ghina (2014) aimed to evaluate the effectiveness of those supports to students, staff and lecturers, and the institution. She conceptually modeled the entrepreneurial learning theory in order to create successful "graduate" entrepreneurs. The model attempts to link the learning input (students' characteristics and competencies) to such supports of the learning process (programs, curriculum, pedagogy), and internal (institutional culture, infrastructure, regulations) as well as external environment (students' family background, ethnicity) of HEIs.

Nonetheless, those two previous studies partially researched the learning and institutional supports. They mainly focused on learning opportunities (programs, teaching methodologies, and institutional facility supports) and slightly emphasized the lecturers' competencies and ways to improve. Ghina et al. (2014) saw this gap and developed a more systematic framework to portray and evaluate entrepreneurial learning within a university context. Their framework explains the relations between the key stakeholders (students, lecturers, and institutions) and their essential aspects, such as ability, opportunity, and incentive. The output and outcome quality depends on the input and process quality. The input quality consists of students' ability, opportunity, and incentives to learn. Simultaneously, the process quality covers the lecturers' aspects of improving ability, opportunity, and incentive to learn and the institutional aspects of improving ability, opportunity, and incentive to teach. The learning perceived by students and lecturers, and alumni can be used as a continuous evaluation or called the assurance of learning. Framing the entrepreneurial learning evaluation in the systematic framework to better understand entrepreneurship education's managing factors is the key to their study.

From the above discussion, some *recent* types of entrepreneurial learning are following the theory of teaching "Through" entrepreneurship, i.e., mentoring, experiential *mini-market*, and *personal selling* approach. Some studies suggest integrating internal and external university environments and institutional supports to enhance entrepreneurship education's teaching and learning process. The above emerging types of entrepreneurial learning in Indonesian HE aligns with John Dewey's notion of "learning-by-doing," which means letting students learn to create value for other people; it is then entrepreneurial education (Lackeus & Middleton, 2015). Teaching methodology refers to "education about and for/through" entrepreneurship (see, e.g., Pittaway & Edwards, 2012). That is, creating actual value creation for other people as a regular part of the curriculum (a preferred teaching "Through" approach), or by

learning theoretically about how to create value to other people (less effective teaching “About” approach) (Lackeus et al., 2013).

### Expected students’ entrepreneurial competencies and skills of entrepreneurship education in Indonesian higher education

It is more obsolete from an educational perspective to teach entrepreneurship through entrepreneurship determinants—in education, often called entrepreneurship competence (Spruijt, 2017). That term is already complex and still an ongoing debate (Lans et al., 2008). Generally, entrepreneurship competence covers the entrepreneurial knowledge, skills, and attitude (Fiet, 2001), which affect the readiness and capacity to execute the entrepreneurial task to create new value (Lackeus, 2013). This definition is similar to the general and entrepreneurial competencies (see, e.g., Burgoyne, 1989; Kraiger et al., 1993; Sanchez, 2011).

Within our literature’s scope of the study, out of 31 identified articles, eight articles discussed some of the expected entrepreneurial competencies and skills nurtured in the Indonesian students due to entrepreneurship in higher education (see Fig. 1 and “Appendix B”). There are four significant competencies and skills found and categorized within our mapping literature, as shown in Fig. 6.

1. *Competencies and skills in fundamental business and entrepreneurship knowledge* These items can be transferred through entrepreneurship subjects and taught to the students. Therefore, the goal is to enable to change of students’ mindset into the entrepreneurial perspective through theoretical knowledge and possibly practical tasks applying the business and managerial expertise. In this regard, students are expected to identify and evaluate entrepreneurial opportunities; identify and solve business problems; make decisions; show business management and market skills, presentation skills, risk-taking, and innovative thinking.
2. *Competencies and skills in personality matters* Apart from implementing that entrepreneurial knowledge above, students are expected to nurture key entrepreneurial personalities, such as self-confidence, focus, and commitment to work; being efficient and strategic oriented in working; flexible and open to wide business networking.



**Fig. 6** Expected students’ entrepreneurial competencies and skills of entrepreneurship education in Indonesian HEIs

3. *Competencies and skills in marketing, selling, and business relationship* These are the competencies and skills in creating good interaction with the public (customers and users) primarily associated with business marketing. They are also connected with business partners and stakeholders who professionally collaborate in developing and building the business.
4. *Competencies and skills in financial structuring and managing* This item includes good understanding, analytical, and strategic thinking concerning finance and accounting measures in managing and advancing the business value.

The above findings are consistent with the 2012 OECD Report (Trembley, Lalanette, & Roseveare, 2012) that entrepreneurship education should foster entrepreneurial thinking, attitudes, and skills and cover some current trends such as idea generation, start-up, growth, and innovation. Therefore, the objective of entrepreneurship education should consist of developing formal knowledge and entrepreneurial skills and promoting personal qualities relevant to entrepreneurship, such as creativity, the spirit of initiative, risk-taking, and responsibility. Other entrepreneurial qualities are including problem-solving (i.e., the ability to see problems as opportunities to grow); cooperation and networking (i.e., the ability to cooperate, create networking, and learning new roles); and self-confidence and motivation (i.e., the ability to have self-trust as well as learn and think critically, independently, and continuously) (Tomczyk et al., 2016).

Moreover, the identified entrepreneurship competencies within the context of Indonesian higher education define three main competence areas, i.e., ideas and opportunities, resources, and action (Bacigalupo et al., 2016). Also, it consists of another fifteen competencies. They are self-awareness and self-efficacy; motivation and perseverance; mobilizing resources; financial and economic literacy; mobilizing people; taking initiatives; planning and management; coping with ambiguity, uncertainty, and risk; working with others; learning through experience; ethical and sustainable thinking; valuing ideas; having a clear vision; creativity; and spotting opportunities (Bacigalupo et al., 2016). While the entrepreneurial knowledge is about theory and conceptual models, basic knowledge on business, entrepreneurship, accounting, marketing, and others, and self-understanding of entrepreneurial (Krueger & Brazeal, 2004). At the same time, entrepreneurial attitudes are including passion and self-efficacy (Fischer et al., 2008); entrepreneurial self-belief (Krueger, 2003, 2007); proactive, risk tolerance, and innovation (Murnieks, 2007; Sanchez, 2011); as well as perseverance (Cotton, 1991; Markman et al., 2005). Also, the afore-mentioned entrepreneurial skills are following what Fischer et al. (2008) have comprised as the following.

- Marketing (i.e., doing market research, assessing the marketplace, being persuasive in marketing the products or services, as well as communicating and dealing with people);
- Resource (i.e., creating business and financial plan, obtain and allocate funding optimally);
- Opportunity (i.e., ability to recognize, act, and develop entrepreneurial opportunities into products or services);

- Interpersonal (i.e., ability to manage internal people, to lead, to motivate others, to socialize, and to resolve conflicts); and
- Strategic skills (i.e., setting, prioritizing, and focusing on goals) are the identified entrepreneurial skills.

### **Some views on Indonesian students and entrepreneurs related to entrepreneurship education**

Previously, there were several misconceptions about how Western teachers and educators saw some characteristics and mindsets of *Asian*—including Indonesian—students as passive, obedient, and unreflective (Ballard, 2005; Exley, 2005). Despite the criticism, some other literature also describes similar findings, in which the particular Indonesian learners are passive, obedient, and fearful to speak up. For instance, Pikkert and Foster (1996) investigated that Indonesian university teachers always have to ask their students to memorize in Central Java province. They also compared the critical thinking skills of third-year Indonesian university students in Central Java with American middle school and higher education students. Pikkert and Foster found that the Indonesian students' grades in critical thinking were lower than those in the US.

Moreover, Beh (1997) used a combination of interviews, observation, and surveys to assess English language instruction provided to 1265 third-year students in four regions by the Institute of Education, Malang, Indonesia (IKIP). The study reported that ELT (English Language Teaching) in Indonesian universities has been less successful for various reasons despite introducing a brand-new English curriculum. It further reported that eighty-five percent of the students' English written and spoken proficiency is *mediocre* (Beh, 1997). It also found that students in urban areas have higher motivation levels in learning English than students in rural areas. The study concluded that the case of unsuccessful English language teaching in Indonesia was because of low levels of teacher motivation, low levels of English proficiency for the educators, and students' difficulties in understanding the English specified text (Beh, 1997). Another study by Lewis (1996), who examined 320 Indonesian tertiary and private English language students, further showed that most Indonesian main characteristics were silence, occasionally completing pronunciation exercises, or answering comprehension questions on readings or grammar practices. The situation's outcome is then unsurprising when the teachers still prefer to use the traditional teaching method of grammar-translation (Lewis, 1996).

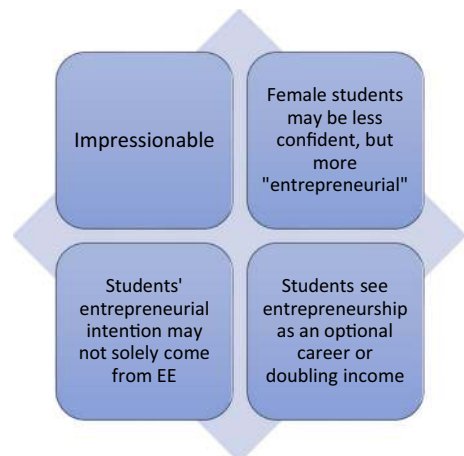
Meanwhile, some recent studies present the current trends about how *millennials* learners, born during 1982 until 2005 (Howe & Strauss, 2007), describe themselves as unique, sheltered, confident, team-oriented, conventional, pressured, and achieving (Howe & Strauss, 2007). Furthermore, those millennials consider themselves part of the global computerized community, so they cannot live without technology, computers, and the Internet (Merritt & Neville, 2002). Due to those different characteristics and mindsets between those millennials and those born before them (for example, Generation X and Baby Boomers), the situation creates a requirement for the HEIs to change the different approaches to learning (Phillips & Trainor,

2014). Some examples are more engaging and experiential-based learning and less traditional lecturing type (Skiba & Barton, 2006).

Similarly, Indonesian millennial university students are likely to be more favorable in doing more hands-on practical entrepreneurial activities but least favorable on thinking, self-directed, and individual tasks (Abduh, 2012; Setiawan, 2014). The latter may lead to low self-efficacy in dealing with entrepreneurial uncertainty (Setiawan, 2014). Moreover, Indonesian university students may be interested in featuring successful entrepreneurs' profiles in the learning method as it could arguably provide them higher motivation (Kaijun & Sholihah, 2015). Concerning this issue, four main components likely describe Indonesian millennials students' recent characteristics and mindsets within our identified literature. See Fig. 7.

The first characteristic is impressionable, which means Indonesian university students seem to be easily influenced by family and social interaction. A comparison study of perceived behavioral controls on the entrepreneurial intention with entrepreneurial education between Chinese and Indonesian students by Kaijun & Sholihah (2015) showed that entrepreneurial intention of Indonesian students is determined by the support from family and influential people. This attitude grows when students see that the people closest to them successfully run ventures. While Chinese students consider family opinions more carefully, Indonesians feel more motivated when they listen to and see their parents' example of running their own business. In this case, parents play a significant role in providing support and motivation that will make their children become socially competent, confident and responsible in realizing their intention to become entrepreneurs (Sahban, Ramalu, & Syahputra, 2016). Similarly, the pre- and post-questionnaire study done by Goldstein et al. (2016) when examine how to design entrepreneurship education for the east provinces of Indonesia, suggested that family and social class for the Indonesian students contribute positively to the students' experience in engaging entrepreneurship. They found that students with self-employed parents and middle-class families are more cooperative in entrepreneurial teamwork and business assignments. Also, social

**Fig. 7** Four-major related characteristics and mindsets of Indonesian students





support systems and networking play a very important in influencing students to become entrepreneurs in Indonesia.

In addition, a survey of 200 university students in private HEIs in Indonesian by Patricia & Silangen (2016) suggested a strong relationship between the social influence of classmates and entrepreneurial intentions. Students who are exposed to entrepreneurial influence will have more likelihood to have the intention to start their own business, and they also like to mingle with those who have strong social influence. Furthermore, parents are not the only role model for many Indonesian students to become entrepreneurs. They are often inspired by famous and young entrepreneurs' figures, especially in this age of social media influence (Kaijun & Sholihah, 2015). Even further, students who have direct experience with successful entrepreneurs have shown more interest and intention to start their entrepreneurial paths other than becoming civil servants or companies' employees (Goldstein et al., 2016). Therefore, this circumstance is anticipated that collaboration with real entrepreneurs as guest lecturers and entrepreneurial mentors (as in the previous findings mentioned) are becoming more well-known. The reason may likely be that a contemporary teaching method and entrepreneurial learning type within Indonesian entrepreneurship in higher education could facilitate entrepreneurship students' learning directly from experienced entrepreneurs (Hägg & Politis, 2015).

Secondly, there seems to be a gender difference between male and female Indonesian students' characteristics. According to Schroeder (2018), students in rural Indonesia see entrepreneurship and its potential career as a masculine activity. This possible gender issue might affect the general perception of entrepreneurship education at the higher education level, particularly for the female students in many provinces outside Java. They may also be prone to have lack self-confidence due to gender discrepancy in entrepreneurship education programs (Patricia & Silangen, 2016). On the other hand, Goldstein et al. (2016) found that female students in an entrepreneurship class show more inclined cooperation than the male ones, more actively taking leadership in managing businesses, and greater willingness to take advantage of entrepreneurial opportunities. Educators and policymakers must empower more female students to be entrepreneurs in education and practice (De Bruin, Brush, & Welter, 2007; Greene et al., 2007). Studies have also shown some positive effects when women in general and female students access as much entrepreneurship education as possible. Entrepreneurship enables them to use their earned income to support household and family goals; improve their standards of living; and gain autonomy (Ahl, 2006; Coleman, 2002; Minniti, Arenius, & Langowitz, 2005; Rindova et al., 2009). They also can set an example for other women to become entrepreneurs (Schindebutte, Morris, & Brennan, 2003). Entrepreneurship education that provides aspiring, budding, and practicing entrepreneurs to launch a business or grow an existing business, can help Indonesian female students and women entrepreneurs, as a whole, reach these goals.

Next, students in Indonesia are more motivated because of their belief that entrepreneurship education can benefit them in preparing their entrepreneurial career in the future. That means those who enrolled the entrepreneurship education programs are the ones who have entrepreneurial confidence and previous experience in managing and understanding businesses (Kaijun & Sholihah, 2015). On the other hand,

the results vary with the influence of entrepreneurship education. When comparing Chinese and Indonesian university students, Kajjun and Sholihah found an absence of direct influence of entrepreneurship education on entrepreneurial intention in Indonesian students. The reason may be because the students feel that entrepreneurship education in Indonesia is too theoretical, and provide less assistance, support, and access for them to start a business. However, Patricia & Silangen (2016) investigated that the local students of private HEIs in Indonesia who took entrepreneurship courses are more likely to have entrepreneurial intention to start their own business. They further explained that students who have entrepreneurial intention even before entering the education would be more likely to have higher entrepreneurial intention. This finding can suggest that students who want to start their own business are more likely to enroll themselves in entrepreneurial classes or programs.

The last characteristic is that entrepreneurship is still considered an *optional* future career for many Indonesian HEIs despite all the positive trends mentioned above. A study of the phenomenographic approach by Soepatini (2013) to understand students' and educators' perceptions of Indonesian entrepreneurship education showed that many university students in Indonesia are willing and interested to do entrepreneurial activities, even before they graduate from the HE. Some business types that they do are ranging from multi-level marketing business, selling clothes, souvenirs, and helping family businesses. The study also suggested that although students' common interest is to engage with business and entrepreneurial career aspiration, yet entrepreneurship seems to be only short-term planning due to the difficulty in funding and access to get business capital for many young entrepreneurs. The situation is then not surprising when students' primary objective is to get a degree, find a job in an established company while having a business and entrepreneurial job in their career would mean doubling their primary incomes (Soepatini, 2013).

Concerning those issues above, the theme of "Indonesian entrepreneur" is the least to be addressed. The situation is unsurprising because there is still a cultural belief that becoming an entrepreneur is an unstable career. Many Indonesian parents encourage their children to seek more stable government jobs or private companies (Noya & Setiyati, 2015). Even when those young people and millennials want to become entrepreneurs, many other obstacles create formal businesses. Those restrictions are, for example, limited access to obtain credit, gender discrimination (especially for female entrepreneurs) under bureaucracy, and unfairness in family responsibility (Firdausy, 1999; Ismail, 1996; Tambunan, 2008). Therefore, they prefer the "informal" sector as a way they become entrepreneurs.

The term "informal" business sector is defined as heterogeneous business or economical activities and employment, in which they may have lack of legal acknowledgment, regulation, and preventative (Llyod-Evans, 2008). This business category plays a critical role in developing countries, like Indonesia, as a creation of revenue and employment. As the country is home to approximately 22 million female entrepreneurs, 45 percent of them work in the informal business sector (International Labor Organization, 2013). Additionally, more than 60 percent of SMEs in Indonesia are owned and run by the female (Hani et al., 2012).

Many young and female entrepreneurs select this informal category as the effects of structural disadvantages, especially concerning the issues of gender, income level, education, class, ethnicity, or religion (see, e.g., Estrin & Mickiewicz, 2009; Klappper & Parker, 2011). Notably, gender discrimination causes Indonesian business women to choose the informal business sector for viable income-earning opportunities. Cultural bias (e.g., government office jobs are much better than opening businesses) also affects the mindsets and mentality of young people and women entrepreneurs to depend only on the informal sector. The situation could be worse when the government forced a high regulatory barrier to opening a proper formal venture or accessing credit (Babbit, Brown, and Mazahari, 2015).

Similarly, Tadjeddini, Raten, & Denisa (2017) examined the entrepreneurial characteristics of nine Indonesian women entrepreneurs in Bali Province who run hospitality and tourism businesses within our identified literature. Tourism, especially in Bali, is a highly labor-intensive and valuable source of unskilled employment in rural areas. The informal business sector has increased the participation of women in the hospitality industry, which has provided a socially reasonable way for women to earn income, even though they tend to earn below the minimum wage. Moreover, generally Indonesian entrepreneurs (in this case, female ones) are consciously or unconsciously willing to sacrifice growth and potentially more significant profits to avoid those restrictions mentioned above. The reason was not only because they may lack business and entrepreneurship education, knowledge, and skills; but the fact that they would be more flexible in managing their business and family responsibility is an incentive for them to stay with small informal businesses (Tadjeddini, Raten, & Denisa, 2017). Despite the aforementioned advantages of the informal business sector, the issue of gender disparity can harm Indonesian entrepreneurs' income-earning potential and hurt their businesses' ability to remain competitive in the long run (Babbit, Brown, & Mazahari, 2015).

Religion and ethnicity also seem to be the critical issue within the theme of "Indonesian entrepreneurs." Indonesia is one of the most prominent Muslim countries globally, in which Java Island consists of a significant number of Muslims in Indonesia. Hence, the concern is about *Halal* (permissible in Islamic way) certified food. However, for the Indonesian entrepreneurs' case in Bali, while Muslim is the majority, and Hindu Balinese is a minority ethnic group, their distinctiveness sometimes works against them when they participate in the hospitality and restaurant industry (Tadjeddini, Raten, & Denisa, 2017).

From the above discussion, the existence of the informal entrepreneurship sector, which majorly favors many Indonesian entrepreneurs, particularly the female ones, may represent that many Indonesian business owners are indeed still necessity-based and less-educated entrepreneurs (Larso, Saphiranti, & Wulansari, 2012). For them, the choice to open an informal business is due to numerous reasons, from challenging to get credit and funding to gender discrimination under bureaucracy (Babbit, Brown, & Mazahari, 2015). Lastly, cultural norms and beliefs in Indonesia, related to becoming entrepreneurs as a leading career of individuals, still become a significant drawback. This situation also seems inseparable from the previous findings that entrepreneurship education programs' provision in Indonesia is still limited, infant, and using "traditional" teaching methods and course contents. Furthermore,

Indonesian students' characteristics and mindsets may describe specific challenges and opportunities to develop the country's entrepreneurship education in higher education. As Wilson (2008) mentioned, there is no "one size fits all" solution. The entrepreneurship education in Indonesian higher education may also need to be adjusted and tailored accordingly.

## Conclusion and recommendations

From mapping literature strategy, this study has found several notable findings. First, the development of entrepreneurship education in Indonesian higher education is relatively recent and in its infancy. This circumstance has raised many challenges. Studies have mentioned that entrepreneurship education in Indonesian higher education has been ineffective, including the lack of an unequal distribution of entrepreneurship education programs. Most published articles on entrepreneurship education programs identified in this study are generally related to universities or higher education institutions on Java Island. This *centralization* in Indonesian education has been rooted for a long time because the country has historically been under a centralized government system in the past, and the former education system was not designed to support the school and HEIs graduates to be active contributors and entrepreneurs. As a result, there is still a cultural belief, especially for young students in rural provinces, that becoming entrepreneurs as a career is not a stable and promising job, instead of becoming a civil servant or company's employee.

Next is concerning the typical practices of entrepreneurship education in Indonesian higher education. The prominent teaching "About" entrepreneurship course contents seem to remain solid, although more HEIs have started to offer entrepreneurship courses "For" and "Through" entrepreneurship. The former consists of more theoretical and pedagogical practices, such as fundamental courses in management knowledge, business plan and research, marketing, and finance. At the same time, the latter supports students' entrepreneurial practical activities, such as courses and entrepreneurial projects of opportunity recognition, team building, generating ideas, networking, and design thinking. Similarly, the teaching methods in entrepreneurship higher education in Indonesia are dominantly still teaching "About" entrepreneurship. Such traditional lectures, group discussions, case studies, and business plan creation seem to remain eminent. Nonetheless, some more advanced teaching methods of game and simulation (teaching "For" entrepreneurship) and mentoring, collaboration, and internship programs (education "Through" entrepreneurship) are slowly getting familiar.

Subsequently, mentoring and experiential learning approaches are some of the most emerging types of entrepreneurial learning identified in Indonesian entrepreneurship education at the higher education level. This finding is related to the following point: Indonesian students seem likely to be more influenced by their surroundings (i.e., family members who become successful entrepreneurs or influential local businessmen and women). The role of family supports, social groups, and well-known entrepreneurs play a significant part in shaping students' entrepreneurial

mindsets and intentions. This situation is likely why mentoring with real experiential entrepreneurial learning is famous and well-accepted in Indonesian entrepreneurship education.

Also, this mentoring approach supports the more *modern* approach of entrepreneurship education, i.e., education “Through” entrepreneurship. The role of entrepreneurial mentors is significant in nurturing entrepreneurial culture and imitating students to become future entrepreneurs. In this case, the School of Business Management ITB, Ciputra University, and Petra Christian University are pretty advanced in employing this entrepreneurial learning approach. Another notable entrepreneurial learning approach is the experiential or experiment-based type. Setting students in managing business activities or encouraging them to do *personal selling* are examples of implementing experiment-based entrepreneurial learning in the Indonesian HEIs. Besides, more recent studies show that there is also a shift from past practices (theory-based) learning to embrace a more contemporary and modern approach. For instance, action and experimental learning, innovative business canvas model, direct business project exposure with a multidisciplinary team, and creative and cultural entrepreneurship combined modules and programs. However, those more advanced learning approaches still seem familiar in HEIs on Java Island, while the other HEIs outside Java possibly still run the conventional lecture entrepreneurship class.

Additionally, there are some associated students’ entrepreneurial competencies and skills from this mapping literature. They are competencies and skills in mastering theoretical business and management knowledge; nurturing entrepreneurial personalities; marketing and selling; as well as managing business and finance. Theoretically, those aforementioned competencies identified in this study are consistent with what the previous existing studies and theories about students’ entrepreneurial competencies and skills expected from the provision of entrepreneurship education. However, more investigation is needed to assess and evaluate the effectiveness of Indonesian entrepreneurship education concerning those expected competencies and skills.

Lastly, besides traditional norms and misconceptions about entrepreneurship and becoming entrepreneurs, the misperception of “masculinity” in entrepreneurship and gender discrepancy in entrepreneurship education is a few issues this study has uncovered. The fact that is Indonesian female entrepreneurs is made up a relatively large percentage of Indonesia’s business sector. However, several obstacles were unfortunately found to limit the female young “millennials” (and students) to become entrepreneurs. For instance, low level and limited access to higher education, difficulty in obtaining credit, possible discrimination upon female entrepreneurs under the law, and inequitable in family matters. Due to these circumstances, Indonesian women entrepreneurs are “trapped” in the informal entrepreneurial sector, which may harm their potential income and business competitiveness. Although this particular matter is interesting, since it is outside the scope of this study, further research is needed to explore more gender-related issues in Indonesian entrepreneurship education.

Nevertheless, from the above-highlighted conclusion, this study may propose some recommendations as to the following

- Entrepreneurship education should be considered a higher priority and essential matter by the government, policymakers, and educators. Besides establishing educational policies, all related stakeholders, including industrial and business sectors, should collaborate to develop more entrepreneurship education programs' provision across the country with more contemporary course contents and teaching methods; updated the entrepreneurial facilities (i.e., business community center and incubator); and provide accessible funding for students' entrepreneurial projects (i.e., startups, SMEs or technological ventures creation). These actions are crucial to ensure that the objectives and practices of entrepreneurship education are matched with both current globalization and the national need for economic well-being and competitiveness.
- Due to that, the need to invest in training and human resources for entrepreneurship education is also inevitable. Both central and provincial governments should support this initiative by allocating proper funding for entrepreneurial teaching programs, students' experiential programs and collaboration with companies, and sustainable research and training for educators.
- Additionally, private sectors (i.e., communities, business owners, and entrepreneurs) are vital to strengthening the positive contribution of entrepreneurship education. Universities and private sectors should establish and improve practical cooperation and mutual relationship. For example, in commercializing scientific results into economical products, enabling students to experience the actual business and entrepreneurial works in the companies, and creating sharing sessions and start-up training for students and university staff (i.e., activating business incubators for students and "entrepreneur goes to campus" events as guest lecturers or mentors).
- Finally, more recent and advanced course contents and teaching methods are critical to pushing forward the status quo of Indonesian entrepreneurship education, from teacher-based orientation to being more student-oriented. Therefore, HEIs should be encouraged and supported to implement more active and experiential practices of entrepreneurship education, such as offering more practical entrepreneurial courses (for example, design thinking, business model canvas) and encourage real-work projects, such as "student" startups creation, mentoring and internship, and giving more student funding accessibility for implementing entrepreneurial works.

## Limitations and further research implication

There are limitations to this study. Due to the limited number of English publications of scientific articles within entrepreneurship education at the Indonesian higher education level, the prominent systematic literature review could not be helpful. Instead, this study employed the mapping literature methodology that has some weaknesses. Mapping reviews are particularly limited in time and may suffer from a lack of synthesis and analysis of more considered perspectives. Some studies' categories may be too broad descriptive, which oversimplifies the picture, considering some variation between studies and their findings (Gough et al., 2003). Another limitation is

that the data limited to the literature studies available in online search only. Thus, it may be more interesting to collect more comprehensive quantitative data-survey, questionnaires, or even qualitative interviews as many Indonesian HEIs as possible concerning the country's recent data and state of entrepreneurship education. Due to that those limitations mentioned above, generalizations of the findings must be made with caution.

Nevertheless, this study contributes to greater recognition and exploration of contexts for entrepreneurship education in the Indonesian higher education level by uncovering and analyzing some critical issues, such as entrepreneurship education programs' provision, their common practices, types of entrepreneurial learning, as well as some issues of Indonesian students and entrepreneurs in relation to entrepreneurship education in Indonesia. The results of this study could inform Indonesian educators, researchers, and policymakers concerning the currently existing programs, standard learning practices, some anticipated students' entrepreneurial competencies, students' characteristics, and mindsets, as well as related issues on Indonesian entrepreneurs (particularly female ones) in relation to entrepreneurship education in the country and how to further improve them in the future by establishing the right policies and actions. Also, this study could shed some light concerning future research works that might be interesting and useful. One example could be adapting one of the novel teaching methods and course content of design thinking. As education "Through" entrepreneurship, that design-based learning method could be very beneficial to improve the effectiveness of entrepreneurship education in Indonesian higher education, especially in its rural areas that may need to get more attention from the central and local governments. Another suggested research area could be gender-related topics. For instance: how to tailor entrepreneurship course contents and teaching methods to support more female students' participation in Indonesian entrepreneurship education. Alternatively, maybe to design more equitable entrepreneurship in higher education across Indonesia, focusing on empowering more "millennials" female students to become entrepreneurs, particularly in rural provinces.

## Appendix

### Appendix A

See Table 4.

**Table 4** Results from stage 2 mapping literature review

|                                       |                                              |                                                                        |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------|
| Noya & Setiyati (2015)                | Larso & Saphiranti (2016)                    | Payumo, Arasu, Fauzi, Siregar, & Noviana (2014)                        |
| Ghina, Simatupang, & Gustomo (2014)   | Setiawan (2014)                              | Sahban, Ramalu, & Syahputra (2016)                                     |
| Tadjeddini, Ratten, & Denisa (2017)   | Ardianti (2009)                              | Sondari (2014)                                                         |
| Gunawan (2014)                        | Simatupang, Schwab, & Lantu (2015)           | Sudarmiati (2016)                                                      |
| Mirzanti, Simatupang, & Larso (2015a) | Mirzanti, Simatupang, & Larso (2015b)        | Wahidnurni, Muhammad Ain Nur, Abdussakki, Mulyadi, & Baharuddin (2019) |
| Antonio (2012)                        | Larso, Yulianto, Rustiadi, & Aldianto (2009) | Wiguna & Manzilati (2014)                                              |
| Sembiring et al. (2011)               | Ghina et al. (2017)                          | Aldianto, Anggawita, & Umbara (2018)                                   |
| Kodrat, Liem, & Kusumowidagdo (2011)  | Soepatini (2013)                             | Purwati, Hamzah, & Suhermin (2020)                                     |
| Larso, Saphiranti, & Wulansari (2012) | Azizah, Abraham, & Dhowi (2017)              | Fitriati, Lubis, Shakuntala, & Guntara (2011)                          |
| Fitrianto & A'la (2014)               | Christina, Purwoko, & Kusumowidagdo (2015)   | Tedjakusuma, Parung, & Kumamoto (2019)                                 |
| Abduth (2012)                         | Melinda, Sutanto, & Christian (2015)         | Sendouw, Kairupan, & Mege (2018)                                       |
| Kajjun & Sholihah (2015)              | Christina, Purwoko, & Kusumowidagdo (2016)   | Efrata, Hadiwidojo, Solimun, & Aisjah (2016)                           |
| Ghina (2014)                          | Febriyantoro (2018)                          |                                                                        |
| Ghina et al. (2014)                   | Goldstein et al. (2016)                      |                                                                        |
| Gustomo & Ghina (2017)                | Hidayat et al. (2015)                        |                                                                        |
| Suroto, Hadiyati, & Suci (2015)       | Patricia & Silangen (2016)                   |                                                                        |

## Appendix B

See Table 5.



**Table 5** Context matrix of the selected articles from the mapping literature review process

| No | Articles                              | Entrepreneurial learning | Indonesian students' characteristics | Indonesian e-ship education (program, curriculum, model, issues, barriers) | Mentor/ mentoring in entrepreneurship education | Indonesian entrepreneurs' characteristics | Entrepreneurial competencies |
|----|---------------------------------------|--------------------------|--------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------|------------------------------|
| 1  | Noya & Setiyati (2015)                |                          |                                      | X                                                                          |                                                 | X                                         |                              |
| 2  | Tadjedini, Ratten, & Denisa (2017)    |                          |                                      |                                                                            |                                                 | X                                         |                              |
| 3  | Gunawan (2014)                        |                          |                                      |                                                                            |                                                 |                                           |                              |
| 4  | Antonio (2012)                        | X                        |                                      | X                                                                          | X                                               |                                           |                              |
| 5  | Sembiring et al. (2011)               | X                        |                                      | X                                                                          | X                                               |                                           |                              |
| 6  | Kodrat, Liern, & Kusumowidagdo (2011) | X                        |                                      | X                                                                          | X                                               |                                           |                              |
| 7  | Abduh (2012)                          |                          |                                      | X                                                                          |                                                 |                                           |                              |
| 8  | Kaijun & Sholihah (2015)              |                          | X                                    |                                                                            |                                                 |                                           | X                            |
| 9  | Ghina, Simatupang, & Gustomo (2017)   | X                        |                                      |                                                                            |                                                 |                                           | X                            |
| 10 | Ghina (2014)                          | X                        |                                      |                                                                            |                                                 |                                           | X                            |
| 11 | Ghina et al. (2014)                   | X                        |                                      | X                                                                          |                                                 |                                           | X                            |
| 12 | Gustomo & Ghina (2017)                | X                        |                                      |                                                                            |                                                 |                                           | X                            |
| 13 | Ghina et al. (2017)                   | X                        |                                      | X                                                                          |                                                 |                                           | X                            |
| 14 | Suroto, Hadiyah, & Suci (2015)        | X                        |                                      |                                                                            |                                                 |                                           | X                            |
| 15 | Larso, Saphiranti, & Wulansari (2012) |                          |                                      | X                                                                          |                                                 |                                           |                              |
| 16 | Larso & Saphiranti (2016)             |                          |                                      | X                                                                          |                                                 |                                           |                              |

Table 5 (continued)

| No | Articles                                      | Entrepreneurial learning | Indonesian students' characteristics | Indonesian e-shop education (program, curriculum, model, issues, barriers) | Mentor/ mentoring in entrepreneurship education | Indonesian entrepreneurs' characteristics | Entrepreneurial competencies |
|----|-----------------------------------------------|--------------------------|--------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------|------------------------------|
| 17 | Larso, Yulianto, Rusiadi, & Aldianto (2009)   |                          |                                      | ×                                                                          |                                                 |                                           |                              |
| 18 | Setiawan (2014)                               | ×                        |                                      |                                                                            |                                                 |                                           |                              |
| 19 | Ardianti (2009)                               |                          |                                      | ×                                                                          |                                                 |                                           | ×                            |
| 20 | Soepatini (2013)                              |                          |                                      | ×                                                                          |                                                 |                                           |                              |
| 21 | Christina, Purwoko, & Kusumowidagdo (2015)    | ×                        |                                      |                                                                            | ×                                               |                                           |                              |
| 22 | Christina, Purwoko, & Kusumowidagdo (2016)    | ×                        |                                      |                                                                            | ×                                               |                                           | ×                            |
| 23 | Goldstein et al. (2016)                       |                          | ×                                    |                                                                            |                                                 |                                           |                              |
| 24 | Hidayat et al. (2015)                         |                          |                                      | ×                                                                          |                                                 |                                           | ×                            |
| 25 | Patricia & Silangen (2016)                    |                          | ×                                    |                                                                            |                                                 |                                           |                              |
| 26 | Sahban, Ramalu, & Syahputra (2016)            |                          | ×                                    | ×                                                                          |                                                 |                                           |                              |
| 27 | Sudarmiatin (2016)                            | ×                        |                                      | ×                                                                          |                                                 |                                           |                              |
| 28 | Aldianto, Anggawita, & Umbara (2018)          |                          |                                      | ×                                                                          |                                                 |                                           |                              |
| 29 | Sendouw, Kairupan, & Mege (2018)              |                          |                                      | ×                                                                          |                                                 |                                           |                              |
| 30 | Efrata, Hadiwidjojo, Solimun, & Aisjah (2016) |                          |                                      |                                                                            | ×                                               |                                           |                              |
| 31 | Melinda, Sutanto, & Christian (2015)          | ×                        |                                      |                                                                            |                                                 |                                           |                              |

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