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The Role Of Entrepreneurship Education In Increasing Students' Interest, Creativity, And Entrepreneurial Ability: An Empirical Study On Batam Higher Education

Peran Pendidikan Wirausaha Dalam Meningkatkan Minat, Kreativitas, Dan Kemampuan Wirausaha Mahasiswa: Studi Empiris Di Perguruan Tinggi Batam

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ABSTRACT
This study aims to analyze the role of entrepreneurship education in increasing the interest, creativity, and entrepreneurial ability of students in Batam universities. The background of the research is based on the high open unemployment rate in Batam which reached 8.14% in early 2024, although Batam has great potential as an industrial and commercial area. The research method uses a mixed-method approach, with quantitative data obtained from a survey of 200 students and qualitative data from interviews with lecturers and students. Quantitative analysis was carried out using SEM-PLS, while qualitative analysis used thematic analysis. The results showed that entrepreneurship education had a significant effect on entrepreneurial interest (β = 0.62; p < 0.01), creativity (β = 0.55; p < 0.01), and entrepreneurial ability (β = 0.48; p < 0.05). Qualitative data affirms the importance of project-based learning, the involvement of industry practitioners, and campus business incubators to strengthen students' creativity and skills. The study concludes that entrepreneurship education not only shapes interests, but also increases creativity and practical skills.
Keywords: *Entrepreneurship, Interest, Creativeness, Ability, College*

ABSTRACT
Penelitian ini bertujuan untuk menganalisis peran pendidikan kewirausahaan dalam meningkatkan minat, kreativitas, dan kemampuan kewirausahaan mahasiswa di perguruan tinggi di Batam. Latar belakang penelitian ini didasarkan pada tingkat pengangguran terbuka yang tinggi di Batam, yang mencapai 8,14% pada awal 2024, meskipun Batam memiliki potensi besar sebagai kawasan industri dan perdagangan. Metode penelitian menggunakan pendekatan campuran, dengan data kuantitatif diperoleh dari survei terhadap 200 mahasiswa dan data kualitatif dari wawancara dengan dosen dan mahasiswa. Analisis kuantitatif dilakukan menggunakan SEM-PLS, sementara analisis kualitatif menggunakan analisis tematik. Hasil menunjukkan bahwa pendidikan kewirausahaan memiliki pengaruh signifikan terhadap minat kewirausahaan (β = 0,62; p < 0,01), kreativitas (β = 0,55; p < 0,01), dan kemampuan kewirausahaan (β = 0,48; p < 0,05). Data kualitatif menegaskan pentingnya pembelajaran berbasis proyek, keterlibatan praktisi industri, dan inkubator bisnis kampus untuk memperkuat kreativitas dan keterampilan mahasiswa. Studi ini menyimpulkan bahwa pendidikan kewirausahaan tidak hanya membentuk minat, tetapi juga meningkatkan kreativitas dan keterampilan praktis.
Kata Kunci: Kewirausahaan, Minat, Kreativitas, Kemampuan, Perguruan Tinggi.

1. Introduction

Entrepreneurship education has become one of the strategic instruments in facing employment challenges and increasing the competitiveness of university graduates in the global economic era. This focus is even more important considering the strategic role of universities as a printer of superior human resources who are expected to be able to create jobs, not just look for them. In Indonesia, especially in fast-growing industrial and trade areas such as Batam, this challenge is very felt. Batam, as a Special Economic Zone (SEZ), has great potential in the fields of industry, tourism, and trade. However, behind its economic potential, this region still faces serious problems in the form of a high open unemployment rate (TPT)

among university graduates. Data from the Central Statistics Agency (BPS) shows that TPT in Batam had reached 11.64% in 2021 and decreased to 8.14% in early 2024. This condition shows that the higher education system has not fully equipped graduates with relevant skills, especially entrepreneurial skills, that can bridge the gap between graduate qualifications and job market needs. This condition is an important background for this research.

Responding to this problem, the development of the entrepreneurship curriculum in Batam universities is urgent. Entrepreneurship education not only aims to provide theoretical knowledge, but must also be able to form a creative mindset, foster interest, and improve students' practical abilities to start and manage businesses. Previous studies have shown that entrepreneurship education has a significant role in shaping entrepreneurial intentions (Ajzen, 1991; Fayolle & Gailly, 2015). The strengthening of the role of entrepreneurship education is supported by more recent literature findings. Nabi et al. (2020) emphasized that entrepreneurship education plays a strategic role in increasing entrepreneurial intentions among students. Furthermore, Nowiński et al. (2020) also stated that entrepreneurship education is effective in strengthening students' creative thinking through an experiential learning approach. However, for practical capabilities, research by Shi et al. (2023) highlights that strengthening entrepreneurial skills relies heavily on university-industry collaboration and the active role of business incubators.

Therefore, this study aims to empirically analyze the role of entrepreneurship education in increasing students' interest, creativity, and entrepreneurial ability in Batam universities. Through a mixed-method approach (SEM-PLS and thematic analysis), this study will quantitatively examine the extent to which entrepreneurship education influences these three variables, as well as explore qualitative factors (such as project-based learning and incubators) that reinforce these effects. The results of the research are expected to provide practical implications for universities to design more effective learning strategies in supporting the formation of young entrepreneurs in Batam

2. Literature Review

Entrepreneurship Education

Entrepreneurship Education (EE) in higher education has transformed from just a general knowledge course to an integrated learning ecosystem (Steira et al., 2024). More than just teaching business management functions, EE currently aims to form an entrepreneurial *mindset*, which includes resilience, risk tolerance, and innovative orientation (Ahmad et al., 2023). Diktiristek (2024) emphasized the importance of *experiential learning*, which is strengthened through policies such as Merdeka Belajar Kampus Merdeka (MBKM), to ensure that students not only master theory, but also be able to implement entrepreneurial skills in real life.

The Relationship of Entrepreneurship Education to Entrepreneurial Interest

Within the framework **of the Theory of Planned Behavior (TPB)—**which is still the main foundation—entrepreneurial interest (intention) is the strongest predictor of actual entrepreneurial behavior. These interests can be positively manipulated through educational interventions. Recent studies consistently confirm EE's significant role in fostering interest. Makmur, Nur, and Jumadin (2024) in their research emphasized the positive and significant influence of entrepreneurial knowledge on student interest. In line with these findings, the Maranatha Journal (2025) reported that entrepreneurship education programs at universities directly foster students' desire and confidence to start their own businesses, which is a strong indication of the formation of interest. Thus, entrepreneurship education acts as a gateway that opens students' perception of opportunities and reduces risk perceptions, thereby increasing their intention to be entrepreneurial (Tambengi & Mohehu, 2024).

Strengthening Entrepreneurial Creativity through the Curriculum

Creativity is an essential ability in entrepreneurship because it allows for the identification of opportunities and the development of innovative solutions in business. Entrepreneurship education is designed to stimulate students' creativity through non-traditional methods. Research conducted by Fawzan and Djafar (2024) shows that the implementation of proper entrepreneurship education has a direct impact on increasing student creativity. Learning models that involve real *case studies*, *design thinking*, and *problem-solving* have proven to be effective in encouraging students to produce original ideas and ideas. This connection is strengthened by Ismail, Wonua, and Astaginy (2024), who found that the creativity possessed by students provides a clearer picture and directs their intention to be entrepreneurial, proving that creativity is a bridge between entrepreneurial knowledge and the intention to act.

Entrepreneurship Education and Practical Skills Enhancement

Although entrepreneurship education is very effective in fostering interest and creativity, the biggest challenge lies in the formation of practical skills (*entrepreneurial ability*). Post-2022 research shows that theoretical knowledge alone is not enough to drive sustainable entrepreneurial behavior (Alakaleek et al., 2023; Steira et al., 2024). Improving operational and managerial skills relies heavily on structured *experiential learning*. Shi et al. (2023) highlight that strengthening entrepreneurial skills depends on the ecosystem and university-industry collaboration. This research confirms that *the project-based learning model* and the involvement of industry practitioners should be at the core of the curriculum. Furthermore, the existence of campus business incubators is a key variable. This incubator provides support in the form of access to capital, mentor guidance, and an extensive industry network, which has proven to be effective in accelerating the growth of *student start-ups* (Ayala-Gaytán, 2024; Flechas et al., 2023). The training based on direct experience is able to improve managerial capacity, decision-making, and risk management, all of which are crucial elements of entrepreneurial ability (Unpas Journal, 2025).

Research Synthesis and Gaps

In synthesis, the latest literature reinforces the argument that entrepreneurship education is a strong predictor of interest and creativity, but its influence on practical abilities is strongly mediated by the quality and intensity of experiential learning and ecosystem support (Shi et al., 2023). The existing research gap lies in an integrated analysis that tests all three variables (interests, creativity, and abilities) simultaneously, especially in specific regional contexts, such as Batam, which faces a high structural unemployment problem. This study seeks to fill this gap by providing empirical evidence on the most effective entrepreneurial intervention models for universities in Batam, as well as identifying qualitative factors that strengthen these quantitative results.

3. Research Methods

This research was designed using a Mixed-Method approach with a sequential exploratory design. This research was conducted at universities in Batam City. The selection of this location is specific (purposive). The sampling technique used is Purposive Sampling, by establishing criteria that respondents must understand the curriculum and entrepreneurial learning experience on their campus. The number of quantitative samples was set at 200 respondents, which were considered adequate and met the minimum requirements for data

analysis using Structural Equation Modeling based on Partial Least Squares (SEM-PLS). Data Analysis TechniquesQuantitative Analysis: SEM-PLSAThe quantitative data analysis was carried out using the Structural Equation Modeling – Partial Least Squares (SEM-PLS) method with the help of SmartPLS software. PLS was chosen for its prediction-oriented nature and ability to handle complex structural models without the assumption of strict data distribution.

4. Results and Discussions

1. Hasil Analisis Kuantitatif (SEM-PLS)

Quantitative Results.

Table 1. SEM-PLS Analysis Results

Relationships Between Variables	Line Coefficient (β)	t- Statistics	p- Value	Information
Entrepreneurship Education → Interest	0,62	8,45	<0.01	Signifikan
Entrepreneurship → Creativity Education	0,55	7,23	<0.01	Signifikan
Entrepreneurship Education → Ability	0,48	2,95	<0.05	Signifikan

From the table above, it is explained that

1. The value of the path coefficient (β) indicates the direction and strength of the influence. The greater the β, the stronger the influence of the independent variable on the dependent variable. Entrepreneurship education → Interest (β = 0.62; t = 8.45; p < 0.01) This means that entrepreneurship education has a strong and significant influence on increasing students' interest in entrepreneurship.
2. Entrepreneurship education → Creativity (β = 0.55; t = 7.23; p < 0.01) Show a significant influence, where students who get entrepreneurship learning tend to be more creative in creating business ideas.
3. Entrepreneurship education → Ability (β = 0.48; t = 2.95; p < 0.05) Showed significant influence but was relatively lower than interest and creativity.
   - This means that while entrepreneurship education affects students' abilities, other factors outside of formal education (such as practical experience) also influence.
   - This means that while entrepreneurship education affects students' abilities, other factors outside of formal education (such as practical experience) also influence.

Table 2. R^2 Value Research Model

Variable endogenous	R^2	Interpretasi
Interest	0,51	Good (51% variation explained model)
Creativeness	0,42	Medium (42% variation explained)
Ability	0,39	Medium (39% variation explained)

From table 2 above, it is explained:

1. **R^2 (R-Square)** indicates how much variation of dependent variables can be explained by independent variables (in this case entrepreneurship education).
2. **Interest (R^2 = 0.51):** As many as 51% of the variation in students' interest in entrepreneurship is explained by entrepreneurship education. This is a **good category**, meaning that the model is quite powerful in predicting interest.
3. **Creativity (R^2 = 0.42):** As many as 42% of creativity variations are explained by entrepreneurship education. Being in **the medium** category means that there are still other factors (e.g. personal experience, social environment) that also affect creativity.
4. **Ability (R^2 = 0.39):** As many as 39% of the variation in entrepreneurial ability is

explained by entrepreneurship education. It is also a **medium** category, showing that students' abilities are not only influenced by formal education, but also real practice and field experience.

Overall, these quantitative results confirm that entrepreneurship education plays an important role in shaping students' interest and creativity, as well as contributing to improving entrepreneurial skills. However, to achieve more comprehensive capabilities, students need to be supported by practical experience through project- based learning activities, business incubators, and collaborations with industry.

Quantitative Results.

Qualitative findings were obtained from in-depth interviews with students and lecturers in entrepreneurship courses. Thematic analysis shows that entrepreneurship education not only provides theoretical knowledge, but also encourages students to develop practical skills through various learning approaches.

First, most students emphasized that the project-based learning method is much more effective than the traditional lecture method. Through project-based assignments, such as preparing business plans and business simulations, students feel more challenged to think critically as well as be creative in solving real problems. This is in line with the concept of experiential learning, where students' active involvement in practical activities can increase their motivation and understanding of the world of entrepreneurship.

Second, interviews with students reveal the importance of collaboration with industry practitioners. The presence of practitioners as resource persons or mentors provides real perspectives on business opportunities and challenges in the field. The direct feedback provided by practitioners helps students in assessing the feasibility of business ideas and increasing their confidence to be entrepreneurs.

Third, almost all respondents mentioned that campus business incubators are one of the most effective means of improving entrepreneurial skills. The incubator not only provides facilities, but also opens access to business networking, seed funding, as well as intensive mentoring programs. Through the incubator, students can test business ideas in a more realistic environment so that they are able to hone their managerial and innovative skills.

Overall, these qualitative results confirm that the success of entrepreneurship education in Batam universities does not solely depend on the material taught in class, but is greatly influenced by applicable learning strategies. Project-based approaches, involvement of industry practitioners, and business incubator support have been proven to strengthen students' creativity and skills in developing businesses.

Discussion

The results of the study show that entrepreneurship education has a significant effect on the interest, creativity, and entrepreneurial ability of students in Batam universities. These findings are in line with the entrepreneurial intention theory which emphasizes that education, experience, and environmental support are the main determinants in forming entrepreneurial intentions (Ajzen, 1991; Fayolle & Gailly, 2015).

First, the strongest influence of entrepreneurship education can be seen in the increase in students' interest in entrepreneurship ($\beta = 0.62$). This confirms that exposure to entrepreneurship materials, both in the form of theory and case studies, is able to foster students' motivation and desire to start a business. These findings are consistent with the research of Nabi et al. (2020), which states that entrepreneurship education has a strategic role in increasing entrepreneurial intention among students.

Second, entrepreneurship education also contributes to increasing student creativity ($\beta = 0.55$). Creativity is one of the important elements in entrepreneurship, as it relates to the

ability to generate innovative new ideas. Interviews with students show that project-based learning methods and collaboration with industry practitioners provide more space for students to experiment with original business ideas. This is in line with the findings of Nowiński et al. (2020), who stated that entrepreneurship education is effective in strengthening students' creative thinking through an experiential learning approach.

5. Conclusion

This research proves that entrepreneurship education has a significant role in increasing the interest, creativity, and entrepreneurial ability of students in Batam universities. Quantitative results show that entrepreneurship education has the strongest influence on students' entrepreneurial interest, followed by creativity, and then entrepreneurial ability. These findings confirm that formal education is able to encourage students' motivation and innovative ideas, but improving practical skills still requires the support of real experience. The qualitative results reinforce these findings by showing that project-based learning methods, collaboration with industry practitioners, and campus business incubator support are important factors in developing entrepreneurial skills. Students consider that learning based on practice and real experience is more effective than a theoretical approach alone. Thus, it can be concluded that entrepreneurship education not only serves as a medium of knowledge transfer, but also as a means to form a creative mindset, foster an interest in entrepreneurship, and strengthen students' practical skills. The practical implication of this research is the need for universities in Batam to strengthen the integration of experiential learning-based curriculum, establish partnerships with the industrial world, and optimize the role of business incubators as a forum for young entrepreneur development.

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