

# INNOVATION MANAGEMENT OF SCHOOL COOPERATIVE USING BUSINESS INCUBATOR MODEL

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## Abstract

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This study aims to formulate an innovative business incubator model by optimizing the school cooperative's role to enhance the entrepreneurial spirit of vocational high school students in Indonesia. The method used in this study was the research and development (R&D) method from Thiagarajan, Semmel, and Semmel (1974), namely the Four-D model (define, design, develop, and disseminate) to determine a business incubator model which is compatible with school cooperatives design. Data were collected by questionnaire and interviews of students and teachers in several vocational high schools located in Central Java, Indonesia. The research resulted in the innovation management of school cooperatives which is integrated into a new business incubator model which has successfully improved the knowledge, practical skills, and entrepreneurial spirit of students in observed schools. The model consists of three stages, including planning, implementation, and evaluation which implies that collaboration among school stakeholders is key in implementing this business incubator model in order to achieve the same goal; strengthening students' entrepreneurial spirit. The model defined in this result could be implemented in other schools to be analyzed further in terms of its effectiveness.

**Keywords:** Development Model, School Cooperative, Business Incubator, Entrepreneurial Spirit, Vocational School

**Authors' individual contribution:** Conceptualization — R. and I.S.M.; Methodology — R.; Validation — R.; Formal Analysis — R. and I.S.M.; Investigation — R.; Resources — I.S.M.; Writing — Original Draft — R. and I.S.M.; Writing — Review & Editing — I.S.M.; Visualization — I.S.M.; Supervision — R.; Project Administration — R.; Funding Acquisition — R. and I.S.M.

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## 1. INTRODUCTION

The development of the economic and business world today has experienced a paradigm shift, from a resource-based economy to a knowledge or creativity-based economy. In Indonesia, unemployment

mostly happens because of the gap between a large workforce and the low absorption of the workforce. The number of workforces in Central Java Province in February 2019 was 18.59 million people, an increase of 0.36 million people compared to February 2018. In line with that, the workforce

participation rate was 70.21 percent; 10.73 million people (60.24 percent) of the population work in informal activities. Over the past year, informal workers rose by 0.22 percent compared to February 2018. The unemployment rate produced by Vocational High School (VHS) graduates was the highest, around 10.16 percent (The Central Bureau of Statistics of Central Java, 2019).

Mukhadis, Putra, Nidhom, Dardiri, and Suswanto (2018) found that 26 of 34 provinces have less than 50% relevancy of the VHS program compared to potency priority in the region. This irrelevancy happens due to ineffective communication between VHS stakeholders and policymakers. Pambudi and Harjanto (2020) stated that VHS needs strong support from the industry to keep graduates relevant to the labor market. These problems lead VHS into a circular chain of irrelevancy problems that is hard to break. An irrelevant curriculum leads to monotonous classroom activities which constantly produce graduates with low-order thinking skills. Hasan and Pardjono (2019) stated that 44.5% of VHS students have a low-order thinking skills profile. This condition makes them even harder to compete in the labor market.

Based on this phenomenon, innovation is urgently needed to improve VHS graduate skills in Indonesia. VHS curriculum revolution has been explored many times in studies. However, changing the curriculum requires a lengthy bureaucracy and consumes remarkable time. Therefore, VHS needs several different approaches while waiting for the ideal curriculum change to be executed. One of the approaches is increasing the entrepreneurial skills of VHS students. The goal is that students can build their own businesses after graduating from school instead of trying to apply for a job in existing institutions or business entities which will increase the number of the existing workforce. Al-Lawati, Abdul Kohar, and Shahrin Suleiman (2022) found that entrepreneurial culture has a significant relationship with entrepreneurship education and entrepreneurial intention. This study also suggested that entrepreneurial culture possibly could be a mediator between entrepreneurship education and entrepreneurial intention. Therefore, it is essential to develop new habituation in a VHS environment in order to cultivate the entrepreneurial culture in it.

The novelty of this study lies in the idea of innovating the management of school cooperatives to be a new form of business incubator for students' businesses. The study about school cooperatives may have been conducted by several Indonesian researchers (Ak, 2020; Soetanto & Yunus, 2021; Rufaidah & Andi, 2019). However, the idea to build it as a business incubator and set the model of it is rarely found, even in local literature. The cooperative is a business entity with unique business management in Indonesia because it is considered the most relevant business model in terms of Indonesian values and culture. As a local business wisdom in Indonesia, cooperatives are believed as the most suitable business entity for the noble values of the nation. The basic idea of a cooperative is how to solve the market problem caused by an imbalance of power between suppliers and customers by pooling members' purchasing power (Reynolds, 2013). This strategy to create the school

cooperative as a business incubator is a breakthrough idea that deserves further study for its concept and application.

The structure of this paper is as follows. Section 2 reviews the relevant literature on student entrepreneurial spirit, school cooperatives, and business incubators. Section 3 describes the methodology used to conduct empirical research on increasing the entrepreneurial spirit of VHS students through school cooperatives as a business incubator. Section 4 shows the research results and Section 5 elaborates discussion on the findings. Section 6 wraps up the conclusion of this study and add some recommendation for future research.

## 2. LITERATURE REVIEW

### 2.1. Student entrepreneurial spirit

Currently, VHS in Indonesia has set many strategies in order to increase entrepreneurial exposure for students. Muslim et al. (2020) stated that entrepreneurial learning in VHS not only occurs inside the classroom, but also are taught through business centers, apprenticeships program, and some entrepreneurial extracurriculars. The VHS business center itself has a significant role in stimulating students' entrepreneurial enthusiasm (Nurfauzi, Suyanto, & Munsyi, 2020). One form of a VHS business center is the school cooperative. The school cooperative could be a strong resource for VHS if it has a role as a business incubator providing students training, direction, and encouragement both material and support that will make students feel protected by the existence of a business incubator as a follow-up to learning creative products and entrepreneurship subjects.

One effort that can be done to overcome the problems above is to develop an entrepreneurial learning model by optimizing school cooperatives as business incubators. Learning with practice is a product/service-based learning concept that refers to standards and procedures that apply in the industry, and is carried out in an atmosphere like in the industry so that it can bridge the competency gap between the industry and vocational school graduates.

There are three domains of entrepreneurial competencies, namely knowledge, skills, and attitudes (Wang, Yueh, & Wen, 2019). Lackéus (2015) formulated the entrepreneurial competencies classification that elaborates the three domains into three main themes and sub-themes, including 1) *knowledge and skills*: knowledge, marketing skills, learning skills, interpersonal skills, resource skills, opportunity skills, and strategic skills; 2) *attitude*: innovativeness, self-insight, entrepreneurial passion, and entrepreneurial identity, and 3) *intention*: entrepreneurial intention.

The limited sub-themes of entrepreneurial identity made researchers try to elaborate more on this sub-theme and some of them include the entrepreneurial spirit variable. Lindner (2019) suggested that entrepreneurial spirit should be promoted by the school organization using a particular program named a coherent entrepreneurship school. This program basically is a coaching program to improve students' personal

competence and entrepreneurial achievement, encourage them to do independent acts in entrepreneurship, train their communication skills and expand the networking between school administrators, teachers, and parents. Meanwhile, in the Global Entrepreneurship Monitor (GEM) report, the most significant variables of entrepreneurial skills include entrepreneurial awareness, entrepreneurial opportunity perception, and entrepreneurial self-efficacy (as cited in Huang et al., 2021).

## 2.2. The school cooperative

The cooperative was established based on a joint decree (*surat keputusan* — SK) between the Minister of Trade and Cooperatives with the Minister of Education and Culture Number 719/KpbXII/79 and Number 282 a/P/1979 concerning the establishment of cooperatives in schools, both public and private schools, or other educational institutions. School cooperatives are cooperatives established in a school environment whose members consist of school members — teachers, employees, and students. School cooperatives can be established at various levels according to education levels, for example, elementary school cooperatives, junior high school cooperatives, and so on. The school cooperative can also be interpreted as a cooperative that is in other educational institutions, in addition to formal education, such as foundations, community institutions, boarding schools, and others.

In order to preserve the cooperative as the original business entity of Indonesia, every public school in Indonesia is encouraged to build a school cooperative, including the VHS. One of the goals of a school cooperative is to develop students' entrepreneurial spirit. There are two *darmabakti* (acts to dedicate) of entrepreneurs towards the development of the nation according to Alma (2005), namely: a) as an entrepreneur, giving his *darmabakti* to smooth the process of production, distribution, and consumption (entrepreneurs overcome the difficulties of employment, increase community income); b) as a national warrior in the economic field, increasing national resilience, reducing dependence on foreign nations.

The purpose and importance of school cooperatives are as follows:

- 1) Educating, instilling, and maintaining mutual awareness of life and friendship among students.
- 2) Fostering a love for the school.
- 3) Maintaining, developing, and enhancing the quality of knowledge and business skills in the form of cooperatives.
- 4) Instilling and fostering a sense of responsibility and discipline in living together in the midst of society.
- 5) Maintaining good relations and mutual understanding among students as members of cooperatives.
- 6) Instilling and fostering a sense of self-esteem, a spirit of democracy, courage of opinion, and equality of degrees.
- 7) As a means for learning and work, as well as a means for obtaining tools for school needs.
- 8) Developing students' entrepreneurial spirit.

## 2.3. The school cooperative as a business incubator

Regarding the business incubator, which is used as a model for students' entrepreneurial practices by utilizing and optimizing school cooperatives, several concepts regarding business incubators are put forward. State Minister for Cooperatives and SMEs Number 81.3/Kep/M. KUKM/VIII/2002 issued a decree stating that the incubator is an institution engaged in the provision of facilities and business development, both management and technology for small and medium businesses to improve and develop their business activities and or develop new products so that can develop into strong entrepreneurs and/or new products that are competitive in a certain period of time.

Business incubators have proven to be an effective strategy to tackle unemployment, spread economies, and generate wealth in several developed countries (Al-Edenat & Al-Hawamdeh, 2021). Elmansori (2014) found that the success of business incubators at both levels, micro and macro, are depending on some variables, such as well-timed assistance and funding for new ventures. There are five types of incubators that have been a reference in developing incubators in several countries according to Dipta (2015), including:

- 1) Regional development incubator, the focus of the program is on agribusiness, electric lighting, and improving the skills of craftsmen, especially for regional markets.

- 2) Research, university, technology-based business incubator, with the basis of its development on research and based at the university, the focus of the program is to provide services for trained personnel to become entrepreneurs who extract technology to meet the market and the various available opportunities.

- 3) A public-private partnership, an industrial development incubator, which generally lives in an urban or industrial estate environment, where large companies can be involved in developing small businesses as vendors for their components and services.

- 4) Foreign sponsors, International Trade and Technology, the focus of this incubator program is usually to develop international collaboration, technology, and finance, facilitating the entry of foreign small and medium enterprises into the local market (domestic).

- 5) Other types of incubators, for example, focus on certain group development programs, such as the development of certain established business groups.

Dutt et al. (2015), Gao, Cui, Lew, Li, and Khan (2021), and Mair, Marti, and Ventresca (2012) stated that business incubator provides quite important role as intermediary services facilitating the growth of start-up businesses. Many researchers have discussed business incubator as an external agent of a business (Antunes, de Castro, & da Costa Mineiro, 2021; de Bem Machado, Catapan, & Sousa, 2020; Hillemane, Satyanarayana, & Chandrashekar, 2019). Most studies about business incubators related to educational institutions are conducted in higher education institutions (Huda & Rejito, 2020; Nicholls-Nixon, Valliere, Gedeon, & Wise, 2021; Redondo & Camarero, 2019). On the other hand, study about building a business

incubator within VHS institution is very limited. Therefore, this research tried to develop a study about a potential internal business incubator in the VHS environment, namely school cooperatives. Optimizing school cooperatives as business incubators for students hopefully can enhance student entrepreneurial spirit.

### 3. RESEARCH METHODOLOGY

This study was research and development (R&D) with a Four-D model developed by Thiagarajan, Semmel, and Semmel (1974), which consists of the “define, design, develop and disseminate” stages. Furthermore, to evaluate the effectiveness of the developed model, this study was equipped with experimental research. The research and development steps consist of a preliminary study, design, and model development. Meanwhile, the experiments were carried out with an instrument examining students’ entrepreneurial spirit before and after learning using a new learning model.

Data collection techniques in this study were interview, documentation, and questionnaire. The interview was held in the form of a focus group discussion with the research participants. The participants were eight (8) teachers of VHS from SMK Negeri (Public Vocational High School) 2 Semarang and SMK Negeri 9 Semarang. Both of them are eminent VHS majors in business and management in Semarang City, Central Java, Indonesia. Four (4) teachers are specialized for handling entrepreneurship classes in their school and four (4) other teachers are the field supervisor for students’ projects out of school.

This developed model was implemented in six (6) months (March–October 2020) in both schools to examine its impact on students’ entrepreneurial spirit through experimental research. The respondents of experimental research were students from both schools from the final grade of VHS (class XII) who took creative products and entrepreneurship subject as many as eighty (80) students. They would fill up a Guttman scale questionnaire with certain eligibility score criteria for measuring their entrepreneurial spirit as stated in Table 1.

**Table 1.** Eligibility score criteria by students

| No. | Interval percentage | Criteria  |
|-----|---------------------|-----------|
| 1   | 85%–100%            | Very high |
| 2   | 68%–84%             | High      |
| 3   | 52%–67%             | Medium    |
| 4   | 36%–51%             | Low       |
| 5   | 20%–35%             | Very low  |

Alternatively, the experimental research also can be conducted by giving the questionnaire to the students twice, before and after the model was implemented. The data then can be compared using paired t-tests to identify if there is any difference in students’ entrepreneurship spirit before and after the new model of school cooperative is implemented. Researchers also can conduct gain index analysis to measure the before-after treatment increasing score. However, due to time constraints and the pandemic situation, the data were collected from students only once.

## 4. RESULTS

The results of this study consist of several parts arranged according to the stages of the research which include the “define” stage, the “design” stage, and the “develop” stage.

### 4.1. Define

The “define” phase was the initial stage to reveal some weaknesses in the research subject. Activities to obtain the information were needed so that the problem in research was clearer and could determine the solutions needed to answer the problem. A preliminary study was carried out through direct field observation activities. In this study, observing and formulating potentials and problems that occurred in the field were conducted and they were examined through literature studies and data and information collection.

In the initial stages of planning, the school prepared a work plan for implementing the business incubator program. Planning included: curriculum, human resource needs, facilities and infrastructure for business incubators, finance needs, and partners of the business/industry companion. The involvement of productive subject teachers in this planning stage was compiling a learning curriculum that would be implemented in a business incubator program that was developing a syllabus, preparing lesson plans, and also a worksheet that was used by students while carrying out entrepreneurial practice activities in a business incubator program. The output obtained was that students had less knowledge about the technique of starting entrepreneurship that could develop in the community. The students’ skills were still lacking as a provision to enter the business world so they needed to increase their enthusiasm for entrepreneurship and practice starting a business. Another typical finding has led to a recommendation from Harima, Gießelmann, Götsch, and Schlichting (2021) for entrepreneurship educators to continue offering support after students have completed their course, such as: providing consistent feedback, connecting students with stakeholders or setting project milestones.

### 4.2. Design

The “design” phase with the preparation of the learning model design was after obtaining a factual model. The conceptual model of learning was prepared based on the factual model and theoretical concepts related to learning entrepreneurial practices with business incubator design. The first stage was analyzing the implementation of learning in the subjects of creative products and entrepreneurship. It aimed to design learning models created in accordance with the objectives of entrepreneurial learning. It was known that there were some weaknesses in the factual model, so it needed to be followed up by developing a learning model of entrepreneurial practice by utilizing school cooperatives as a business incubator model.

A school cooperative was a container of entrepreneurial practices that had been modified in which there was practical equipment in accordance with standard operating procedures (SOP) in

business incubators. The business incubator as a place for training and entrepreneurship practice of vocational students was in accordance with the schedule determined by the teacher accompanying the practice and managing school cooperatives. In the business incubator, there were aspects of entrepreneurial skills and practical training as well as the entrepreneurial spirit for students. The elements of entrepreneurial business incubator skills and practices included:

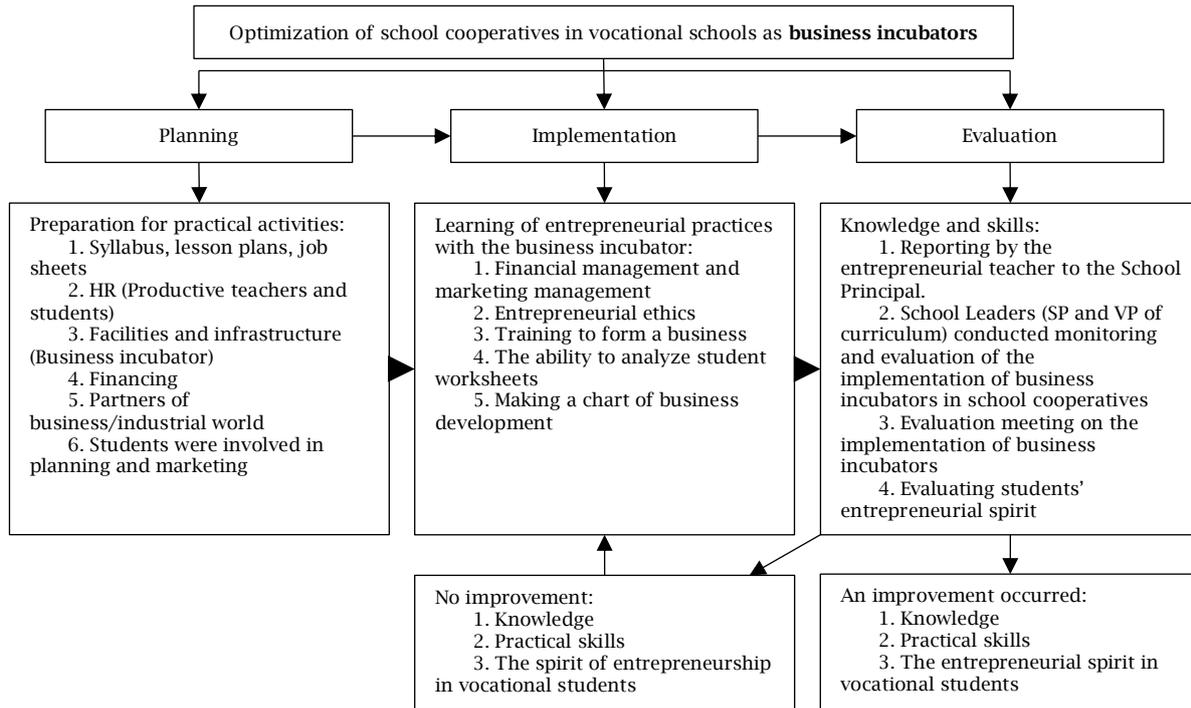
- 1) financial management and marketing management;

- 2) entrepreneurial ethics;
- 3) training to form a business;
- 4) the ability to analyze worksheets;
- 5) making a chart of business development.

Meanwhile, aspects of the entrepreneurial spirit in business incubators and school cooperatives were:

- 1) motivation and enthusiasm to progress;
- 2) creative;
- 3) innovative to look for opportunities;
- 4) commitment and responsibility.

**Figure 1.** The conceptual model of a business incubator for learning of entrepreneurial practices



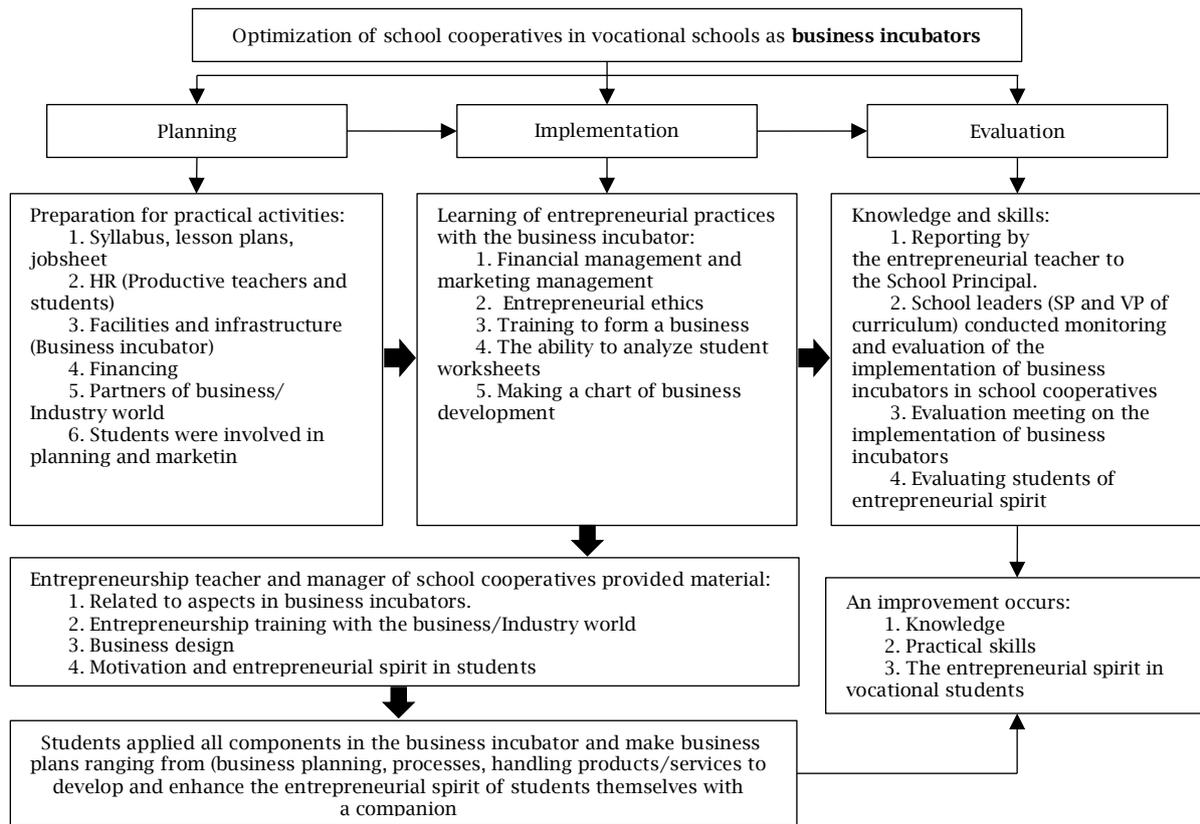
The concept was based on observations made so as to get shortcomings to be corrected with ideas to cover up the shortcomings that existed in entrepreneurial practices by optimizing school cooperatives. The school cooperative as an entrepreneurial practice was designed as a business incubator. This was intended to improve practical skills and entrepreneurial spirit so as to help in creating jobs and produce graduates of VHS who were competent in their fields and competitive in accordance with the mission of the VHS.

#### 4.3. Develop

The theoretical model was created based on the results of the analysis and design of the model, is a model developed from a conceptual model that had been validated by an expert validator. This

development model was improved by taking into account the suggestions and input from the validator. The resulting model was a business incubator model with optimizing school cooperatives in vocational schools for learning entrepreneurial practices. This was intended as an effort to improve practical skills and entrepreneurial spirit that was worth using for vocational students. There were four (4) experts who validated this model: two (2) entrepreneurship teachers from SMK Negeri 2 Semarang, one (1) entrepreneurship teacher from SMK Negeri 9 Semarang, and one (1) entrepreneurship lecturer from Universitas Negeri Semarang, Central Java, Indonesia. The development model or hypothetical model of a business incubator for learning entrepreneurial practices after being validated by experts produced a practical learning model (Figure 2).

Figure 2. The hypothetical model of a business incubator for learning entrepreneurial practice



The learning model of entrepreneurial practice with the concept of a business incubator model with the optimization of school cooperatives as a container could enhance the entrepreneurial spirit of students. The descriptive results of students'

entrepreneurial spirit had four (4) indicators, namely motivation to progress, creativity, innovation, and commitment and responsibility, which were presented in the following table.

Table 2. Description of students' entrepreneurial spirit at State Vocational School of Business and Management in Semarang City

| No.   | Interval percentage | Criteria  | Frequency | Percentage |
|-------|---------------------|-----------|-----------|------------|
| 1     | 85%-100%            | Very high | 8         | 10,0%      |
| 2     | 68%-84%             | High      | 70        | 87,5%      |
| 3     | 52%-67%             | Medium    | 2         | 2,5%       |
| 4     | 36%-51%             | Low       | 0         | 0          |
| 5     | 20%-35%             | Very low  | 0         | 0          |
| Total |                     |           | 80        | 100%       |

Source: Primary data processed, 2020.

Table 3. Description per indicator of students' entrepreneurial spirit of State Vocational School of Business and Management in Semarang City

| Indicator  | Total score ideal | Total score obtained | Percentage |
|------------|-------------------|----------------------|------------|
| Motivation | 2.000             | 1.608                | 80,4%      |
| Creative   | 2.000             | 1.593                | 79,7%      |
| Innovative | 1.600             | 1.273                | 79,6%      |
| Commitment | 2.800             | 2.293                | 81,9%      |
| Mean       |                   |                      | 80,38%     |

Source: Primary data processed, 2020.

## 5. DISCUSSION

Based on Table 2 and Table 3, it can be seen that a mean was 80.30% located at an interval percentage of 68%-84% in the high category. Thus, the students' entrepreneurial spirit at the Vocational School of Business and Management was high. It implies that the development model or hypothetical model of

a business incubator with the optimization of a school cooperative could enhance students' entrepreneurial spirit. The students' adviser in the school cooperative successfully motivates students to have a greater plan for their small business. As Nair and Blomquist (2021) found in their study, the outcome of this facilitator's interventions is a shared understanding of finding the way to

navigate the ambiguous and uncertain aspects of new business. Once talents are managed to get deal with them, they will be more engaged in their business or business plan.

Albort-Morant and Oghazi (2016) stated that the most influenced tenants from incubator services are those who are young, have good studies, have professional experience, and have a family experience. This is relevant to the finding of this study. Students are young and have good studies in VHS, even though only a few of them have professional experience, and the ones with family experience were not traced. However, young and good studies have been enough to make them more engaged with students' advisers provided by the school cooperative. By doing intensive coaching and many discussions, students can elaborate their business creativity and innovation, then finally they build a stronger commitment to doing entrepreneurship practices.

At the implementation stage in the management of business incubators, it was implemented by productive teachers and entrepreneurship teachers as students' advisers, and partners of the business/industry world as a companion of activities and marketing. The time of implementation was at the time of learning practice in accordance with the schedule of student practice. In addition to focusing on skills, students applied the real application of entrepreneurship (planning-process-handling of products/services) and created a chart of business development that was practiced.

Industries as a partner of schools in cultivating entrepreneurial spirit in students is not a new concept in teaching entrepreneurship. This partnership could be in many different ways and terms, such as teaching factory, apprenticeship, factory visit, or even in a simpler agenda like seminars and workshops. Lestari, Rusdarti, and Widiyanto (2021) found that students' creativity experience has proven to increase after implementing some teaching factory concepts in VHS. Meanwhile, Ezenwakwelu, Egbosionu, Ezezue, and Okwo (2019) stated that the apprentice program sharpens technical and entrepreneurial skills for self-employment. Magni and Mazzini (2018) revealed that the dynamics of collaboration bring back a higher awareness of soft skills' importance, such as motivation, ethics, teamwork, and organization which play an essential role in determining success in school and in the workplace later in the future. It also keeps entrepreneurship education relevant to industrial needs.

The industries also can take a part in VHS programs through their corporate social responsibility (CSR) program. Crifo and Reberioux (2016) found that the engagement strength in CSR programs is mainly influenced by the identity of shareholders, the composition and structure of the board of directors, and the regulatory framework. Industries are supposed to have no doubt to distribute their CSR to VHSs. VHSs certainly have a legal identity from the government and have a strong regulatory framework as the Indonesian Ministry of Education has a new policy about stakeholder collaboration in education. Besides, CSR program has some benefits for industries including enhancing corporate image, increasing business

performance, and escalating consumer satisfaction (Pitoska, Giannakis, & Sdraka, 2018).

Ni and Ye (2018) found that in China, students rated themselves with fairly high entrepreneurial intention, however they remained unsure with the difference between entrepreneurship knowledge and entrepreneurship education. Therefore, the presentation and systematic entrepreneurship materials need to be sharpened so that students were able to absorb entrepreneurial materials well. Supporting facilities and infrastructure, entrepreneurial laboratories and the lack of entrepreneurial training of teachers from the industrial world had led to entrepreneurial learning in vocational schools that were still shallow and had not yet touched on the true entrepreneurial substance. With the existence of business incubator models, the optimization of cooperatives can be a solution and implementation in entrepreneurial practices.

## 6. CONCLUSION

The business incubator model with optimization of school cooperatives as a business incubator has been approved by the experts as an innovative management of school cooperative in VHS and are effective in improving students' entrepreneurial spirit. The model shapes the character of VHS students to foster an entrepreneurial spirit. Furthermore, it establishes partnerships with industry which makes students' practices in business incubators more effective and efficient. This model supports the new policies in the Ministry of Education, in Indonesia named "*Merdeka Belajar*" or "freedom to learn" which encourages schools to collaborate with industry to increase the graduates' skills relevancy in the competitive labor market. Therefore, this model could be an alternative strategy to implement this new policy. It implies that this model is urgent to disseminate to other VHS in Central Java, Indonesia. The basic concept of providing additional skills to VHS graduates and collaborating with stakeholders makes this model has high compatible to be implemented in any VHS in Indonesia or in other developing countries which still struggle with entrepreneurial issues in their countries, such as Vietnam, a partner in ASEAN, which got rank 74 of 100 for the entrepreneurship index 2021 based on CEOWORLD magazine; Sri Lanka (80 out of 100); Iran (88 out of 100); and Pakistan (99 out of 100), as the countries that have the same majority religion and culture.

However, since the research subject in this study was limited to only two (2) VHSs in the business and management department, it needs a follow-up-research to analyze further some detailed adjustments needed if this model would be implemented in VHS with a different department. During the pandemic, this study had very limited access to keep up with VHS stakeholders. Therefore, the business incubator model with optimization of school cooperatives needs more appropriate quantitative data from them and an advance statistical test for evaluating the level of effectiveness in its implementation.

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