

Effect of Entrepreneurship Education and Family Environment on Entrepreneur Attitude and Interest of Science Teacher Candidates

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Abstract: This study aims to describe science teacher candidates' perceptions of effect of entrepreneurship education and family environment on entrepreneur attitude and interest. This study is an exploratory research with 56 biology education students as respondents. The research instrument used was a closed questionnaire with degraded answers according to a Likert scale that had been validated by experts and declared valid. Analysis of research data used is descriptive quantitative statistics and inferential statistics with multiple linear regression test at a significance level of 5%. The results of the study show that ((1) perceptions of science teacher candidates towards entrepreneurship education have an average at 3.45 in good category, family environment at 2,73 in good category, entrepreneur attitude at 3,13 in good category, and entrepreneur interest at 3,08 in good category; (2) there is an effect of entrepreneurship learning and family environment on student entrepreneurial attitudes with a significance value of is smaller than the alpha testing value of 0,003 (<0,05); (3) there is an effect of entrepreneurship learning and family environment on entrepreneur interest with a significance value of 0.022 is smaller than the alpha testing value of 0,05 (<0,05); (4) entrepreneurship learning and family environment influence student entrepreneurial attitudes by 19,3% and the rest are influenced by variables or other factors; (5) entrepreneurship learning and family environment influence student entrepreneurial interest by 13,4% and the rest are influenced by variables or other factors.

Keywords: Entrepreneurship learning; Family environment; Entrepreneur attitude and interest

Introduction

Indonesia stands as a vast nation endowed with abundant natural resources (Ruwaidah, Hartawan & Muliadi, 2022), and it is home to an estimated population of approximately 278,516,336 individuals (BPS, 2023). According to Muliadi, Mirawati & Prayogi (2021), the wealth of natural resources presents an opportunity for Indonesia to advance into a developed country, contingent upon the efficient and optimal management of these natural resources for the well-being of the entire Indonesian population. This opportunity is further underscored by the significant size of the population,

positioning Indonesia as a substantial global market with the potential to support domestic industrial growth (Rifkhan, 2017). However, the ongoing increase in population has direct implications for the labor force and the demand for employment opportunities (Muliadi, Asri & Lestarini, 2020). The constraints in the field of employment have led to social phenomena, such as an persistent issue of rising unemployment (Muliadi & Mirawati, 2020). Addressing these challenges will require concerted efforts and effective solutions to harness the potential of Indonesia resources for the benefit of its people.

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The Central Bureau of Statistics reports that the unemployment rate in Indonesia reached 5.83% in 2023 among the working-age population. Specifically, 5.91% of this group consists of graduates with diplomas I, II, III, while 5.52% are comprised of undergraduate, master's, and doctoral degree holders (BPS, 2023). This data serves as concrete evidence that higher education graduates significantly contribute to the unemployment figures and highlights the need for reforms in the university education system (Muliadi, Mirawati & Prayogi, 2021). Santoso & Handoyo (2019) argue that the high unemployment among university graduates is primarily due to their reliance on job opportunities. This assertion is further supported by Indriyatni, Wahyuningsih & Purwanto (2014), who suggest that the persistently high unemployment rates are a result of graduates focusing solely on seeking employment rather than creating job opportunities. Therefore, there is a pressing need for a structured and systematic effort to enhance the quality of graduates, with a particular emphasis on skills-oriented education (Wahyuni & Hidayati, 2017). In the 21st century, a proficiency-based education policy is deemed crucial to ensure that graduates are not only creative, competitive, and skilled but also capable of independence (Normawati & Margono, 2016).

The advancement of higher education is essential to cultivate graduates who possess creativity, competitive prowess, independence, and the ability to confront life's diverse challenges (Primandaru, 2017; Darmawan & Warmika, 2016; Fatimah, 2013). This objective addresses the widespread societal expectation for graduates to emerge from their education well-equipped to secure desired employment and enhance the quality of their lives (Wardhani, Riani & Susilaningsih, 2018). Consequently, it is imperative that higher education systems be oriented towards life proficiency, emphasizing life skills. This orientation aims to empower graduates to not only seek employment but also to actively contribute as job creators by leveraging their surrounding resources (Muliadi & Mirawati, 2020; Muliadi, Asri & Lestarini, 2020). Wahyuni & Hidayati (2017) confirm the significance of developing curricula and learning systems within colleges to support the enhancement of students' life proficiency, particularly in strengthening entrepreneurial skills (Darmawan & Warmika, 2016; Mirawati, Wardana, & Sukaatmadja, 2016). The cultivation of entrepreneurial skills is seen as an effective strategy to address the issue of unemployment (Munawar & Supriatna, 2018; Muliadi, Mirawati & Prayogi, 2021). According to Dewi (2016), who posits that entrepreneurship development and business creation serve as tangible solutions to combat poverty, unemployment, and the scarcity of job opportunities.

According to Munawar & Supriatna (2018), entrepreneurial skills is a crucial competency for college students, serving as a preventive measure against unemployment and job-seeking challenges. The development of entrepreneurial skills needs to be approached systematically and consistently (Muliadi, Sarjan & Rokhmat, 2022; Muliadi & Mirawati, 2020), recognizing the pivotal role of entrepreneurship in the future of students and the economic development of Indonesia (Wardhani, Riani & Susilaningsih, 2018; Paramita, 2017). Afwan, Vahlia, and Sholiha (2022) argue that fostering capable entrepreneurial figures through business innovation contributes to enhancing the economy and global competitiveness. This argument finds support to Darwanto study (2012), explains that entrepreneurship has a significant role in increasing the number of entrepreneurs, the creation of new job opportunities to reduce unemployment, and the enhancement of national economic growth and public income. Consequently, the prolonged and deepened commitment to this approach can contribute to economic stability, as indicated by the findings (Slamet, Tunjungsari & Le, 2014).

The National Entrepreneurship Movement was officially launched by the Indonesian government in February 2011 as part of an initiative to encourage societal involvement, particularly among the youth, in entrepreneurial activities (Setyawan, 2016; Mirawati, Wardana & Sukaatmadja, 2016). This movement was integrated into higher education curricula through the inclusion of entrepreneurship courses. The primary goal was to provide students with opportunities to foster creativity and innovation in the field of entrepreneurship, thereby acquiring essential skills for success in the entrepreneurial landscape (Primandaru, 2017; Darmawan & Warmika, 2016; Fatimah, 2013). Thus, entrepreneurship has become one of the mandatory subjects in the Biology Education Study Program curriculum at the Mandalika University of Education. It is hoped that this entrepreneurial learning can facilitate a structured strengthening of biology students' competencies to become skilled entrepreneurs who are able to manage their business independently (Wardhani, Riani & Susilaningsih, 2018).

Developing an understanding of entrepreneurship plays a crucial role in supporting students studying biology, fostering the growth of their knowledge, skills, attitudes, and interests in the field of entrepreneurship (Supeni & Efendi, 2017; Setyawan, 2016). Muliadi (2019) and Hattab (2014) highlight that the knowledge and skills acquired by students in entrepreneurship education significantly impact their beliefs and interests in entrepreneurship. Wardhani, Riani, & Susilaningsih (2018) support this perspective, emphasizing that learning entrepreneurship can enhance students'

interest in persisting in entrepreneurial endeavors, as the knowledge gained influences their perceptions and beliefs, including self-efficacy in entrepreneurship (Muliadi, 2020b; Muliadi, 2019; Hattab, 2014). Suryana (2013) underscores that entrepreneurial skills are not merely innate talents or the outcome of experience but can be learned and taught. Therefore, individuals can embark on the entrepreneurial journey early in life by cultivating an entrepreneurial spirit through education and their surrounding environment (Paramita, 2017; Muliadi & Mirawati, 2020). According to Muliadi, Mirawati & Prayogi (2021), the knowledge about entrepreneurship acquired through campus-based learning is further reinforced by input and support from people in the student's immediate environment, such as family.

Students derive strength and enhancement in their knowledge and skills from an active family environment that fosters entrepreneurship (Muliadi, Asri & Lestari, 2020). Therefore, the acquisition of entrepreneurial knowledge is fortified through experiential learning and the supportive atmosphere provided by an actively involved family in entrepreneurship. This aligns with opinion of Alma (2011), that the family environment, comprising parents, siblings, friends, and admired successful entrepreneurs, can serve as influential role models shaping the entrepreneurial abilities, attitudes, and interests of individuals. This viewpoint finds support to study of Rohmah (2011), which indicates a direct or indirectly significant impact of familial entrepreneurship education on the personality traits and entrepreneurial attitudes of students. Further corroborating these findings, research conducted by Wahyuningsih, Matsum & Ulfah (2017) affirms the positive influence of a family environment on the personality development of aspiring entrepreneurs.

Self-efficacy, attitude, and interest in entrepreneurship have the potential to develop from an early age and evolve through the learning experiences within campus, family, and the surrounding environment (Srigustini, 2014; Muliadi & Mirawati, 2020). Wijaya (2008) outlines in the Theory of Planned Behavior (TPB) that attitudes and interests in entrepreneurship are shaped by strong convictions, allowing individuals to embrace and adopt perspectives, ideas, beliefs, or advice from those around them. The family environment factor can significantly impact an individual's self-efficacy and interest in entrepreneurship (Santi, Hamzah & Rahmawati, 2017; Alma, 2011). Therefore, there is a need for exploratory studies to understand students' perceptions and examine the effect of entrepreneurship education and family environment on entrepreneur attitude and interest of science teacher candidates.

Method

This study is an exploratory descriptive research (Muliadi & Mirawati, 2020; Muliadi, Mirawati & Prayogi, 2021), to describe students' perceptions of effect of entrepreneurship education and family environment on entrepreneur attitude and interest. Respondents were 56 students of Biology Education at the Mandalika University of Education who were obtained using a convenience sampling technique with consideration of the accessibility of respondents in filling out online questionnaires (Fink, 2011). The research instrument was a closed questionnaire with degraded answers according to the Likert scale (Muliadi, Mirawati & Prayogi, 2021) and distributed using the media google form (Adha, et al., 2020). Questionnaire development is limited to indicators regarding student perceptions of entrepreneurship education, family environment, entrepreneur attitude, and entrepreneur interest. The questionnaire compiled was adopted from a questionnaire developed by Muliadi, Mirawati & Prayogi (2021); Muliadi & Mirawati (2020); Muliadi, Asri & Lestari (2020) and has been validated by experts and declared valid.

Analysis of research data using quantitative descriptive statistics and inferential statistics. Quantitative descriptive analysis to describe data on student perceptions of entrepreneurship education, family environment, entrepreneur attitude, and entrepreneur interest. The average student perception data is interpreted in the form of categories with the assessment criteria developed by Muliadi (2020a) in the following table.

Table 1. Criteria for interpreting student perceptions

Average score (\bar{p})	Interpretation
3.51 - 4.00	Excellent
2.51 - 3.50	Good
1.51 - 2.50	Fair
1.00 - 1.50	Less

Inferential statistical analysis was used to effect of entrepreneurship education and family environment on entrepreneur attitude and interest of science teacher candidates. The analytical technique used is multiple linear regression at a significance level of 5% with the formulation of a statistical hypothesis, namely $H_0: \mu_1 = \mu_2$ (no significant effect of entrepreneurship education and family environment on entrepreneur attitude and interest of science teacher candidates) and $H_1: \mu_1 \neq \mu_2$ (there is a significant effect of entrepreneurship education and family environment on entrepreneur attitude and interest of science teacher candidates). If the results of the analysis are significant or the p-value of the

multiple linear regression test is less than 0.05, then H_0 is rejected and H_1 is accepted or vice versa.

Result and Discussion

Description of the data on perceptions of biology education students towards entrepreneurship education, family environment, entrepreneur attitude, and entrepreneur interest is presented in table 2 below.

Table 2. Data on perceptions of students

Variabel	N	Σ Skor	\bar{p}	Category
Entrepreneurship education	56	177.14	3.16	Good
Family environment	56	153.00	2.73	Good
Entrepreneur attitude	56	175.50	3.13	Good
Entrepreneur interest	56	172.25	3.08	Good

The description of the measurement data in the table above shows that the perceptions of biology education students towards entrepreneurship education have an average at 3.45 in good category, family environment at 2,73 in good category, entrepreneur attitude at 3,13 in good category, and entrepreneur interest at 3,08 in good category. The description of the data is emphasized in the following Figure 1.

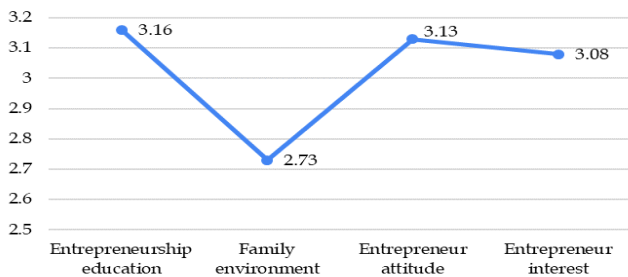


Figure 1. Average score of biology students' perceptions

Inferential statistical analysis with multiple linear regression tests was used to effect of entrepreneurship education (X_1) and family environment (X_2) on entrepreneur attitude (Y_1) and entrepreneur interest (Y_2) of science teacher candidates. The analysis begins with by classic assumption test, namely the normality, linearity, and multicollinearity tests. The results of the classical assumption test are presented in Tables 3 and 4 below.

Table 3. Results of the normality test

Variable	Kolmogorov-Smirnov's test score	Sig.
X_1	1,123	0.160
X_2	1,149	0.143
Y_1	1,346	0.053
Y_2	1,400	0.040

The results of the normality analysis using Kolmogorov-Smirnov's test showed that the data on student perceptions about (1) entrepreneurship education has a significance value 0,160 was greater than the alpha testing value 0,05 ($>0,05$) which means it is normally distributed, (2) family environment has a significance value 0,143 was greater than the alpha testing value 0,05 ($>0,05$) which means it is normally distributed, (3) entrepreneur attitude has a significance value 0,053 was greater than the alpha testing value 0,05 ($>0,05$) which means it is normally distributed, (4) entrepreneur interest has a significance value 0,040 was smaller than the alpha testing value 0,05 ($<0,05$) which means it is not normally distributed.

Table 4. Result of linearity and multicollinearity test

Linearity			Multicollinearity		
Variable	F	Sig.	Variable	Tolerance	VIF
X_1 - Y_1	1.233	0.302	X_1 + X_2 - Y_1	0.994	1.006
X_2 - Y_1	0.727	0.667	X_1 + X_2 - Y_2	0.994	1.006
X_1 - Y_2	0.432	0.877			
X_2 - Y_2	0.923	0.498			

The results of the classical assumption analysis show that (1) there is a linear relationship between entrepreneurship learning variables and entrepreneurial attitudes, where the significance value 0,302 was greater than the alpha testing value 0,05 ($>0,05$), (2) there is a linear relationship between family environment variables and entrepreneurial attitudes, where the significance value 0,667 was greater than the alpha testing value 0,05 ($>0,05$), (3) there is a linear relationship between entrepreneurship learning variables and entrepreneurial interest, where the significance value 0,877 was greater than the alpha testing value 0,05 ($>0,05$), (4) there is a linear relationship between family environment variables and entrepreneurial interest, where the significance value 0,498 was greater than the alpha testing value 0,05 ($>0,05$). Furthermore, there are no symptoms of multicollinearity between independent variables with a VIF (Variance Inflation Factor) value of 0,994 which is smaller than 10 (<10).

Multiple linear regression analysis was used to determine the effect of entrepreneurship learning (X_1) and family environment (X_2) on entrepreneur attitude (Y_1) and entrepreneurial interest (Y_2) students. The results of the analysis are presented in a row in Tables 5 and 6 below.

Table 5. Simultaneous regression test results (*F-test*)

Variable	F	Sig.
X_1 + X_2 - Y_1	6.319	0.003
X_1 + X_2 - Y_2	4.097	0.022

The results of the simultaneous regression test (F-test) show that (1) there is an effect of entrepreneurship learning and family environment on entrepreneur attitude with an F value of 6,319 and a significance value of 0.003 is smaller than the alpha testing value of 0,05 (<0,05); (2) there is an effect of entrepreneurship learning and family environment on entrepreneur interest with an F value of 4,097 and a significance value of 0.022 is smaller than the alpha testing value of 0,05 (<0,05).

Table 6. Test results for the coefficient of determination

Variable	R	R Square	Adjusted R Square
X1+X2 - Y1	0.439	0.193	0.162
X1+X2 - Y2	0.366	0.134	0.101

The test results for the coefficient of determination show that (1) the value of R Square is 0,193 which means that entrepreneurship learning and family environment influence student entrepreneurial attitudes by 19,3% and the rest are influenced by variables or other factors; (2) the value of R Square is 0,134 which means that entrepreneurship learning and family environment influence student entrepreneurial interest by 13,4% and the rest are influenced by variables or other factors.

The findings of this study indicate that the combined impact of entrepreneurial learning and the family environment significantly affects the entrepreneurial attitudes and interests of biology students. These results align with prior research, specifically the work conducted by Muliadi, Mirawati, & Prayogi (2021), which demonstrated the influence of entrepreneurship education and subjective norms on student self-efficacy. Similarly, the research conducted by Mirawati & Subagio (2022) revealed a connection between entrepreneurship education, self-efficacy moderation, and students' entrepreneurial attitudes. Additionally, the study by Muliadi & Mirawati (2020) underscored the simultaneous influence of attitudes and subjective norms on students' entrepreneurial interest. Furthermore, the research by Muliadi, Asri & Lestarini (2020) highlighted the impact of knowledge and the family environment on students' entrepreneurial attitudes. Consistent with these findings, Indrawati, Herkulana & Syahrud (2017) observed a significant influence of attitudes and subjective norms on students' entrepreneurial interest.

The constructive influence of entrepreneurial education and family environment on the entrepreneurial attitude and interests of students validates the self-efficacy (confidence) of biology students in venturing into entrepreneurship. The assurance of biology students in entrepreneurship is undeniably rooted in possessing a sound understanding of entrepreneurial concepts (Muliadi, Mirawati & Prayogi, 2021). Consequently, a robust understanding of

entrepreneurship has nurtured both interest and confidence among biology students in the entrepreneurial domain. In response to the research questionnaire, biology students acknowledged that their grasp of entrepreneurial knowledge was acquired through the structured entrepreneurship learning programs conducted on campus. This aligns with Suryana (2013) viewpoint that entrepreneurship is not solely an inherent aptitude or a result of practical experience, but rather a subject that can be learned and taught. Wardhani, Riani & Susilningsih (2018) also supported this perspective, asserting that entrepreneurial education contributes to the cultivation of students' enthusiasm for entrepreneurship. The consensus among scholars is that entrepreneurship education plays a pivotal role in equipping biology students with the requisite knowledge, skills, attitudes, and interests for entrepreneurship (Supeni & Efendi, 2017; Setyawan, 2016).

Entrepreneurial education plays a crucial role in fostering the understanding and development of entrepreneurial attitudes among biology students (Kourilsky & Walstad, 1998). Paramita (2017) emphasizes the early cultivation of an entrepreneurial spirit in individuals, suggesting that this can be achieved through education and the overall environment (Muliadi & Mirawati, 2020). The research conducted by Muliadi, Mirawati & Prayogi (2021) highlights the importance of external support in reinforcing students' entrepreneurship knowledge gained through campus learning, particularly from their family environment. The active involvement of the family in entrepreneurship, as noted by Muliadi, Asri & Lestarini (2020), positively reinforces students' knowledge and skills acquired during entrepreneurship education. This aligns with Alma (2011) perspective, asserting that parents, siblings, friends, and admired successful entrepreneurs within the family environment can serve as influential role models, impacting the students' abilities, attitudes, and interest in entrepreneurship. These views are substantiated by Rohmah (2011) research findings, which indicate a significant direct and indirect influence of entrepreneurship education within the family setting on students' personality characteristics and entrepreneurial attitudes. Furthermore, the study conducted by Wahyuningsih, Matsum & Ulfah (2017) affirms the positive impact of the family environment on the development of entrepreneurial personality traits.

In accordance with the Theory of Planned Behavior (TPB), individuals' inclination toward entrepreneurship is shaped by a robust conviction in their ability to adopt and adhere to the perspectives, ideas, or counsel of those in their social circle. Family environmental factors play a role in shaping an individual's self-efficacy and enthusiasm for entrepreneurship (Santi, Hamzah &

Rahmawati, 2017; Alma, 2011). The findings of this study align with Bandura's viewpoint (as cited in Mustofa, 2014) that confidence and interest in entrepreneurship are impacted by both the firsthand experience of mastering a skill (master experience) and the observational experiences of others (vicarious experience). Vicarious experience involves students gaining insights from individuals who exemplify successful entrepreneurship, thereby enhancing their confidence and interest in entrepreneurship (Pamungkas, 2017). This implies that the entrepreneurial experiences of people in their immediate surroundings (subjective norms) contribute to bolstering students' confidence and interest in entrepreneurship. Consequently, the experiences that biology students accumulate within their surrounding environment will fortify their self-efficacy, attitudes, and entrepreneurial interests (Widayoko, 2016).

Conclusion

Based on the results of the study, it can be concluded that (1) perceptions of science teacher candidates towards entrepreneurship education have an average at 3.45 in good category, family environment at 2,73 in good category, entrepreneur attitude at 3,13 in good category, and entrepreneur interest at 3,08 in good category; (2) there is an effect of entrepreneurship learning and family environment on student entrepreneurial attitudes with a significance value of is smaller than the alpha testing value of 0,003 ($<0,05$); (3) there is an effect of entrepreneurship learning and family environment on entrepreneur interest with a significance value of 0.022 is smaller than the alpha testing value of 0,05 ($<0,05$); (4) entrepreneurship learning and family environment influence student entrepreneurial attitudes by 19,3% and the rest are influenced by variables or other factors; (5) entrepreneurship learning and family environment influence student entrepreneurial interest by 13,4% and the rest are influenced by variables or other factors.

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Author Contributions

Dadang Warta Chandra Wira Kusuma: develop research topics and establish research procedures.

Baiq Mirawati: searching for literacy related to research topics and analyze research data.

Agus Muliadi: analyzing literature related to research topics, writing articles, and revising articles.

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Conflicts of Interest

The authors declare no conflict of interest.

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