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How to educate students to become competent entrepreneurs

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ABSTRACT

The purpose of this study was to examine the direct or indirect effect of the entrepreneurship education variable towards the vocational high school students' entrepreneurship competence. This study used a quantitative approach with the Survey Method (Explanatory Survey Method), and the test uses path analysis. The number of samples in this study were 100 students from 25 Public and Private Vocational High Schools Accredited A in Bandung, Indonesia. The results showed that (1) entrepreneurship education had a significant effect on entrepreneurial intentions, both directly and indirectly, (2) entrepreneurship education had a significant direct effect on student entrepreneurial competencies, and (3) student entrepreneurial competencies had a significant influence on entrepreneurial intentions. This is because the results can illustrate that entrepreneurship education in vocational high schools is good, it can be seen from the score of the entrepreneurship education variable in the high category and the form of entrepreneurship learning in vocational high schools is good. Entrepreneurship education has the highest direct influence on students' entrepreneurial competence variables. Entrepreneurship education has a significant effect on entrepreneurial intentions, but if the competence variable becomes a mediating variable, it can further increase students' entrepreneurial intentions. The results of this study are expected to be considered by vocational high schools to provide entrepreneurship education to students. Thus, students' competence and interest in entrepreneurship can increase.

Keywords: entrepreneurship education, entrepreneurial intentions, student entrepreneurial competencies

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INTRODUCTION

Many people agree that promoting entrepreneurship in both developed and developing countries is necessary (Joshua et al., 2022). In developing countries such as Indonesia, entrepreneurship is a way to create jobs, leading to overcoming economic challenges, economic growth, and prosperity of the country. So, can the state encourage young people to become entrepreneurs? The answer needs to know whether young people, especially students, have entrepreneurial intentions (Ozaralli & Rivenburgh, 2016). The decision to become an entrepreneur is something that is done consciously and requires careful planning. Entrepreneurship activities begin with entrepreneurial intentions formed through their competencies and an interacting environment (Al Mamun et al., 2016). The education that is passed is a way to increase entrepreneurial competence (Boyles, 2012; Sánchez, 2013; Wang et al., 2019). Vocational high school is one of the schools having full of practicum (Ana, 2020; Rosina et al., 2021; Sangsawang, 2020). This school is a place of education for bringing potential sources of future entrepreneurs. This school is expected to influence and produce young people who have entrepreneurial intentions and have good entrepreneurial competencies (Rosina et al., 2021).

Entrepreneurship education intends to provide relevant entrepreneurial-driven knowledge, skills, and abilities (Wuryandani et al., 2016), along with agile, creative mindsets and other

psychological aspects (for example, self-effacement, motivation, intentions) to enable the implementation of such innovations into a viable, entrepreneurial business. In other words, the effect of entrepreneurship education on entrepreneurial intentions is still limited and is still undergoing empirical testing (Zhang et al., 2014). Several studies (Bae et al., 2014; Cera et al., 2020; Joshua et al., 2022; Maresch et al., 2016; Westhead & Solesvik, 2016; Zhang et al., 2014) discussed the effect of entrepreneurship education on entrepreneurial intention. However, few studies have been conducted, especially in Indonesia, on the effect of entrepreneurship education on entrepreneurial intentions by considering entrepreneurial competencies, especially in students.

There is a close linkage between vocational education institutions and the work environment (Maryanti & Nandiyanto, 2021; Rosina et al., 2021). Vocational education is considered to be a bridge between society and the work environment (Maryanti & Nandiyanto, 2021). [A3] [A4] The Indonesian Statistics Bureau (known as the Central Bureau of Statistics (BPS) stated that 9.1 million people (6.49%) of the Indonesian workforce were unemployed in August 2021. Young people aged 15-24 years were the highest unemployed. The high unemployment rate in the young age group is due to limited employment opportunities and very low entrepreneurial competence and mentality (Al-Najar et al., 2019; Handayani et al., 2020). Vocational education, however, is supposed to provide graduates beneficial for industries since they offer skills ready to be used by employers (Dewi & Sudira, 2018).

The relevance of the competence of vocational school graduates and the needs of the business and industrial world is one of the problems of Indonesian education. The research found that there are still around 12% of vocational school graduates who are not absorbed in the world of work, including the competence of vocational school graduates who are not following the needs of the business sector where these graduates work (Ngadi, 2014; Sukarjo & Tarmana, 2021). The relatively low absorption of vocational high school graduates [A5] and high unemployment rates according to education levels are caused by many factors, such as the graduation level of Business and Management vocational students. Furthermore, the majority of graduates in Indonesia remains to be a job seeker instead of job creator so that vocational high schools can provide entrepreneurship education resulting in students having the competence and having the intention to be entrepreneurs. [A6]

Currently, many schools include entrepreneurship education in their curricula, to prepare students for work ready as entrepreneurs. However, there is still less research that discusses the study of learning and learning entrepreneurship from a scientific perspective. (Chaker & Jarraya, 2021). The educational environment, experience, and teachers' attitude have not implemented an entrepreneurial education approach (Chaker & Jarraya, 2021; Pittaway & Cope, 2007), lack of clear understanding of entrepreneurship and entrepreneurship education.

The purpose of teaching with an entrepreneurial approach is expected to increase students' entrepreneurial competencies and entrepreneurial intention. Internal and external factors need to be considered (Sahabuddin et al., 2018). Entrepreneurship education is an external factor affecting students' intentions to become entrepreneurs. Although entrepreneurship education is recognized as important (Hills, 1988), there are empirical studies, which say that the impact of entrepreneurship education has a relatively little effect on entrepreneurial intentions. Many studies reveal that the influence of general education needs to be explored more. Regarding this, there is a need for an in-depth study of the management of entrepreneurship education. This study can be a factor influencing entrepreneurial intentions by considering the entrepreneurial competence of high school students.

The purpose of this study was to examine the direct and indirect effects among the variables of entrepreneurship education, students' entrepreneurial competence, and entrepreneurial intentions in the vocational school. This study used a quantitative approach with the Survey Method (Explanatory Survey Method), and the test uses path analysis. The novelties of this study were the use of the entrepreneurial competence variable as a mediating variable for the effect of entrepreneurship education on entrepreneurial intentions, the results obtained show that using the entrepreneurial competence variable can increase the influence of entrepreneurship education on students' entrepreneurial intentions, and the fact that it generates a new research model in which

entrepreneurial competence is a significant factor to increase students' intention to become entrepreneurs.

METHOD

This study uses a quantitative approach with the Survey Method (Explanatory Survey Method). In this study, the unit of analysis serves as the unit of analysis in measuring each variable is the A-accredited vocational high school students in the Business and Management Expertise Sector in Bandung City. Of the 25 public and private vocational schools of business and management expertise, there are three state vocational schools and 22 private vocational schools. The sampling technique used was solving with an error rate of 10%. Thus, the number of samples obtained was 100 vocational school students.

To collect primary data is done by submitting a questionnaire to the respondent. There are three [A7] variables in this study, namely entrepreneurship education (X), entrepreneurial competencies of the student (Y), and entrepreneurial intention (Z). This study uses a quantitative approach with a survey method. A five-point Likert scale was used to collect data which then were analyzed using path analysis.

Table 1. Construct and measurement items

Construct	Measurement Items
Entrepreneurship education (X)	1. Teachers have a creative spirit in shaping entrepreneurial learning. 2. Teachers can transmit the courage of business risk to students. 3. Teachers develop managerial skills to influence students. 4. The teacher directs students to have a leadership spirit in entrepreneurship learning. 5. The teacher directs students to be able to anticipate the future in entrepreneurship learning.
Entrepreneurial competencies of the student (Y)	1. Idea generation. 2. Environmental scanning. 3. Recognizing and envisioning taking advantage of opportunities. 4. Formulating strategies for taking advantage of opportunities. 5. Decision making and risk.
Entrepreneurial intention (Z)	1. I will choose a career as an entrepreneur after passing later. 2. I prefer being an entrepreneur in business myself to being an employee company/organization. 3. I expect to start my own business (entrepreneurial) in the next 1-3 years.

Based on the problems and the relationship of variables, the research model obtained is in Figure 1.

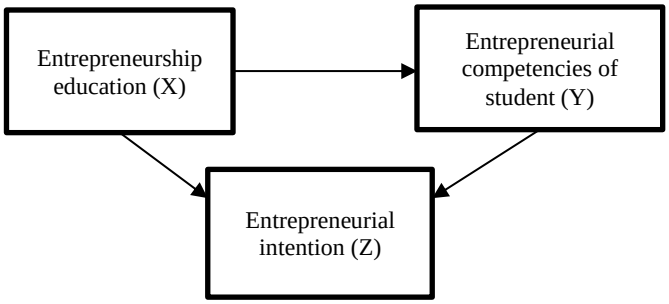

Figure 1. Research Model

A questionnaire is said to be reliable if the value of 's Alpha > 0.60. As in Table 2, the value of Cronbach's Alpha is 0.844 and the number of question items is 13 questions. Thus, it is said that the questionnaire is reliable because 0.844 > 0.60.

Table 2. Validity and reliability

Cronbach's Alpha	N of Items
0.884	13

Table 3. Validity test results

	Item-Total Statistics			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Y1	46.1600	63.671	0.627	0.873
Y2	46.0700	63.763	0.596	0.874
Y3	46.1900	63.428	0.622	0.873
Y4	46.1900	66.054	0.519	0.878
Y5	46.1100	65.170	0.529	0.878
Z1	46.2300	63.593	0.618	0.873
Z2	46.1900	66.075	0.498	0.879
Z3	46.1600	64.681	0.575	0.876
X4	46.3300	66.244	0.493	0.880
X5	45.9800	64.545	0.608	0.874
X1	45.9900	64.515	0.585	0.875
X2	46.1200	65.460	0.568	0.876
X3	46.0400	64.402	0.564	0.876

A measurement item is said to be valid if the Corrected item-total Correlation value is ≥ 0.30 (Khidzir et al., 2018). As in Table 2, the value of all items in the Corrected item-total Correlation question is ≥ 0.30 out of a total of 13 question items. Thus, the questionnaire is valid.

FINDING AND DISCUSSION

Finding

Sub-structural Equation 1

Simultaneous influence

The effect of the variable entrepreneurship education on the variable entrepreneurial competencies of students simultaneously can be seen in Table 4, especially the R square value.

Table 4. Effect of simultaneous X on Y

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.784[a]	0.615	0.611	0.46692
a. Predictors: (Constant), X				
b. Dependent Variable: Y				

Table 4 shows that the value of R Square is 0.615. This figure reveals the magnitude of the influence of the entrepreneurship education variable on the entrepreneurial competencies of students by calculating the coefficient of determination (KD) with the following formula:

KD = R^2 X 100%

KD = 0,615 X 100%

KD = 61,5%

The influence of the entrepreneurship education variable towards the entrepreneurial competencies of students simultaneously is 61.5%. Meanwhile, the remaining 38.5% is the influence of other factors. The following formula (1) is used to calculate the magnitude of the path coefficient for other variables outside of the study that affects it.

$$\rho_{\gamma}\varepsilon_1 = \sqrt{1 - R_{xy}^2} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$= \sqrt{1 - 0{,}615}$
$= 0{,}620$

Table 5. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.105	1	34.105	156.434	0.000[b]
	Residual	21.365	98	0.218		
	Total	55.470	99			

a. Dependent Variable: Y
b. Predictors: (Constant), X

The results of the significance test in the ANOVA table show that the sig. is 0.000, thus it shows that the entrepreneurship education variable has a significant effect on the entrepreneurial competencies of the student variable.

Partial influence

Table 6. Partial influence

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.667	0.258		2.587	0.011
	x	0.834	0.067	0.784	12.507	0.000

a. Dependent Variable: Y

Based on Table 4, the variable X has a value of Sig. of 0.000. Compared with the value of α, the value of sig. is smaller (0.000 < 0.05). Thus, the significance and magnitude of the Beta (coefficient) of the path variable X to Y is 0.784 (ρ_{yx}) so that the equation turns to be (2).

Y = Pyx + $\rho_{\gamma}\varepsilon_1$ ……. (2)
Y = 0,784X + 0,62ε_1

So that we get a sub-structural Figure 2 along with the path coefficient

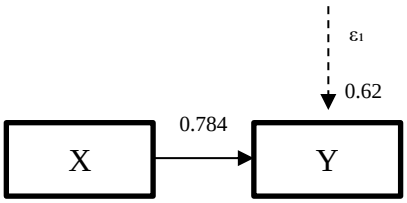

Figure 2. Sub-Structural 1 Path Analysis

Sub-structural Equation 2

$z = \rho_{zx}x + \rho_{zy}y + \rho_z\varepsilon_2$

Table 7. Summary model of X and Y variables concerning Z

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.635[a]	0.404	0.392	0.65415

a. Predictors: (Constant), Y, X
b. Dependent Variable: Z

From Table 7, it is clear that the magnitude of R Square is 0.404. This figure shows the magnitude of the influence of the entrepreneurship education (X) and entrepreneurial

competencies of student (Y) variables on Entrepreneurial Intention (Z) by calculating the coefficient of determination (KD) with the following formula (3):

KD = R^2 X 100% …… (3)

KD = 0,404 X 100%

KD = 40,4%

This figure means that the influence of the variable entrepreneurship education (X) and entrepreneurial competencies of the student (Y) on entrepreneurial intention (Z) simultaneously is 40.4%. Meanwhile, the remaining 59.6% was the influence of other factors. The following formula is necessary to calculate the magnitude of the path coefficient for other variables outside the study that affects it.

$$\rho_z \varepsilon_2 = \sqrt{1 - R_{xy}^2}$$
$$= \sqrt{1 - 0{,}404}$$
$$= 0{,}772$$

Table 8. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.114	2	14.057	32.850	0.000[b]
	Residual	41.507	97	0.428		
	Total	69.621	99			

a. Dependent Variable: Z

b. Predictors: (Constant), Y, X

The results of the significance test in the ANOVA Table 8 show that the sig. of 0.000, thus the conclusion reveals that the entrepreneurship education variable (X) and the entrepreneurial competencies of student (Y) variable have a significant effect on entrepreneurial intention (Z).

Table 9. Partial effect

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	0.953	0.373		2.553	0.012
	X	0.484	0.150	0.406	3.215	0.002
	Y	0.297	0.142	0.265	2.097	0.039

a. Dependent Variable: Z

The results shown in Table 9 reveals that the variable X has a value of Sig. of 0.002. This value of sig. is smaller than the value of α (0.002 < 0.05). Meanwhile, the Y variable has a Sig value. of 0.039. When compared with the value of α, the value of sig. is smaller than the value of α (0.039 < 0.05) Thus, the significance and magnitude of the Beta (coefficient) of the path variable X to Z is 0.406 (ρ_{xz}) and the variance Y to Z is 0.265 (ρ_{yz}) so that the equation becomes (4).

$Z = \rho_{zx} x + \rho_{zx} Y + \rho_z \varepsilon_2$ …… (4)

Z = 0,406 X + 0,265 Y + 0,772ε_2

The structure of the influence of entrepreneurship education (X) and the variable entrepreneurial competencies of the student (Y) on entrepreneurial intention (Z) is seen in Figure 3.

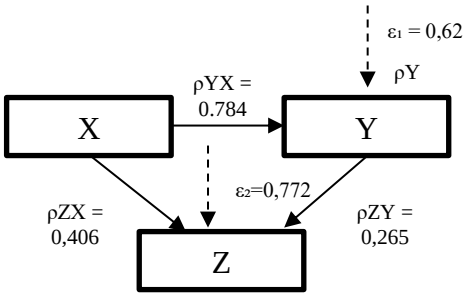

Figure 3. The Structure of The Influence of X and Y on Z Along with The Path Coefficient

Table 1 provides a summary of the effect of entrepreneurship education and entrepreneurial competencies of student variables on entrepreneurial intention based on the SPSS approach. Entrepreneurship education on entrepreneurial intentions has a significant positive effect with a direct contribution of 40.6% which is included in the moderate category. Meanwhile, the indirect contribution value is 20.7%. Thus, the total effect increases 61.3%. Entrepreneurship education has a significant positive effect on students' entrepreneurial competence with a contribution of 78.4%, which is included in the high category. Student entrepreneurial competence has a significant positive effect on entrepreneurial intentions with a direct contribution of 26.5%, which is included in the low category.

Discussion

The general objective of the research conducted is to gain knowledge and conduct scientific studies on entrepreneurship education, entrepreneurial competencies, and entrepreneurial intentions. The description of each variable shows that all variables are in the high category. It means that the level of entrepreneurship education in vocational high schools and entrepreneurial competence influences the students' entrepreneurial intentions. Empirical data analysis re-established that the model of the influence of entrepreneurship education on entrepreneurial intention empirically fits the data. The students' choice of becoming an entrepreneur after graduation indicates the significant effect of entrepreneurship education on interest in entrepreneurship.

Entrepreneurship education must include an elaborative national strategic plan that supports entrepreneurship education programs, the preparation of teachers with elaboration skills, curricula, and the creation of teaching aids in the learning process (Bikse et al., 2014). Teachers as educators must have the ability to develop basic creativity skills such as fluency in thinking, original thinking, and flexible thinking. It shows that creativity training plays a significant role in entrepreneurship education (Turcan & Fraser, 2018).

In this case, the teacher is considered capable of creating learning innovations (Estrellan et al., 2021; Lumbu-ani et al., 2021; Mohamad & Masek, 2021; Nuhu, K. M., & Onojah, 2022). They also must have a creative spirit in forming entrepreneurial learning. They can transmit the courage of business risks to students and direct students to have a leadership spirit, to improve student competence (Heinonen, 2007; Heinonen & Poikkijoki, 2006). A learning process must consider strategy, system design (T. Ismail & Ghozali, 2015), both in the form of learning interactions, classroom management, utilization of learning resources, and assessments (Heinonen, 2007; Heinonen & Poikkijoki, 2006). Therefore, a teacher needs adequate knowledge and skills in learning management. The results of the study indicate that entrepreneurship education has a significant effect on entrepreneurial competencies. Furthermore, some reports explained that in business in general people work in existing organizations, guided by existing routines and structures (Morris et al., 2013), whereas entrepreneurs create new organizations and have their responsibility to determine what activities will be carried out and managed to keep the organization structured, how resources are allocated, find the right resources, and other decisions, so that accurate entrepreneurship education can develop entrepreneurial competencies to support

them.

The studies carried out (Sánchez, 2013) contribute to research on entrepreneurship education by revealing the benefits that students can get from entrepreneurship programs. The study describes a quantitative assessment that entrepreneurship education which has a positive and significant relationship to entrepreneurial competencies. Early introduction of entrepreneurship education to undergraduate students at universities in Singapore has a positive effect on changing perceptions, entrepreneurial intentions, and entrepreneurial competencies among Singapore students.

Empirical research has shown that the existence of general education and special programs on entrepreneurship has a positive effect on students' entrepreneurial intentions. In every educational activity, it is suggested to be able to promote EI (entrepreneurial intention) because entrepreneurship is related to knowledge and skills that stimulate individual motivation to create a new business effort (Zhang et al., 2014). Entrepreneurship can be learned or at least encouraged through education. Students taking entrepreneurship education indeed show a greater intention to start a business (Bae et al., 2014; Cera et al., 2020; Westhead & Solesvik, 2016; Zhang et al., 2014), this is in line with the results of research that entrepreneurship education affects entrepreneurial intentions.

We need to know self-skills to become a successful entrepreneur and to be able to self-reflection about the potential of entrepreneurial competence (V. Y. Ismail et al., 2015). Competence is something positive in a person. It is a talent that makes our work go well. Competence is the knowledge, abilities, characteristics, and attitude concerning the requirement for good performance, especially in entrepreneurship. Some researchers claim that entrepreneurial competencies are necessary to start a business (Inyang & Enuoh, 2009; Man & Lau, 2000; Sánchez, 2011), whereas some argue that a business requires managerial competence (Kræmmergaard & Rose, 2002; Lau & Chan, 2002; Zacca & Dayan, 2018). Other opinions suggest that entrepreneurship requires competence in these two areas (Man & Lau, 2005; Mitchelmore & Rowley, 2010; Pansiri & Temtime, 2008). But opinion (Draksler & Sirec, 2021), focuses on entrepreneurial context on the individual, while the management context focuses on the organization. Competence is learnable. Therefore, education is the first way in providing a theoretical basis for student competence to start entrepreneurship. Research results (Al Mamun et al., 2016; Draksler & Sirec, 2021; Sánchez, 2013) confirmed that students who had higher levels of EC (in terms of knowledge and skills) have a higher level of entrepreneurial intention.

CONCLUSION

Entrepreneurship education has a significant effect on entrepreneurial intentions both directly and indirectly. However, the influence of entrepreneurial education on entrepreneurial intentions through entrepreneurial competence has a lower effect. In terms of direct effect, entrepreneurial education has a significant direct impact on students' entrepreneurial competence. Student entrepreneurial competence has a direct influence directly significant to entrepreneurial intention and entrepreneurship education. For entrepreneurship education to be optimal, teachers must facilitate students to develop a leadership spirit in entrepreneurship learning. Thus, students' entrepreneurial competencies increase. They can recognize and imagine opportunities and formulate strategies to take advantage of opportunities. They must consider increasing entrepreneurial intentions and be eager to start entrepreneurship in the next 1-3 years. Therefore, one of the efforts to improve teacher teaching activities in terms of elaboration skills and fluent thinking skills is to prepare learning materials to be taught with careful preparation, not forgetting to look for other sources of material, so that when giving answers, opinions, or presenting material could be better. Suggestions for further researchers to prepare themselves in increasing student motivation and the role of the environment so that improvements to some things that are considered not good or not optimal in their implementation will provide better results and give benefits for various parties, and with what will be the objectives of learning activities.

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