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Developing Entrepreneurship Skills among SMK PK Surabaya Students through a Digital Entrepreneurship Mindset Workshop

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Abstrak

Sistem pendidikan Indonesia masih sangat berorientasi pada pembelajaran kognitif dan teoritis, sehingga memberikan peluang yang terbatas bagi siswa untuk menerapkan keterampilan kewirausahaan secara praktis. Program kewirausahaan di sekolah menengah kejuruan yang ada cenderung menekankan kompetensi bisnis digital, namun jarang mengintegrasikan kesiapan hukum secara praktis, khususnya terkait dengan formalitas usaha. Sebagai upaya menjembatani kesenjangan tersebut, Workshop Pengembangan Mindset Kewirausahaan Digital diselenggarakan dengan tujuan meningkatkan kapasitas kewirausahaan 309 siswa SMK PK Surabaya melalui pelatihan dan simulasi bisnis, khususnya terkait persyaratan legalitas, pengembangan produk, dan strategi pemasaran. Dengan mengadopsi pendekatan Participatory Action Research (PAR), program ini menggabungkan sesi pemaparan materi dengan simulasi bisnis yang diselaraskan dengan kerangka Program Kreativitas Mahasiswa—Kewirausahaan (PKM-K). Efektivitas program dievaluasi menggunakan instrumen pre-test dan post-test untuk mengukur perubahan pemahaman kewirausahaan siswa. Hasil menunjukkan bahwa siswa pada awalnya kurang memiliki pengetahuan terhadap Nomor Induk Berusaha (NIB) sebagai prasyarat hukum dalam mendirikan usaha di Indonesia. Temuan ini menegaskan pentingnya integrasi aspek kesadaran hukum dalam pendidikan kewirausahaan vokasi guna memperkuat kesiapan siswa dalam mengembangkan usaha yang formal dan berkelanjutan.

Kata Kunci: legalitas bisnis, PKM-K, kewirausahaan, workshop, simulasi bisnis.

Abstract

The Indonesian education system remains heavily oriented toward cognitive and theoretical learning, providing limited opportunities for students to apply entrepreneurial skills in practice. Existing vocational entrepreneurship programs tend to emphasize digital business competencies but seldom incorporate practical legal readiness, particularly business formalization. To address this gap, the Workshop on Developing a Digital Entrepreneurship Mindset was conducted to enhance the entrepreneurial capacity of 309 students at SMK PK Surabaya through training and business simulations, particularly about legal requirements, product development, and marketing. Using a Participatory Action Research (PAR) approach, the workshop combined enrichment sessions with business simulations aligned with the Student Creativity Program - Entrepreneurship (PKM-K). Program effectiveness was evaluated using pre-test and post-test instruments to assess changes in students' entrepreneurial understanding. The results show that students initially had limited awareness of the Business Identification Number (NIB) as a legal prerequisite for establishing a business in Indonesia. This indicates that integrating legal awareness into vocational entrepreneurship education can better prepare students for formal and sustainable business development.

Keywords: business legality, PKM-K, entrepreneurship, workshop, business simulation.

INTRODUCTION

Entrepreneurial success is not solely dependent on the creation of innovative ideas

but also on the ability to execute and realize those ideas in real-world contexts (Jardim, 2021; Shenhar et al., 2020). Once an idea is conceived, entrepreneurs face a range of significant challenges, particularly in selling, marketing, and managing their ideas in a competitive marketplace (Sharma & Sagar, 2023). In Indonesia, the challenges associated with developing the entrepreneurial sector are also substantial (Maksum et al., 2020). According to data from the Global Entrepreneurship Monitor (GEM), Indonesia's entrepreneurship ratio stands at only 3.47%, significantly lower than neighboring countries such as Malaysia (4.74%) and Singapore (8.76%) (Sutrisno, 2022). This low figure is not merely the result of economic limitations or access to capital, but also reflects a lack of emphasis on entrepreneurial skill development within the national education system (Susantiningrum et al., 2023). The current curriculum does not sufficiently foster essential entrepreneurial skills such as critical thinking, creativity, innovation, negotiation, and risk management (Zamrudin & Yulianti, 2020).

Pambudi and Harjanto (2020) argue that Indonesia's educational system remains predominantly focused on cognitive and theoretical aspects, offering limited encouragement for the practical application of entrepreneurial competencies. As a result, younger generations are often ill-equipped to face the realities of the business world, such as marketing products, pitching ideas, and securing funding (Galvao et al., 2020). This situation underlines the urgent need for a more balanced educational approach, one that prioritizes not only cognitive development (Lovden et al., 2020) but also the practical entrepreneurial skills necessary for enhancing graduate employability (Dzisi et al., 2018). According to Saptono et al. (2020), educational institutions that emphasize practical competencies are essential in equipping students with relevant skills for future challenges.

Astuti et al. (2017) conducted a study in several vocational high schools (SMKs) in Brebes, revealing that approximately 60% of their graduates remained unemployed after graduation. The study investigated the influence of entrepreneurial knowledge, soft skills, and job training on students' work readiness. The findings indicated that these factors significantly contributed to enhancing the employability of students at SMK Karya Bhakti Brebes. Based on these results, the researchers recommended that vocational schools utilize such insights as a strategic foundation for improving education quality.

In response to these findings, there is a pressing need to expand the implementation of entrepreneurship workshops and hands-on skill training for vocational school students, as current efforts remain limited and inconsistently applied. These programs are substantial not only as a supplement to theoretical knowledge but also to cultivate entrepreneurial mindsets and behaviors among students (Handayati et al., 2020). These initiatives are expected to enhance students' interest and competence in entrepreneurship (Bocanegra, 2020), thereby potentially increasing Indonesia's entrepreneurship ratio and contributing to more inclusive economic growth (Nurmalia & Muzayanah, 2018). Integrating entrepreneurial competencies into formal education, accompanied by relevant practical training, is essential to prepare Indonesia's youth to become resilient, innovative, and competitive entrepreneurs in the global era (Amalia & Korflesch, 2022).

Prior studies on digital entrepreneurship in vocational high schools (Rizal et al., 2022; Mahmudah et al., 2023; Setiyawan & Ulfatun, 2023) primarily emphasize students' attitudes, competencies, and general implementation of digital business activities, but do not integrate legal readiness, particularly business formalization, such as obtaining a Business Identification Number (NIB) as part of entrepreneurship training. Consequently, there is a lack of programs that combine digital entrepreneurship skills with practical legal awareness to prepare students for legitimate and sustainable business operations.

As a step toward addressing this issue, the Workshop on Developing Digital Entrepreneurship Mindset was carried out at SMK PK Surabaya. The primary objective of this community service is to advance the

development of entrepreneurial competencies among vocational school students, particularly in preparing and executing business proposals for the Student Creativity Program - Entrepreneurship (PKM-K). This initiative contributes to the field by providing a replicable service model that bridges theoretical entrepreneurship education with practical experience, specifically tailored for vocational high school students.

MATERIALS AND METHODS

The method employed in the Workshop on Developing Digital Entrepreneurship Mindset was Participatory Action Research (PAR), an approach that emphasizes active collaboration between researchers and participants. This approach involves iterative cycles of planning, action, observation, and reflection in which participants are treated as co-researchers who contribute directly to the generation of knowledge through practical engagement (Savin-Baden & Wimpenny, 2007). The program was implemented through a pre-test to assess students' initial knowledge, followed by an enrichment session that provided essential business insights and addressed participants' limited understanding of funding and entrepreneurship, continued with a business simulation as a mock implementation of the concepts learned, and concluded with a post-test to reflect on knowledge gained and overall program effectiveness. This approach enables participants to examine the challenges faced, analyze those issues, formulate relevant solutions, and evaluate the decisions and actions previously undertaken (Feldman, 2023).

The workshop participants comprised 159 eleventh-grade students and 150 twelfth-grade students, and the program was implemented through several structured stages: (1) coordination with SMK PK Surabaya; (2) preparation of materials by the organizing team; (3) implementation of the program; and (4) reporting. The main objective of the workshop was to enhance entrepreneurial competencies among students of SMK PK Surabaya by delivering entrepreneurship-related content, sharing insights on securing funding through the Student Creativity Program - Entrepreneurship (PKM-K), and facilitating a business simulation. The expected outcome was that students would not only develop and market innovative products but also acquire funding from national competitions to grow their ventures.

The following outlines each stage of the Workshop on Developing Digital Entrepreneurship Mindset:

1. Coordination: The organizing team coordinated with SMK PK Surabaya to determine the date, venue, and format of the event. Both parties agreed that the workshop would consist of an enrichment session and a business simulation activity.
2. Material Preparation: The team developed enrichment session materials under the theme Preparation and Implementation for Securing PKM Entrepreneurship Funding. This material covers the stages of identifying community problems, determining products or services, adjusting product aspects, selecting target markets, and conducting competitor analysis.
3. Program Implementation: The workshop was held on September 5, 2024, from 07:00 to 13:00 WIB and was attended by 11th and 12th-grade students from SMK PK Surabaya. The program began with a pre-test to assess students' baseline knowledge. The team then delivered the enrichment session on preparing and implementing strategies to obtain PKM-K funding, aimed at cultivating students' interest in entrepreneurship.

Following the session, a business simulation was conducted. The simulation began with an overview of the rules. Students were given an initial capital and tasked with determining a product to develop. This capital was used to purchase raw materials provided by the organizing team. During the simulation, students were also required to respond to dynamic market changes announced in real-time.

After completing the production phase, students marketed their products to other groups or to the organizers, with

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opportunities to set prices and negotiate. Two winning teams were selected based on profitability and creativity, and awards were presented. Before concluding the event, students completed a post-test to evaluate knowledge gained and the overall effectiveness of the workshop.

4. Reporting and Outputs: The workshop produced several outputs, including innovative student product prototypes and pre-test/post-test results, which served as indicators for evaluating the program's impact and effectiveness.

The organizing team administered pre-test and post-test assessments to measure the understanding of SMK PK Surabaya students regarding business knowledge before and after participating in the Workshop on Developing Digital Entrepreneurship Mindset. Both the pre-test and post-test consisted of 10 identical multiple-choice questions, as presented in Table 1.

Table 1. Instrument of Evaluation

No.	Questions
Q1	What is the first step when submitting business proposal? a) Preparing product materials b) Identifying the core problem c) Preparing financial reports d) Looking for investors Correct Answer: B
Q2	Why is it important to identify mark problems before developing a product? a) To understand the latest trends b) To ensure the product has a clear mark demand c) To set an appropriate price d) To attract media attention Correct Answer: B
Q3	Why is research and development importa before starting product production? a) To reduce production costs b) To develop the right formula and design c) To attract potential investors d) To comply with government regulations Correct Answer: B
Q4	What should be highlighted in a proposal secure funding? a) The team's readiness to start production ar operations b) The potential for high profits c) A low selling price d) The product's popularity on social media Correct Answer: A
Q5	What does "competitor analysis" mean in tl context of proposal writing? a) Identifying the strengths of competi products b) Identifying the weaknesses of competi products to address them c) Comparing your product with competito products d) All of the above Correct Answer: D
Q6	What is the benefit of comparing your produ to competitors' in a proposal? a) To highlight the uniqueness and potential your product b) To avoid direct competition c) To justify a higher selling price d) To make the product more attractive consumers Correct Answer: A
Q7	What is meant by "market size" and why is it important? a) The physical size of the product b) The potential number of consumers who might purchase the product c) The number of products that can be produced d) The geographic area of product distribution Correct Answer: B
Q8	What is meant by "target market"? a) Everyone who is able to buy the product b) A specific group of consumers most likely to purchase the product c) The global market d) Main competitors in the industry Correct Answer: B
Q9	What is the first document that must be processed when starting a business in Indonesia? a) Business Identification Number (NIB) b) BPOM and P-IRT licenses c) Intellectual Property Rights (IPR) d) Patent Correct Answer: A
Q10	Which of the following are considered effective product sales techniques? a) Online selling b) Personal selling c) Word-of-mouth marketing d) All of the above Correct Answer: D

RESULTS AND DISCUSSION

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The results show that students had limited understanding of entrepreneurial concepts before the workshop, but demonstrated clear improvement after completing the enrichment session and business simulation. The improvements are observed in knowledge related to proposal preparation, competitor analysis, and business licensing for both grade levels. The Workshop on Developing Digital Entrepreneurship Mindset began with an enrichment session, during which the organizing team presented a module titled Preparation and Implementation for Securing PKM Entrepreneurship Funding to 11th and 12th-grade students of SMK PK Surabaya. The session opened with an introduction to the organizing team, who were participants in the 2024 Program Kreativitas Mahasiswa (PKM), or Student Creativity Program, followed by an explanation of the program's system and objectives.

The Student Creativity Program (PKM) is an initiative by the Directorate General of Higher Education, Research, and Technology (Ditjen Diktiristek), managed by the Directorate of Student Affairs (Belmawa), and serves as an implementation of the Tri Dharma of Higher Education. This program encourages students to develop and implement creative and innovative ideas, while also applying their academic knowledge to benefit society. Generally, PKM can be understood as research or applied activities conducted by students with government support (Sukino, 2024). PKM consists of several fields, one of which is entrepreneurship. The PKM-K (Student Creativity Program - Entrepreneurship) focuses on the development of entrepreneurial activities. In this program, student teams are trained to create business products that meet market or community needs. It provides a platform for students to transform creative ideas into innovative products while developing their entrepreneurial skills, insights, and experience. The organizing team also provided a brief overview of proposal submission procedures, funding, business implementation, and the Pekan Ilmiah Mahasiswa Nasional (PIMNAS).

A key aspect of the proposal submission stage is determining the product to be marketed. The student team must conduct an analysis of market needs and opportunities, followed by the development of a business commodity aimed at meeting those market demands. The PKM-K business commodity may take the form of either goods or services, and should reflect the team's creativity and expertise. Several important factors must be considered in product development, including taste, form, packaging design, product quality, and safety.

The next step involves Research and Development (R&D) to formulate the optimal product concept. Additionally, the student team must analyze the R&D results by comparing them with competitor products. Once the product is designed, the team may draft a PKM-K proposal detailing the developed product concept, the R&D process, and the competitor analysis. This demonstrates the team's readiness to initiate production and business operations upon receiving funding from the Ministry of Education.

Following the enrichment session, the organizing team guided the students through a business simulation based on the business life cycle concept. The simulation began with an orientation and explanation of the game rules and team formation. The organizing team prepared all materials and transaction tools required during the simulation. Each student group was tasked with selecting a simple product to develop using the provided materials, ensuring that no two groups selected the same item, in order to highlight the creativity and uniqueness of each team.

Once the product was selected, each group received initial capital to purchase raw materials from the organizing team. Students were given 40 minutes to develop their product based on their original plan (Figure 1). Throughout the simulation, the organizing team introduced various market change scenarios, serving as unexpected challenges for students to address in real-time.

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Figure 1. Business Simulation Process

After completing their products, each group was required to sell their products either to other student groups or to the organizing team. During this phase, students were encouraged to develop pricing strategies and negotiate in order to maximize their profits. At the end of the simulation, the organizing team calculated each group's total profit and announced the winners based on the highest profit and the most creative product (Figure 2). The session concluded with a discussion and evaluation, in which students reflected on lessons learned from the simulation, such as managing finances during procurement, responding to market changes, and devising effective sales strategies.



Figure 2. Final Products and Winning Student Groups from SMK PK Surabaya

To evaluate the program's effectiveness, the organizing team conducted pre-test and post-test assessments to measure students' understanding of entrepreneurship before and after participating in the Workshop on Developing Digital Entrepreneurship Mindset. The pre-test was designed to assess students' baseline knowledge prior to the workshop, while the post-test was administered following the entrepreneurship material presentation and the business simulation.

Figure 3 illustrates that only a limited number of 11th-grade students at SMK PK Surabaya were able to correctly answer questions 1, 6, and 9 in the pre-test. Question 1 assessed students' understanding of the first step in submitting a business proposal. Only 26 out of 65 students answered correctly. Similarly, many students struggled with Question 6, which asked about the purpose of comparing a product with that of a competitor in a business proposal. The correct answer, which is to highlight the uniqueness and potential of the product, was selected by only 24 out of 65 students. This indicates that many students had not yet grasped the concept of competitor analysis, which was subsequently addressed in the workshop.

Moreover, only 20 students correctly answered Question 9, which asked about the first document that must be obtained when starting a business in Indonesia. Many students mistakenly selected the National Agency of Drug and Food Control/Badan Pengawas Obat dan Makanan (BPOM) and Home Industry Food Permit/Pangan Industri Rumah Tangga (P-IRT), whereas the correct answer is the Business Identification Number/Nomor Induk Berusaha (NIB). However, after participating in the enrichment session and business simulation during the Workshop on Developing Digital Entrepreneurship Mindset, the majority of 11th-grade students at SMK PK Surabaya demonstrated improved understanding by correctly answering most of the post-test questions.

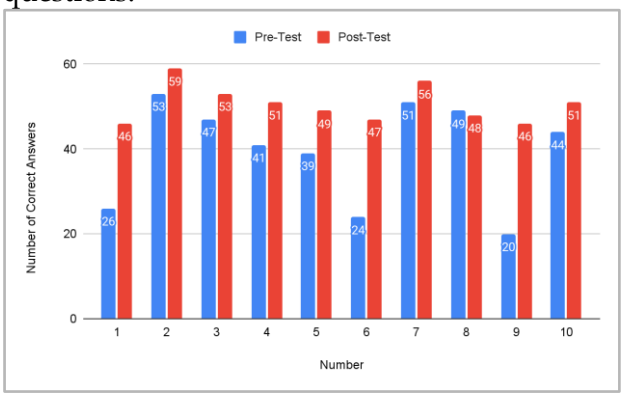


Figure 3. Pre-Test and Post-Test Results of 11th Grade Students at SMK PK Surabaya

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According to Figure 4, 12th-grade students also experienced difficulties answering pre-test questions 1, 6, and 9. Question 1 was correctly answered by only 33 out of 63 students, and question 6 by only 32 out of 63. Question 9, which asked about the initial business registration document, was correctly answered by only 18 students. Figures 3 and 4 both demonstrate a common misconception among 11th and 12th-grade students regarding the primary document required to start a business, which is the NIB. However, the post-test results for 12th-grade students showed marked improvement after participating in the Workshop on Developing Digital Entrepreneurship Mindset.

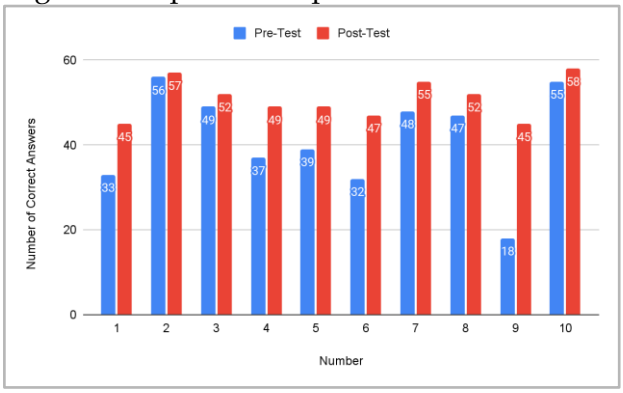


Figure 4. Pre-Test and Post-Test Results of 12th Grade Students at SMK PK Surabaya

As a whole, the post-test scores demonstrated a significant increase compared to the pre-test, indicating an improvement in both entrepreneurial knowledge and application among the students in grades 11 and 12 following their participation in the workshop. According to feedback from the accompanying teachers and students, participants expressed increased confidence in business planning and appreciated the practical nature of the simulation. Through their participation in the activities, students stated gaining valuable insights into key entrepreneurial competencies, including the importance of teamwork, innovation, financial management, and strategic decision-making in business development. These reflections, alongside teacher observations, suggest a favorable reception from the service partner.

These findings indicate that structured entrepreneurship instruction combined with practical activities helps reduce gaps in students' basic entrepreneurial knowledge while strengthening their understanding, confidence, and decision-making in business contexts. This is consistent with Handayati et al. (2020), who report that entrepreneurship education is associated with stronger entrepreneurial intentions through the development of an entrepreneurial mindset. Their findings suggest that learning processes grounded in experience support not only knowledge acquisition but also the formation of attitudes and cognitive readiness needed for entrepreneurial engagement. The overall analysis of the program's results is presented in Table 2 below.

Table 2. Analysis of the Success Criteria for the Community Service Program

Criteria	Analysis	
	Before	After
Knowledge	The students at SMK PK Surabaya have limited understanding of market needs analysis, competitor evaluation, and business proposal preparation. Many were unaware of legal requirements, such as the NIB.	The students at SMK PK Surabaya demonstrated improved knowledge in market analysis, marketing strategies, competitor evaluation, and proposal development. Awareness of NIB as a legal prerequisite also increased.
Attitude & Awareness	The SMK PK students lacked confidence in business planning and showed limited awareness of the importance of formal regulations in entrepreneurship.	The SMK PK students expressed higher confidence in business planning, teamwork, and innovation, while also recognizing the importance of business legality.

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Skills	The SMK PK students had little experience in applying entrepreneurial concepts, particularly in responding to market changes, managing finances, and developing prototypes.	The SMK PK students developed an initial understanding of product development, pricing, negotiation, and financial management.

In line with concerns that vocational education in Indonesia remains dominated by cognitive and theoretical instruction with limited practical application (Pambudi and Harjanto, 2020) and leaves students unprepared for real business processes (Galvao et al., 2020), these findings suggest that vocational education policy should prioritize experiential entrepreneurship learning that also builds awareness of formal business procedures, particularly business legalization requirements such as the Business Identification Number (NIB).

In reflecting on the program's outcomes, the PAR process was realized through the joint involvement of students and facilitators in designing products, conducting business simulations, and evaluating results through pre-test and post-test measures, demonstrating the completion of the intended action and reflection stages. Several limitations emerged, including the limited depth of research and development, reliance on provisional prototypes, and compressed scheduling that combined 11th and 12th-grade students into a single session, thereby reducing time for product refinement and reflective discussion. Future implementation would benefit from a phased approach with extended research and development and grade-level separation to provide sufficient time for reflection, feedback, and sustained prototyping, thereby improving learning outcomes and increasing the likelihood that student products develop into formal, market-ready enterprises.

CONCLUSION

1. The Workshop on Developing Digital Entrepreneurship Mindset successfully enhanced the entrepreneurial knowledge and skills of SMK PK Surabaya students, as evidenced by significantly higher post-test scores compared to the pre-test results.
2. A key weakness identified was the limited awareness of the Business Identification Number (NIB) as the first and essential document for business establishment in Indonesia. This gap emphasizes the need for improved education on regulatory aspects of entrepreneurship at the vocational school level.
3. It is recommended that the government and educational institutions intensify efforts to promote awareness of the NIB among students and aspiring entrepreneurs. Future workshops and training should include dedicated materials on business regulations, particularly the NIB registration process.
4. The program's main limitation was the lack of in-depth research and development, as well as the reliance on provisional prototypes. Time constraints also posed challenges, since 11th and 12th-graders were scheduled together on the same day, leaving limited room for development and reflection.

Future implementations should adopt a phased approach with sessions separated by grade to allow extended research, reflection, and iterative prototyping, thereby improving learning outcomes and increasing the potential for market-ready enterprises.

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