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Entrepreneurship education in vocational schools: an Indonesian model

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ABSTRACT

Vocational education is crucial in bridging the gap between educational outcomes and labor market demands, significantly impacting employment rates and career prospects. The purpose of the study was to identify the acceptability of the entrepreneurship education model in Indonesian vocational schools. This paper explores the importance of vocational education in equipping individuals with job-ready skills, addressing challenges like long-term unemployment, and literacy skill disparities. It emphasizes the integration of entrepreneurship education to foster entrepreneurial intentions, competencies, and behaviors, crucial for sustainable economic growth, particularly in Indonesia. Utilizing a development model based on Borg and Gall, the study involves needs assessment, product development, and evaluation to craft an effective entrepreneurship education framework for vocational schools. Insights from vocational education experts, entrepreneurship practitioners or teachers, and entrepreneurs are integral to developing this model. The findings show that entrepreneurship education is acceptable to be implemented in Indonesian vocational schools. The proposed model focuses on characteristic Indonesian mindset formation, practical entrepreneurial skills, and active industry collaboration, aiming to prepare graduates for both employment and self-employment. This research has implications for the transformation of vocational education in Indonesia by providing a strong framework that supports graduates' transition to the world of work and encourages entrepreneurial efforts, thereby contributing to broader economic development and innovation.

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1. INTRODUCTION

Vocational education equips individuals with the necessary skills for immediate employment. It addresses unemployment concerns and enhances the likelihood of securing employment in skilled positions. However, it may deter some individuals from pursuing higher education and professional opportunities [1], [2]. Notably, empirical evidence suggests that vocational education yields superior labor market outcomes compared to academic pathways, resulting in better attainment and early career prospects [3]–[5].

Incorporating work-based learning within vocational education, such as through teaching factories, enhances graduates' competitiveness and ensures the acquisition of job-ready skills [6].

Despite its advantages, vocational education faces several challenges. While some studies indicate a reduction in unemployment rates and enhanced initial employment opportunities, others suggest potential long-term unemployment risks, particularly among specific demographic groups [7]–[9]. Furthermore, graduates from vocational tracks often exhibit literacy skill disparities, and enjoy short-term employment advantages, but may face long-term employment disadvantages compared to their counterparts from general tracks [2]. During economic downturns, vocational graduates experience an initial 6% wage decrease, although this effect diminishes after six years. Nevertheless, vocational graduates are persistently more likely to experience job mismatches and work for lower-paying employers [10].

Entrepreneurship emerges as a viable avenue for vocational school graduates. Studies indicate that entrepreneurship education fosters entrepreneurial intention, competence, behavior, and skills among vocational school graduates, thereby contributing to employment generation, economic growth, and sustainable development [11], [12]. Entrepreneurship education programs are positively related to student's entrepreneurship inspiration and intention in vocational schools [13]. Moreover, entrepreneurship education in secondary vocational schools enhances entrepreneurial intention and competence, with motivation, leadership, and enterprise knowledge serving as mediating factors [14]. Such education facilitates the development of entrepreneurial behavior across various vocations and offers benefits under diverse educational settings and modes [15].

In Indonesia, efforts have been underway to cultivate the entrepreneurial spirit among vocational school students. One such initiative involves the implementation of a learning model featuring modules focused on character-based business motivation and case studies highlighting self-confidence and entrepreneurial drive [16]. Nevertheless, this endeavor encounters obstacles, notably the limited popularity of module-based learning among present-day students. Moreover, Indonesia's literacy rates are declining across different educational levels and subjects [17], [18]. Against this backdrop, our research endeavors to devise a model for entrepreneurship education tailored to vocational schools in Indonesia.

2. METHOD

This research employs a development model adapted from the Borg and Gall framework, involving systematic steps that include needs assessment, product development, and product evaluation. The design aims to create a productive teacher entrepreneurship learning model tailored for vocational schools. Each phase of the model is meticulously planned and executed to ensure the effectiveness and relevance of the final product. The description of the research method is depicted in Figure 1.

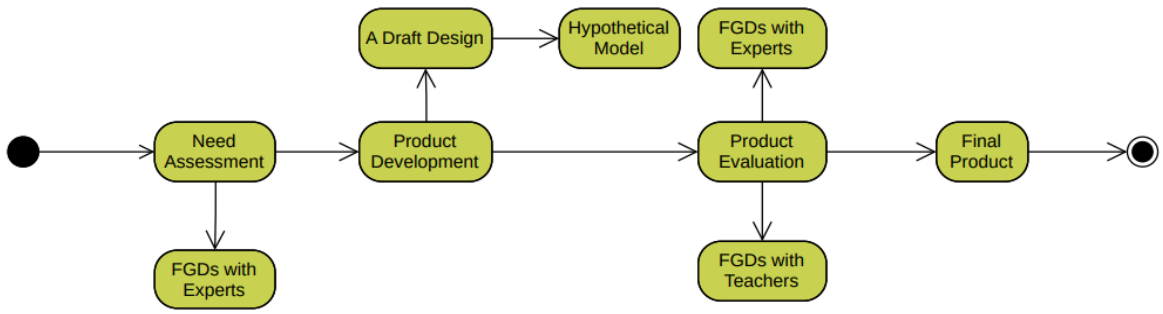

Figure 1. Diagram flow of research method

This section presents a description of the details in Figure 1. The participants in this study include vocational education experts, entrepreneurship practitioners or teachers, and entrepreneurs. Each assessment field consists of two experts. The selection of participants was strategic, involving those with significant insights and experience in entrepreneurship education within vocational settings. Their contributions were crucial in shaping and validating the learning model.

We employed focus group discussions (FGDs) for the research instruments. The FGDs were designed to gather comprehensive insights during the needs assessment and product validation phases. An instrument was prepared based on FGD findings to conduct a needs assessment among the school principals, teachers, and students. These instruments were vital in collecting qualitative data to inform the development

and refinement of the learning model. The FGD in this study includes several stages, starting from determining objectives, compiling a list of questions, collecting research subjects, presenting questions, summarizing the contents of the discussion, and interpreting data.

The research procedures involved multiple phases. In the needs assessment phase, FGDs with experts helped identify the requirements for the entrepreneurship education model. Based on these discussions, a needs assessment instrument was developed and administered. In the product development phase, we created a draft design of the learning model. This draft was then subjected to further FGDs during the product evaluation phase, where it was validated by experts and users, including teachers and school principals, ensuring its practicality and relevance.

Data analysis techniques were primarily qualitative. The verbal data collected from FGDs were systematically analyzed to extract meaningful insights. The analysis focused on identifying common themes and patterns that emerged from the discussions and interviews. This qualitative approach allowed for a detailed understanding of the needs and preferences of the participants, facilitating the development of an effective entrepreneurship education model for vocational schools. We used triangulation of data sources to minimize bias and increase the accuracy of findings by comparing and contrasting information obtained from multiple perspectives.

3. RESULTS AND DISCUSSION

This research aims to develop an entrepreneurship education model for vocational schools by considering validation and ease of implementation. The stages include needs assessment, product development, and product evaluation, which will ensure the relevance and effectiveness of the model in meeting specific challenges and needs in entrepreneurship education in vocational settings. Hopefully, the results of this study can provide practical guidance for vocational schools to improve their entrepreneurship learning.

The first part, the need assessment exposes the user needs on the product to be developed. The results of the needs study highlighted substantial challenges in the development of entrepreneurship programs in vocational schools. The lack of numbers and qualifications of entrepreneurship teachers is a focal point, with the mismatch of teachers' educational backgrounds as a fundamental problem. The proposed solutions, such as collaboration with entrepreneurial practitioners, addition of entrepreneurial management knowledge, and development of entrepreneurial teachers in IT, indicate an attempt to overcome these weaknesses. In addition, changes in curriculum and learning methods, along with entrepreneurial character building in students, are important to ensure optimal preparation for vocational high schools graduates to enter the workforce or develop their own businesses.

Another challenge encountered is the expectation that vocational high schools graduates can directly contribute to the world of work or entrepreneurship. Changes in curriculum and learning methods are important to provide better opportunities for students to practice their entrepreneurial skills. Thus, the implementation of the suggested solutions is expected to improve the competency of entrepreneurship teachers, the preparation of vocational high schools graduates to face the challenges of the world of work, and the overall effectiveness of entrepreneurship learning in vocational high schools. The second section, product development, describes the initial product developed and its contents. The conceptual model of vocational entrepreneurship learning involves three main elements, namely mindset, mental entrepreneurship, and entrepreneurship skills. This conceptual model can be seen more clearly in Figure 2.

Mindset formation and entrepreneurship mentality are classified as soft skills that must be internalized through the curriculum, which involves the acceptance and application of appropriate values and attitudes. The teacher's task in this regard is to change the students' paradigm from simply aspiring to “become an employee” after graduation, to an attitude that leads to “creating jobs” after graduation, where they have the potential to become independent entrepreneurs and leaders in their own businesses.

Furthermore, with adequate mastery of soft skills, students will also be able to better develop entrepreneurship abilities. Mental aspects of entrepreneurship include honesty, discipline, hard work, creativity, and innovation. In addition, strong motivation, high commitment, curiosity, communication skills, and the ability to seek opportunities are also essential soft skills for aspiring entrepreneurs. Equally important are the mastery of networking skills, mastery of information technology, the ability to collaborate, the ability to work independently, responsibility, and leadership skills, all of which are absolute requirements for an entrepreneur.

In the next stage, entrepreneurship skills, students are expected to be able to apply the knowledge and skills they have learned in entrepreneurial practice. Therefore, it is important for learning to emphasize a product-based approach, where students are invited to be directly involved in the process of making and marketing products. As a result, students are expected to remain active in entrepreneurship after graduating from vocational high schools.

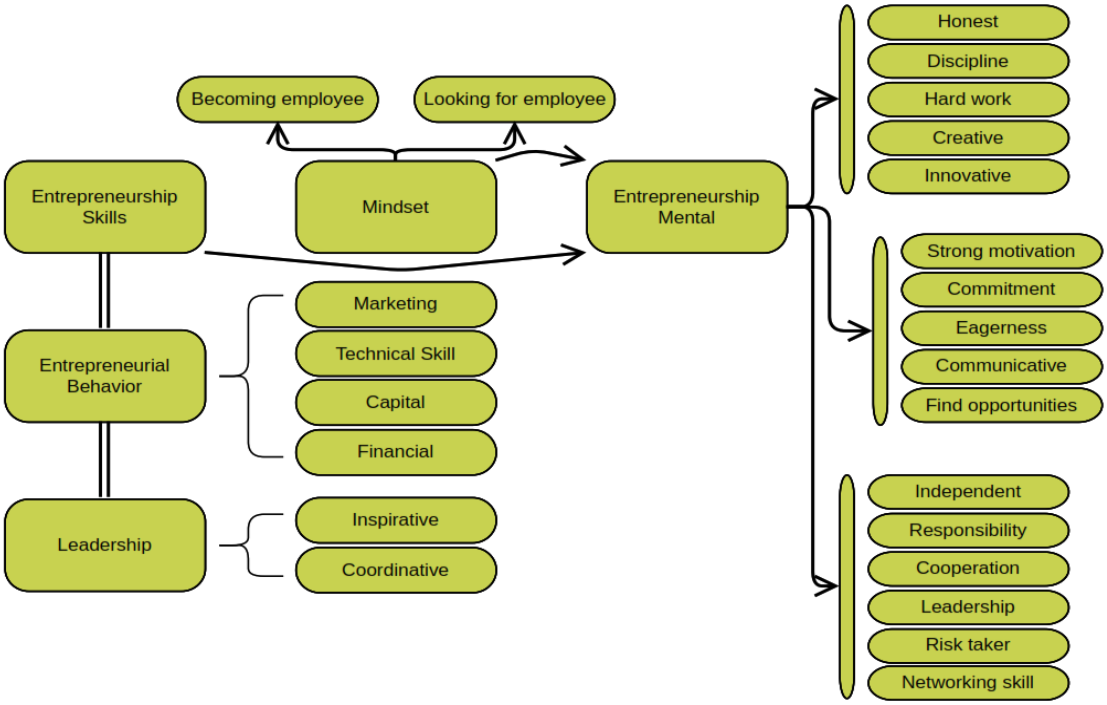

Figure 2. The model of entrepreneurship education

In the third section, we evaluated the draft product that had been developed. Table 1 describes the expert agreement on the entrepreneurship education model using the inter-rater reliability (IRR) coefficient of Cohen's Kappa. Table 1 shows an agreement for experts in validating product research.

Table 1. Description of expert agreement

No	Assessment aspects	Value	Category
1	Construction of entrepreneurship education	1	Very good deal
2	Entrepreneurship education practices	1	Very good deal
3	Operationalization of the entrepreneurship model	1	Very good deal

Table 1 presents numerical data related to product acceptability based on assessments by experts, entrepreneurship practitioners, and teachers. The results of the data analysis show that the assessors, experts, entrepreneurial practitioners, and teachers, each agree on the product's acceptability. In other words, the entrepreneurship education model can and is ready to be implemented in vocational schools in Indonesia.

The first evaluator assessed the substance of the entrepreneurial education model for vocational schools. Two individuals evaluated the entrepreneurial education model for vocational schools. Evaluator 1, in their assessment, stated that i) they agree with the entrepreneurial learning concept proposed by the researcher. The suggestions provided were related to the implementation in schools, which include ii) the formation of a mindset and entrepreneurship mentality that can be linked to character education, iii) the need to emphasize product-based learning, and iv) the continuation of entrepreneurial skills after graduating from vocational high school. Meanwhile, evaluator 2 highlighted various aspects related to entrepreneurial activities. In this regard, what needs to be prepared are theoretical knowledge about entrepreneurship, practical entrepreneurship experience, and a supportive environment for the growth of entrepreneurs.

In addition to the substance validation by experts, practitioners also carried out the evaluation. The practitioners were teachers actively teaching at vocational high schools. Besides being teachers, they are also entrepreneurs. The model proposed was accepted by the evaluators. However, in its implementation, not all aspects need to be carried out in the school. Only certain departments, such as business management, culinary arts, tourism, and hospitality, can apply the proposed concept.

Expert judgment in this study needs to be confirmed through direct user trials to ensure the validity and effectiveness of the developed product. Conducting trials on real users provides a clearer picture of how the product functions in real conditions and how users respond to the product. To get more comprehensive

results, it is recommended that future research not only conduct small-scale trials, but also expand to large-scale trials. This step is expected to provide more representative and reliable data in evaluating the advantages and disadvantages of the product, as well as in providing more accurate recommendations for further development.

Entrepreneurship education plays a pivotal role in equipping individuals with the necessary mindset, mental entrepreneurship, and entrepreneurship skills to navigate the complex and ever-evolving entrepreneurial landscape. This type of education is crucial for preparing individuals to effectively engage with the dynamic and challenging world [19], [20]. By encouraging a proactive attitude, creativity, and the drive to innovate, entrepreneurship education lays a strong foundation for successful business ventures. It helps individuals adapt to changes, seize opportunities, and overcome obstacles in their entrepreneurial journeys [21], [22]. This comprehensive approach aims to foster an entrepreneurial spirit and provide a solid foundation for successful entrepreneurial ventures [23], [24].

Mindset is a crucial aspect of entrepreneurship education, shaping how individuals perceive and approach opportunities, and challenges [25], [26]. An entrepreneurial mindset, characterized by a proactive and innovative approach, a willingness to take calculated risks, and the ability to recognize and exploit opportunities, is essential for success [27], [28]. This mindset enables individuals to identify and capitalize on market gaps, generate novel ideas, and adapt to dynamic business environments [29]. To cultivate this mindset, entrepreneurship education programs expose students to real-world case studies [30], encouraging critical thinking [31], and promoting a solutions-oriented approach to problem-solving [32].

Mental entrepreneurship, on the other hand, focuses on the cognitive processes and psychological factors that influence entrepreneurial behavior and decision-making. Self-efficacy, which refers to an individual's belief in their ability to accomplish tasks and overcome challenges, is a key determinant of entrepreneurial success [33], [34]. Resilience, the ability to persevere through setbacks and adversities, is another critical aspect of mental entrepreneurship [35]. Emotional intelligence, which encompasses self-awareness, self-regulation, motivation, empathy, and social skills, facilitates effective communication, networking, and team management [36]. Entrepreneurship education programs aim to develop these mental attributes through various exercises, simulations, and experiential learning opportunities [19], [37].

In addition to fostering an entrepreneurial mindset and mentality, entrepreneurship education emphasizes the development of a wide range of skills essential for successful entrepreneurial ventures. This type of education covers various competencies, including entrepreneurial skill [38], [39] and leadership [40]. Research findings indicate that entrepreneurship education can specifically enhance these entrepreneurial skills [41]–[43]. Individuals who undergo entrepreneurship training are better equipped to succeed in their entrepreneurial endeavors [21], [44].

Entrepreneurship education has gained significant traction in recent years, with a growing recognition that entrepreneurial competencies are crucial for fostering innovation, economic growth, and job creation. The notion that competency in entrepreneurship education itself constitutes an entrepreneurial skill has sparked much debate among scholars and practitioners [21], [30]. Entrepreneurial competencies encompass not only the knowledge and skills required for business start-ups but also the ability to identify and pursue opportunities, think critically, and navigate uncertain environments [45]. In this context, proficiency in entrepreneurship education can be viewed as a meta-competency that enables individuals to develop and hone these essential entrepreneurial skills [38], [46].

Furthermore, several studies have highlighted the importance of experiential learning and practical application in entrepreneurship education [47], [48]. Engaging in entrepreneurship education programs that emphasize hands-on experiences, such as business simulations, case studies, and real-world projects, can foster the development of entrepreneurial competencies. The ability to effectively design and deliver such experiential learning opportunities requires a distinct set of competencies that blend pedagogical expertise with entrepreneurial mindsets and practices [49], [50]. Consequently, competency in entrepreneurship education can be considered an entrepreneurial skill, enabling educators to create immersive and transformative learning experiences that nurture the next generation of entrepreneurs.

The next component that is part of entrepreneurial skills is leadership. Leadership is a crucial component of entrepreneurial skills, as it involves inspiring and guiding a team towards achieving a shared vision [51], [52]. Successful entrepreneurs must possess strong leadership qualities to navigate the challenges and uncertainties of starting and running a business [53]. Effective leadership plays a pivotal role in fostering innovation, motivating employees, and driving organizational success [54].

Entrepreneurial leadership encompasses a range of skills, including strategic thinking, decision-making, communication, and team-building. Leaders must be able to articulate a compelling vision, rally support, and empower their team members to contribute their best efforts [55]. Additionally, entrepreneurs need to adapt their leadership style to the evolving needs of their organization [56]. By demonstrating resilience, emotional intelligence, and a growth mindset, entrepreneurial leaders can navigate the challenges of launching and scaling a venture while fostering a positive and productive work environment [57], [58].

Entrepreneurship education programs employ a variety of pedagogical approaches to foster the development of these aspects. Traditional classroom-based learning is often combined with experiential learning opportunities [47], [59], such as internships, business simulations, and live case studies. Additionally, many programs encourage students to engage in entrepreneurial activities [60], such as developing business plans, pitching ideas, and participating in entrepreneurship competitions.

Moreover, entrepreneurship education programs frequently partner with industry leaders, successful entrepreneurs, and experienced mentors to offer students practical insights and guidance. Global partnership is important in entrepreneurship education programs [61]. These collaborations include guest lectures, mentorship initiatives, and networking events, all designed to foster the exchange of knowledge and experiences [62], [63]. Through these opportunities, students can learn directly from seasoned professionals, gaining valuable perspectives that enhance their entrepreneurial skills [64].

Theoretical knowledge, practical experience, and industry collaboration play a crucial role in empowering individuals to achieve significant accomplishments in a dynamic business environment. Theoretical knowledge provides a strong conceptual foundation, enabling individuals to understand the fundamental principles governing business behavior and strategic decision-making [65]. When combined with practical experience, individuals can apply these theories in real-world contexts, developing analytical skills and adaptability essential for navigating complex business challenges [66]. Additionally, collaboration with industry offers opportunities to engage directly with current practices and market trends, enriching their understanding of business dynamics and opening avenues for innovation and creative solutions [67]. By integrating these three elements, individuals are not only equipped to adapt to the rapid changes in the business world but are also empowered to initiate and lead positive transformations.

By integrating mindset development, mental entrepreneurship, and entrepreneurship skills, entrepreneurship education programs aim to equip individuals with the necessary tools and mindset to navigate the challenges and seize the opportunities of entrepreneurship. This holistic approach not only prepares students for entrepreneurial pursuits but also fosters transferable skills that are valuable in various professional contexts. It is important to note that entrepreneurship education is not solely focused on creating entrepreneurs but also cultivates essential skills for personal and professional growth. Individuals who complete entrepreneurship education programs often exhibit enhanced problem-solving abilities, critical thinking, adaptability, and a heightened sense of self-efficacy, enabling them to thrive in diverse professional environments.

4. CONCLUSION

Entrepreneurship education is pivotal in fostering an entrepreneurial spirit and equipping individuals with the mindset, mental entrepreneurship, and skills necessary for successful entrepreneurial endeavors. By combining theoretical knowledge with practical experiences and industry collaboration, these programs aim to develop well-rounded individuals capable of identifying opportunities, navigating challenges, and driving innovation in a constantly evolving business landscape. The research highlights that effective entrepreneurship education, combining theory, practical experience, and industry collaboration, is essential for enhancing academic knowledge. This encourages further research to create more adaptable educational models that keep up with changing business environments. Additionally, it could lead to new theories connecting entrepreneurship education with business success in different cultural and economic contexts, and drive innovation in teaching methods and curricula. The study has limitations such as using a potentially rigid research model and having an unspecified sample size, which affects generalizability. Additionally, issues like subjectivity in needs assessment and lack of a control group introduce bias and weaken the study's findings.

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