

The impacts of using modules on students' entrepreneurial attitudes and intentions

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Suggested Citation:

Wahidmurni, W., Pusposari, L. F., Nur, M. A., Haliliah, H., & Lubna, L. (2022). The impacts of using modules on students' entrepreneurial attitudes and intentions. *Cypriot Journal of Educational Science*. 17(8), 2634-2645. <https://doi.org/10.18844/cjes.v17i8.6391>

Received from April 26, 2022; revised from June 25, 2022; accepted from August 14, 2022.

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Abstract

The covid-19 pandemic made classroom-based learning change into online-based digital learning. It leads to the students' need for useful learning resources to study independently. The current research aimed to evaluate the impacts of module-assisted learning on students' entrepreneurial attitudes and intentions. It was designed with a one-group quasi-experimental pre-and post-test, and the whole learning process was online. It was hypothesized that there will be a remarkable improvement in students' entrepreneurial attitudes and intentions after they learn with the module. Data were collected by distributing questionnaires to students of two selected universities. To test the deviation between the two population means, *t*-test formula was used. The results demonstrated that 1) the use of modules can significantly improve students' entrepreneurial attitudes and 2) it cannot significantly increase their entrepreneurial intentions. Online learning of entrepreneurship with modules can increase entrepreneurial attitudes, but to increase entrepreneurial intentions, it is vital to explore learning strategies through maximum use of information technology.

Keywords: COVID-19 pandemic, entrepreneurial attitude, entrepreneurial intention, entrepreneurship education, entrepreneurship module.

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1. Introduction

Students should equip themselves with entrepreneurial knowledge, attitudes, and skills as they play a fundamental role in bringing greener economic development and sustainable societies. To that end, they must be assisted in developing the required skills for decent work and entrepreneurship (UNESCO, 2020). In relation to the entrepreneurship learning, there are two main aspects of concern, attitude and intention. Both are determinants for an individual to run a new business. These can improve the business opportunity of an individual at some point in his/her life (Pounder & Devonish, 2016). Krueger and Carsrud find entrepreneurial intentions to be proven predictors for entrepreneurship behaviour. Therefore, Choo and Wong state that intentions can be used as a reasonable basic approach to figure out prospective entrepreneurial individuals (Indarti & Rostiani, 2008, p. 4).

Some researchers who have conducted research in entrepreneurship education examining the attitudes and intentions of students are Chen et al. (2015), Deveci and Cepni (2017), Jena (2020), Saptono et al. (2020) and Wahidmurni et al. (2020), with diverse results. Saptono et al. (2020) concluded that entrepreneurship education serves an important role to figure out knowledge and entrepreneurship mindsets, leading to students' readiness to run a business. Deveci and Cepni (2017) suggested that entrepreneurship is taught in education programs, and experimental research should be realized in order for the characteristics of entrepreneurship to be transferred. Chen et al. (2015) show a high satisfaction and success of the students over the learning process, yet their entrepreneurial intentions did not increase after 12 learning meetings in the lecture method from a lecturer and 6 guest lectures by practitioners. Furthermore, they recommend that further researches should plan learning modules integrating both entrepreneurship and relevant knowledge to figure out the factors that would increase students' entrepreneurial intentions.

A career as an entrepreneur is expected by the government because it is one of the factors of the nation's development. The prominence of entrepreneurship education has attracted many researchers to study. The latest researches on entrepreneurship education for students are, to mention a few, conducted in Pakistan by Ahmed et al. (2020), in Nigeria by Alao et al. (2020), in Switzerland by Hahn et al. (2020), in India by Jena (2020), in the United States by Liguori et al. (2020), in Italy by Secundo et al. (2020) and in Indonesia by Wahidmurni et al. (2019). The studies are in accordance with UNESCO recommendations about the need for educational institutions to organize entrepreneurship education (Edokpolor, 2020; Wahidmurni, 2020). We can learn from the experience of Massachusetts Institute of Technology, whose students have strong interest to build a start-up business before they graduate in the last three decades or the last 10 years (Roberts et al., 2015).

A decision to be or to behave as an entrepreneur is mostly determined by personal intention. Ajzen (1991) under the theory of planned behaviour (TPB) places intention to behave as a prominent variable to determine one's behaviour, which is dependent on attitude, subjective norms, and perceived behavioural control. Shapero and Sokol (1982) stated that perceived feasibility and desirability can be key predictors of entrepreneurial intentions. TPB has been widely tested in various fields and widely recognised by researchers, like Chen et al. (2015), Ndofirepi (2020), and Vamvaka et al. (2020).

In relation to the development program for entrepreneurship education at any level of education, the world is now confronted by the COVID-19 pandemic, which impacts economic and social aspects of education. One of the real impacts is the difficulty to conduct learning activities face to face, which has been altered to online. Research proved that entrepreneurship education in the COVID-19 pandemic could be challenging to realize because real examples, which are highly necessary, are difficult to obtain (Ratten, 2020). On the other hand, research showed that real experience for the students to perform an action and reflection, which leads to the improvement of entrepreneurship skills, could not be omitted (Kassean et al., 2015).

One way to improve the effectiveness of online learning is developing or making the most of a module. The effectiveness of online learning through learning modules is discussed in the studies of Khalil et al. (2020), Logan et al. (2020), Sofyan et al. (2019), Wallace and Clariana (2020). Chen et al.

(2015) and Deveci and Cepni (2017), on the importance of the modules in entrepreneurship learning, suggest the need to develop a character-based entrepreneurship module to boost students' entrepreneurial attitudes and intentions. A learning module can boost students' understanding of and awareness on business values (Kusumojanto, 2018; Ndofirepi, 2020). Entrepreneurship education determines students' entrepreneurial intentions (Anggraini & Sukardi, 2016; Ndofirepi, 2020; Prasetya & Sukardi, 2016; Rapii & Junaini, 2017).

The test for the entrepreneurship module is necessary in the entrepreneurship course for higher education in Indonesia because there have not been any relevant standards in setting the learning outcomes, the learning process and the assessment system (Sulastri et al., 2017; Wahidmurni, 2020). An entrepreneurship module provides a solution during the COVID-19 pandemic to enhance the entrepreneurial attitudes and intentions of students. When a face-to-face lecture cannot be fulfilled, a module as the learning source can be an effective solution. Mirkouei et al. (2016) denote that students consider the module framework more useful than the traditional written assignment. The effectiveness of a module is also suggested by McIntyre et al. (2018) where students tend to use the materials in the learning module rather than a textbook, and they can learn quickly due to some exercises provided.

Therefore, the formulated research questions are (1) Can the use of modules in learning entrepreneurship improve students' entrepreneurial attitudes? and (2) Can the use of modules in entrepreneurship learning also improve students' entrepreneurial intentions?

2. Method

2.1. Research model

This study is aimed at evaluating the impacts of entrepreneurship module use on students' entrepreneurial attitudes and intentions by employing a one-group pre-and post-test design. It includes one group given a pre-test (O_1), treatment (X), and then post-test (O_2). To measure the treatment, it is done by comparing values of not only the pre-test but also the post-test.

2.2. Participants

The research was carried out in two teacher education study programs in two Islamic universities in Indonesia as the representatives of Java (campus A) and outer Java (Campus B). Each campus was represented by one exploratory class, with 17 students in campus A and 19 students in campus B. The study was held in the even semester of the 2019/2020 with 16 meetings with 3 hours each, from the end of February to June 2020 amid the COVID-19 pandemic.

2.3. Data collection process

The data were collected through questionnaires, covering an attitude instrument developed by Saptono et al. (2018) on a 7-point scale, with attitude indicators involving business opportunity development (reading business opportunities, capturing and making the most of business opportunities), business risk (entrepreneurial failure and time management) and innovation (innovation and business development skills). The other instrument was the 5-point scale entrepreneurial intentions developed by Peng et al. (2012), covering the purpose of being an entrepreneur; the effort to build a business; preparation to start a business; if it fails, I will continue the business until it succeeds; and despite stiff resistance from my parents, I am committed to starting a business. The alternative options for the questionnaire were a 6-point Likert scale.

Before collecting the data, validity and reliability tests were carried out on 31 students outside the experimental class. The instrument validity test results are presented below.

Table 1. The validity of the entrepreneurial attitude statement items

No.	Statement	Coefficient	Probability	Validity
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1.	I am confident to be an entrepreneur	0.68	0.00	Valid
2.	I can easily influence others	0.59	0.00	Valid
3.	I plan my future as an entrepreneur wisely	0.43	0.02	Valid
4.	I maximally do my tasks	0.51	0.00	Valid
5.	I love taking advantage of an opportunity for more useful activities	0.65	0.00	Valid
6.	I am willing to accept any risk for my life success	0.65	0.00	Valid
7.	I like to try new and challenging things	0.79	0.00	Valid

Table 2. The validity of the entrepreneurial intention statement items

No.	Statement	Coefficient	Probability	Validity
1.	My career goal is to be an entrepreneur	0.71	0.00	Valid
2.	I try to create my own business	0.74	0.00	Valid
3.	I have prepared everything to start a business	0.70	0.00	Valid
4.	If it fails, I will continue my business until success	0.75	0.00	Valid
5.	Despite strong opposition from my parents, I am committed to starting my own business	0.70	0.00	Valid

The validity test result with *bivariate Pearson* (Pearson's product-moment) correlation at 0.05 significance level indicated that all the statement items were valid. Meanwhile, the reliability test of the entrepreneurial attitude instrument with seven statement items using Cronbach's alpha formula held a coefficient value of 0.72, and the reliability test of the entrepreneurial intention instrument with five statement items obtained a coefficient value of 0.75. Therefore, the research instrument is reliable as the correlation value of 0.700 or higher has been recommended by many researchers (Jacob, 2017; Taber, 2018).

2.4. Procedure

The experimental procedure was performed in the following stages:

- (1) Preparation stage: designing the research, studying the literature, preparing modules, preparing research instruments, having expert validation and testing the module in small groups in the preliminary research stage (Wahidmurni et al., 2020).
- (2) Implementation stage: determining the research sample, conducting pre-test to acknowledge the students' entrepreneurial attitudes and intentions at the beginning of learning, carrying out online learning by following the instructions in the module, and finally giving a post-test in the last meeting to know the students' entrepreneurial attitudes and intentions after finishing the class.
- (3) Data processing stage.
- (4) Conclusion drawing and preparing research reports.

2.5. Data analysis

Descriptive statistical analysis is used to describe the average and frequency distribution of each variable. The data analysis results are presented as the average score of indicators of students' entrepreneurial attitudes and intentions with six scales. To evaluate the impact of using the module on the changes in students' attitudes and entrepreneurial intentions, this research employed a *t*-test formula. The formula was used to test the deviation of two population means (Abdelrazeq et al., 2020).

3. Results

3.1. The difference in students' entrepreneurial attitudes in learning before and after using an entrepreneurship module

The average score of students' entrepreneurial attitudes from the maximum criteria scale (six) and the percentage after learning by the entrepreneurship module are descriptively shown in Table 3.

Table 3. Students' entrepreneurial attitude before and after attending a lecture with entrepreneurship module

Condition	Campus A		Campus B	
	Scale 6	%	Scale 6	%
Before	4.05	67.50	3.86	64.33
After	4.51	75.17	4.29	71.50
Deviation	0.46	7.67	0.43	7.17

Table 3 shows that the average score of the entrepreneurial attitudes of the students in campus B increased from the medium to a high category, while that of the students in campus A remained in the key category with an increase in average score.

The results of the deviation test (*t*-test) on the students' entrepreneurial attitudes in both campus A and campus B, before and after attending the lectures by using an entrepreneurship character-based module are available in Table 4.

Table 4. The average scores of pre-and post-test for entrepreneurial attitudes

Data	Class	N	Mean	Std. error
Pre-test	Campus A	19	29.8	1.3
	Campus B	17	27.0	1.3
Post-test	Campus A	19	33.3	1.1
	Campus B	17	30.1	1.7

Table 4 presents that the average post-test scores of students' entrepreneurial attitudes in both campuses prove to be higher than that of the pre-test. It indicates an increase in the entrepreneurial attitude of students after going through the learning process by using the module.

Table 5. T-test scores of pre and posttest for entrepreneurial attitudes

Data	Class	Levene's test for equality of variances			T-test for equality of means
		t	Df	Sig (2-tailed)	Std. error
Pre-test– Post-test	Campus A	–2.443	18	0.025	1.4
	Campus B	–2.223	16	0.041	1.4

Table 5 shows a significant difference in students' entrepreneurial attitudes after learning by using the entrepreneurship module. It proves that learning using the entrepreneurship module during the COVID-19 pandemic can enhance students' entrepreneurial attitudes.

3.2. The difference in students' entrepreneurial intentions in learning before and after using an entrepreneurship module

The average score of students' entrepreneurial intentions from the maximum criteria scale (six) and the percentage after learning by using the entrepreneurship module is descriptively shown in Table 6.

Table 6. Students' entrepreneurial intention before and after attending a lecture by using the entrepreneurship module

Condition	Campus A		Campus B	
	Scale 6	%	Scale 6	%
Before	3.87	64.50	3.96	66.00
After	4.29	71.50	4.33	72.50
Deviation	0.42	7.00	0.37	6.50

Table 6 shows that the average scores of the students' entrepreneurial intention at campus B increased from the medium to a high category, and so was that of the students at campus A.

The deviation test (*t*-test) results on the students' entrepreneurial intentions at campus A and campus B, before and after attending the lectures by using an entrepreneurial character-based module are shown in Table 7.

Table 7. The average pre and posttest scores for entrepreneurial intentions

Data	Class	N	Mean	Std. error
Pre-test	Campus A	19	20.4	1.0
	Campus B	17	19.8	1.0
Post-test	Campus A	19	22.6	1.0
	Campus B	17	21.6	1.4

Table 7 shows that the average post-test scores on the students' entrepreneurial intentions in both universities are higher than those of the pre-test. It also suggests the increase of students' entrepreneurial intentions after learning by using the module.

Table 8. T-test scores of the pre-and post-test for entrepreneurial intentions

Data	Class	Levene's test for equality of variances			T-test for equality of means
		t	Df	Sig (2-tailed)	Std. error
Pre-test-Post-test	Campus A	-2.067	18	0.053	1.1
	Campus B	-1.546	16	0.142	1.2

Table 8 shows no significant differences in students' entrepreneurial intentions after learning by using the entrepreneurship module. It proves that learning through entrepreneurship modules during the COVID-19 pandemic cannot enhance students' entrepreneurial intentions.

4. Discussion

4.1. *The effect of entrepreneurship module use on students' entrepreneurial attitudes*

The result of the deviation test in the experimental class on either campus A or campus B shows that the level of students' entrepreneurial attitude significantly increased. It indicates that *online* learning through entrepreneurship modules, by sticking to the learning scenario, can improve students' entrepreneurial attitudes. The module, as an independent teaching material, is evidenced to enhance the students' entrepreneurial attitudes. According to Ruškytė and Navickas (2017), the students perceive that the most efficient learning methods of entrepreneurship are independent learning, cooperative learning, and flexible learning. The current research also strengthens the findings of previous researches by Daliman et al. (2019), Fayolle and Gailly (2015), and Wahidmurni et al. (2020).

The study's results affirm the findings of Bao (2020) where one of the components that supports online learning is an emergency plan to cope with the unexpected incident, for example, the implementation of online business practices in the entrepreneurship courses once offline meetings cannot be made. Although the business practices are not carried out due to the constrained availability of the network, the course results in a significant increase in entrepreneurial attitudes. The result of the entrepreneurship learning module amid the pandemic of COVID-19 corresponds to that in the normal condition. Both increase students' entrepreneurial attitudes. Stamboulis and Barlas (2014) report that the entrepreneurship programme conducted at a Greek university had a significant impact on student attitudes, especially related to the critical purpose, such as students' perceptions on entrepreneurship, their self-confidence to struggle for it and their perceptions on the external environment.

However, a survey by Adnan and Anwar (2020) on undergraduate and postgraduate students regarding their attitude to online learning amid the pandemic suggests that the learning outcomes cannot be achieved as desired because most of the students cannot access the Internet due to technical and financial problems. It indicates the importance of the learning modules to replace the absence of supporting resources, such as learning resources and direct interaction between lecturers and students due to the pandemic.

Therefore, the study result supports the advantages of the use of a learning module compared to the other teaching materials as it characterizes as self-instruction, self-contained, independent, adaptive, and user-friendly. These characteristics can create students' independence in learning, and they are relevant with independent and confident souls, also task and result-oriented in entrepreneurship. It is compatible to Logan et al. (2020) findings, who argue that the students are actively involved in assessing the materials in independent learning. Butcher et al. (2006) state that learning by using the module proves to be effective and efficient and helps learners achieve their learning goals. According to Raposo and do Paço (2011), the learning process should focus on changing personal attitudes more than knowledge because it could significantly lead to the success of establishing business and transcending the perceived entrepreneurship barriers.

4.2. *The effect of entrepreneurship module use on students' entrepreneurial intentions*

The result of the test on students' entrepreneurial intention shows no significant improvement in learning through the entrepreneurship module in both campuses. It means that online learning of entrepreneurship during the pandemic through the module cannot significantly improve students' entrepreneurial intentions. It goes against the findings of the study by Acfv and Sukardi (2016), Prasetya and Sukardi (2016), Rapii and Junaini (2017) and Sofyan et al. (2019), which suggest that the entrepreneurship module developed with various bases proves to increase students' entrepreneurial

intentions. The study is also in contrast with Ndfirepi (2020) research, which concludes that an entrepreneurship education programme directly influences students' entrepreneurial intentions. Barba-Sánchez and Atienza-Sahuquillo (2018) show that the demand for self-reliance is an essential factor in entrepreneurial intentions; it also confirmed a positive contribution of entrepreneurship education towards their entrepreneurial intentions. Anjum et al. (2020) found that entrepreneurship education significantly relates to entrepreneurial intentions, and university supports have a moderating positive impact on the effectivity of entrepreneurship education.

The current study's results strengthen Chen et al. (2015) findings that entrepreneurship courses increase students' satisfaction in learning, but it does not increase their entrepreneurial interest. There found no increase in the entrepreneurial intentions of students after attending the 18-week course with a co-teaching lecture method delivered by a lecturer and experienced speakers (business practitioners) having actual entrepreneurship exposure. A similar conclusion is also made by Kusumojanto (2018) points out that entrepreneurship education influences student's attitudes, but it does not influence their entrepreneurial intentions.

The inconsistency of the findings shows the importance of the other variables beyond entrepreneurship education, which may generate students' entrepreneurial intentions. The TPB by Ajzen (1991) suggests that intentions to behave cannot be directly predicted from the educational programme, but rather from the attitude to the behaviour, subjective norms related to behaviour, and the perception of control over behaviour. It is affirmed by Vamvaka et al. (2020) that the affective and self-efficacy attitude perceived so far is the strongest predictor of intentions, so it is pivotal to highlight the role of emotions in the process of running a business. Liguori et al. (2020) demonstrated that the entrepreneurial attitude plays a considerable role to mediate the relationship of entrepreneurial motivations and intentions; and attitudes are an important precursor to entrepreneurial intention. It indicates the importance of the entrepreneurial attitude as the main predictor for generating students' entrepreneurial intention.

Bagozzi (1981) stated that an attitude indirectly influences one's behaviour through intention. It is in line with the model developed in the TPB that the intention to behave can be predicted by an attitude. Furthermore, the attitude/behaviour can be formulated through educational programs, such as the educational program currently developed to instill competence within attitudes, knowledge, and skills, based on Bloom's taxonomy. Thus, we need to inquire whether learning through lectures by using modules or not can develop students' entrepreneurial intention.

Students' entrepreneurial intentions can grow when the universities integrate the environmental resources with entrepreneurship education; for example, a curricular and extracurricular activity offer, a business incubator unit, and building cooperation with business partners and government (Ahmed et al., 2020; Dou et al., 2019; Secundo et al., 2020; Wahidmurni et al., 2019). They are relatively difficult to meet amid the COVID-19 pandemic, where face-to-face activities cannot be performed. On the other hand, students' perspectives and preferences to online learning modules show that online modalities are well-received, and they agree that online classes save their time and productivity due to the increase in the time utility (Khalil et al., 2020). Most of them prefer online classes for the upcoming years.

5. Conclusion

The use of the entrepreneurship module has proven to significantly improve students' entrepreneurship attitudes during the COVID-19 pandemic, during which face-to-face sessions cannot be made. It proved the key role of learning modules in achieving learning objectives. However, the use of the module cannot significantly increase their entrepreneurial intentions. Therefore, increasing entrepreneurial intentions requires direct or face-to-face practices, such as field visits and marketing practices.

6. Recommendations

The study results indicated the need for further studies to examine the effectiveness of entrepreneurship module in improving students' entrepreneurial attitudes and intentions by further exploring learning strategies and methods that hold the maximum use of information technology. Practically, lecturers can adopt it by selecting the competencies deliverable online and offline when learning turns hybrid.

7. Limitations

Conducting research during the COVID-19 pandemic was highly challenging and was pounded by a lot of obstacles. Some learning scenarios designed in the preliminary research before the pandemic should have been modified. For example, company visits and business practices could not be executed due to the lockdown around the regency. The company visits were modified into watching YouTube videos about the success stories of entrepreneurs, and the business practices were conducted online. The other obstacle was the absence of physical interaction among the members of the business team while running the course assignment. These were perceived to extremely influence the results of the study.

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