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Nurturing New Entrepreneurs through Project-Based Learning: Building Sustainable Business among Students

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Abstract: *The urgent importance of creating businesses that have social and environmental impact has been recognized by School of Business and Management, Institut Teknologi Bandung (ITB) has established an entrepreneurship program with the goal of fostering businesses that can address contemporary social and environmental issues. This objective is achievable through project-based learning methods employed by the entrepreneurship program, particularly in courses like Sustainability Business. Research conducted through interviews with students currently running businesses and experts in student psychology and environmental studies revealed patterns in student initiatives. These patterns are influenced by students' interest in social and environmental issues, their understanding of the prevailing conditions, and the growth stages of their businesses. Notably, students in the initiation phase focus on operational optimization, while those who have already launched their businesses tend to engage in organizational transformation. Students whose businesses have entered the growth phase initiate system-building efforts, ensuring inclusivity by involving all stakeholders. Based on these patterns, appropriate methods can be developed to nurture student businesses across all stages. The aim is to create more businesses that significantly impact social and environmental issues.*

Keywords: *operational optimization, organization transformation, social and environmental initiatives, system building*

I. INTRODUCTION

Entrepreneurship has been linked positively to a country's economic growth, technological innovation, and competitiveness level. Becoming a developed country, it is needed new ventures to supported economic growth evenly (Azzahra & Dhewanto, 2015). Entrepreneurs seek and create new opportunities, take risks to capture opportunities, and realize added value. They create new jobs and increase income for employees, and they provide added value to the market. By utilizing new technologies, entrepreneurs often provide much higher added value, productivity, and economic growth to the community. Based on this fact, School of Business and Management, Institut Teknologi Bandung, has taken the initiatives for creating value added entrepreneurs. The implementation of this purpose was done by launching the Undergraduate Program in Entrepreneurship in August 2013. This program was dedicated to a new entrepreneurial generation who will build new ventures, the program focuses on latest practices and knowledge of entrepreneurship, leadership, and business management for growth and sustainability. Entrepreneurship is a disciplinary science that reveals the life cycle of an enterprise, beginning with planning, initiation, to operating and sustaining a business successfully. There are several foundations of entrepreneurship, for example, business models, theories of innovation, business planning, risk management, investment analysis, knowledge of negotiation, business law, and business establishment and development. In an entrepreneurship program, the curriculum contains unique features, including practical incubation of a business and constant guidance to help

students gain their business initiation experience. In other words, the learning process in an entrepreneurship program consists not only of studying theory and concepts, but also of gaining actual experience in running a business.

Project Based Learning (PBL)

Project-based learning (PBL) is a teaching method adopted to implement instructional reforms with certain achievements. A form of situated learning (Krajcik & Rivet, 2004), PBL is based on the constructivist finding that students gain deeper understanding of material when they actively construct their understanding by working with and using ideas. PBL's roots extend back to the work of educator John Dewey (1959), who argued that students develop personal investment in learning material if they engage in real, meaningful tasks and problems that emulate what experts do in real-world situations (Zhang, 2023).

Project Based Learning on Entrepreneurship Bachelor Program

Since all the students have to develop and maintain the business, there are several courses that conduct by project-based learning. The project is based on their own business.

One of the courses that conduct by project-based learning is Sustainability Business.

Sustainability Business is a mandatory course that held on 5th semester. Actually, this is a general course that all students have from every program, but there is specification on Entrepreneurship Bachelor Program. On this program students have to develop their business with concerning on environmental and social issues. Basically, the purpose of this course is providing the guidance for students to create valued business. Generally, Business Sustainability is a unique course that introduces students to the global mindset of future economic models towards net-zero. Regarding of this, there is three central values:

- Low carbon growth (how to create economic growth by creating a low and minimum amount of carbon).
- Resource efficiency (minimum use of natural resources, especially in the case of non-renewable natural resources).
- Social inclusivity: how to create an economy where marginalized people can feel the impact of the development of an economy.

Sustainability Business is a course delivered through the Project-Based Learning method. This course is offered in the second academic year, when students enter the business initiation phase. During this stage, students are equipped with knowledge related to business preparation, including design thinking, the use of technology for business innovation and data processing.

Armed with this knowledge, in the second year, students move into the exploring and planning phase. In this stage, students explore their business ideas by analyzing the alignment between market needs and the value they offer. Speaking of value, in the Sustainability Business course, students are encouraged to create business that demonstrate concern for social and environmental issues. This becomes one of the strengths of their businesses.

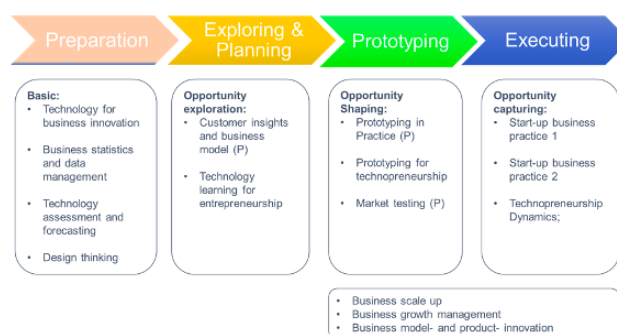


Figure 1. Series of courses for entrepreneur development (Source: Curriculum Document of SBM ITB, 2024)

The establishment of business that prioritize environmental and social initiatives is a key objective within the Entrepreneurship Program at Institut Teknologi Bandung (ITB). This endeavour is pursued gradually through the utilization of Project based Learning as the chosen methodology. In a preceding course, students have already formed business groups based on their interests and preferences. The process of group formation and selection of business industries is independently carried out by the students. Building upon this grouping, students engage in learning through the Project based Learning approach within the Business Sustainability course. Table 1 below illustrates the classification of student businesses.

| No | Company | Industry | Description |
|----|-------------|---------------------------|---|
| 1 | JumpWorks | Creative (Art Performing) | Creative agency that provide service for art performance management, workshop and talent management. |
| 2 | @dissop.id | Beauty and Health | Foaming Hand Soap Tablets with Vanilla Coconut and Fruit Punch variants and Multisurface Cleaner Tablets with Sea Salt variant. |
| 3 | Paduan Biru | Fashion | Creating unique and customized denim products from existing denim clothing or fabric. |
| 4 | Aksa | Education | provide Indonesian cultural learning kit for kids such as puzzle and book that integrated with digital visual narration animation. |
| 5 | Smangkoek | Culinary | Provide food packaging that able to securing food heat and a technology to heat the food everytime and everywhere with only a water and a heat pack |
| 6 | Tuja | Culinary | Artisan tea with original blend to helps our customers maintain their well beings |
| 7 | Chute Up | Fashion | Integration of fashion and technology wear. |
| 8 | Amusphere | Entertainment | Gaming Card, called Royal Intrigue which is a mixed game of questioning and strategy games with a Victorian Era theme. |
| 9 | Cashewast | Culinary | Cashew Snack |
| 10 | Pelihara | Pet and Hobbies | Pet's service (Food and Grooming) |
| 11 | L'Eternal | Beauty and Health | Eau De Perfumes with unique scents |
| 12 | Ahatex | Fashion | Fashion Apparel : Trendsetting designs for men, women, and children across various styles and seasons. |
| 13 | Bach | Fashion | Comfortable and Functionality Sportswear |

Figure 2. Grouping of Students' Businesses

Based on observation from the previous course, it is evident the progress of each company varies. This variation depends on different business industry conditions, available resources, and the commitment of students to their respective businesses. Creative industries continue to dominate students interests and passions in entrepreneurship.

The Project based Learning approach in this course challenges students to create innovations within their businesses and implement them using appropriate business models. These innovations are expected to have both social and environmental impact. Throughout this challenge, students receive guidance and mentoring from professors and business practitioners.

II. METHODOLOGY

The research was conducted through mentoring and interviews with student business groups. Qualitative interviews provided insights into the vision and mission of students' business groups, the challenges they faced, and their planned strategies. In-depth interviews were conducted with 13 students' groups. To ensure the validity of the interview results, experts familiar with entrepreneurship characteristics in the early stages of business development and experts knowledgeable about social and environmental initiatives often undertaken during the initial phases of a business were also interviewed. Additionally, information related to the characteristics and behaviors of generation Z was obtained from experts. This step was taken because all students in this group belong to

generation Z, which significantly influences decision-making in business.

III. ANALYSIS AND RESULTS

Based on the interview result, there is several following points emerged:

a. Student Perception of Social and Environment Initiatives

Most students initially felt perplexed when asked to incorporate social and environmental initiatives into their businesses. However, armed with an understanding of the importance of integrating environmental and social aspects into business, they realized that these issues could not be separated from economic considerations.

Consequently, students recognized that business processes involve not only economic factors but also environmental and social dimensions. Figure 3 illustrates the stages of student learning. It begins with an awareness of social and environmental issues in their surroundings, followed by exploring insights related to knowledge and conceptual frameworks that support various social and environmental initiatives. Once students grasp the actual industry context and acquire the knowledge needed to effect positive changes through business management, they develop the skills to run businesses based on economic, social, and environmental considerations. This approach is commonly referred to as the "triple bottom line" (People, Planet, and Profit) in business. Expert opinions also emphasize the importance of

progressing through several stages for successful implementation.

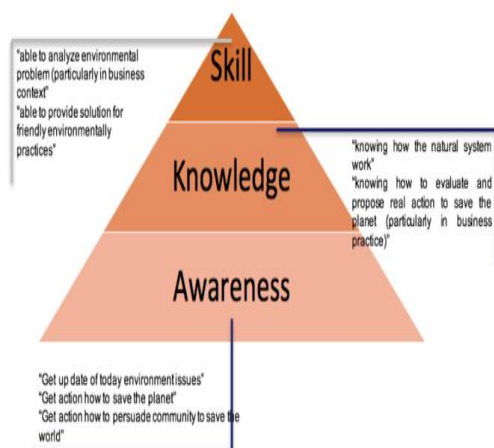


Figure 3. Students Learning Process

b. Challenges in conducting social and environmental initiatives in their business

Based on the interview results, it is evident that almost all students face challenges related to resources and building networks and ecosystems when implementing social and environmental initiatives within their businesses. Establishing a business with social and environmental initiatives requires a deep understanding of the issues involved and adequate resources. Networking and ecosystem-building are also essential to ensure sustainable processes.

Another finding is that students determine the form of initiatives based on the vision and mission they have established beforehand. There seems to be a process where students seek initiatives aligned with their vision and mission. This situation arises because some businesses have already been operating but lack social and environmental initiatives.

c. Forms of Social and Environmental initiatives to be carried out

Regarding the specific forms of social and environmental initiatives, students in the preparatory stages tend to choose technical initiatives that are often centered around the products or services they offer. For example, a student in the fashion industry might opt for an environmental initiative by replacing fabric dyes

with more eco-friendly alternatives. On the other hand, businesses that are already operational tend to strive for innovations beyond incremental changes. For instance, a student who previously sold accessories like bracelets, necklaces, and brooches might collaborate with waste plastic collectors to use unused plastic as raw material for their accessories. Among all student business groups, only one has an established business with substantial resources, particularly in environmental awareness. This fashion industry business re-evaluates common challenges and creates inclusive products by collaborating with all stakeholders, including customers. As a result, their social and environmental initiatives have a more significant impact.

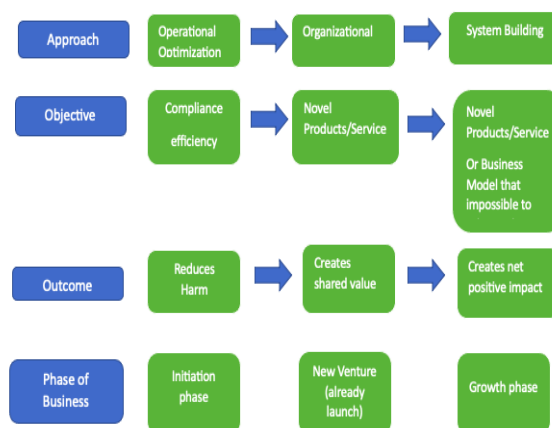


Figure 4. Stages of Initiative in Business According to Business Growth

In summary, the choice of innovation (as shown in Figure 4) for social and environmental initiatives by students is influenced by their interests, awareness of social and environmental issues, business growth stage, and available resources.

IV. DISCUSSION

Based on the results obtained, it is known that designing a business with positive social and environmental impact requires awareness first. This awareness is built through self-directed learning using the project-based learning method carried out by students. In the project-based learning process, the

role of the instructor is that of a facilitator who provides learning guidance. Meanwhile, students are given the freedom to explore facts and data encountered during the learning process. This aligns with the findings from interviews with experts, which indicate that an individual is motivated to take action due to prior awareness and understanding. Deep understanding shapes attitudes, then attitudes involve evaluating something as beneficial or not.

Besides attitudes, it is also known that through project-based learning, subjective norms or perceptions and views regarding other people's beliefs can be enhanced. This is made possible through mentoring sessions and sharing insights from guest lecturers, which contribute to a deeper understanding through different perspectives. This aligns with the theory of planned behavior proposed by Ajzen (1991). The theory of planned behavior suggests that behavior is not solely controlled by individuals but is also influenced by non-motivational factors, such as opportunities or resources needed for the behavior to occur. Therefore, the perception of ease or difficulty in performing a behavior is also considered. Observing the phenomena that occur, it can be concluded that running a business with significant impact must go through stages of attitude formation, subjective norms, and is also supported by how students perceive challenges and the level of difficulty they encounter. Furthermore, in designing impactful businesses, students exhibit a pattern when initiating their initiatives. This pattern is also determined by the business level and students' understanding of social and environmental issues. For businesses that are just entering the initiation stage, they often focus on product or service development, so the initiatives are centered around operational and technical aspects. Consequently, the resulting impact remains focused on reducing negative risks or, in other words, incremental changes. On the other hand, established businesses mostly concentrate on their business models and organization. Their initiatives are directed toward organizational innovation and potential opportunities related to social and environmental issues.

The final stage involves mature businesses that understand the industry conditions concerning social and environmental issues. These businesses tend to innovate by building systems that involve all stakeholders, creating a more open and inclusive environment. During this stage, students attempt to

create an ecosystem that cannot be achieved alone (Wirtz & Daisher, 2017).

These stages have also been proposed by Adams et al. (2016), who identified three types of innovations undertaken by businesses and organizations striving to have positive social and environmental impact."

V. CONCLUSION

Project-Based Learning (PBL) presents challenges for students as they engage in real-world business activities that result from applying conceptual learning. Through PBL, patterns emerge, revealing that students' choices are influenced by their interests, available resources, and the business growth stage. This research highlights the importance of mentoring and guidance to help students create businesses with significant social and environmental impact.

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