

How is the relationship between Entrepreneurship Potential and Student Personality in the Implementation of Science and Technology for Entrepreneurship in Higher Education?

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ABSTRACT

Entrepreneurship learning and training are tedious and rising educated unemployment of higher education graduates. For this reason, an alternative solution is done by higher education through Science and Technology Program for Entrepreneurship. This research aims to explore and describe the correlation analysis between entrepreneurial potential with the personality of students in science and technology for the implementation of entrepreneurship in higher education. The correlation analysis is to obtain preliminary information about the correlation between personality qualities and entrepreneurial potential of students involved in the implementation of science and technology for entrepreneurship in higher education. The research method used was quantitative research which was conducted through questionnaire distributed to 46 students in higher education in order to obtain information about the potential of entrepreneurship and personality of each student after the questionnaire being validated and normal. Next, the data were tabulated and then being analyzed to see the correlation between both variables by using software SPSS V.20. The result of correlation analysis showed 0.589 which meant a positive and significant relationship between personality variables with entrepreneurial potential variables, both at the level of 0.05 and at the level of 0.01, as well as the strength of the correlation is at a medium level. This meant that if an individual's personality is better or in other word is very strong, the entrepreneurial potential will also be very strong. Thus, the implementation of science and technology for entrepreneurship undertaken will provide maximum results towards the entrepreneurial spirit of students in higher education. Besides that, the implementation of science and technology activities for entrepreneurship students are expected to push the unemployment rate of educated, so the students who graduate from college can develop entrepreneurship potential through their own business and able to create job vacancies.

KEYWORDS

Entrepreneurship Potential, personality, Science and Technology for Entrepreneurship

ARTICLE HISTORY

Received 11 January 2017
Revised 17 April 2017
Accepted 19 April 2017

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Introduction

Higher education serves to develop skills and character development, as well as the civilization of the nation's dignity in the context of the intellectual life of the nation (Act No. 12 in 2012). Another function of higher education is developing innovative, responsive, creative, skilled, competitive, and cooperative academicians through the implementation of Tri Dharma Perguruan Tinggi. Higher education also aims to develop a science and technology by observing and applying the values of humanities. One part of higher education is vocational education, whether at the polytechnic, institutions, and universities. Vocational education also prepares learners to be able to face changes in the community. According to Hidayat (2017), "vocational education can be defined as the educational training that includes knowledge, skills, competencies, activities of structural, ability and all the experience of other structural gained through formal education, at work or not, which may increase the chance acceptance of jobs in various sectors of the economy or even allowing people to Become self-reliant by being a job creator." Furthermore, the students should be given the basics of organization and pedagogical vocational education so they understand the application in the world of work (Romantsev, Efanov, Moiseev, Bychkova, Karpova & Tidemann, 2016). In addition, vocational education is required to deliver a competent workforce in order to increase productivity and efficiency as well as the readiness of the international labor market competition in the era of globalization.

To achieve the learning process accordance with Act No. 20 in 2003 section 15, components of learning that can support the learning process are needed. One of the components is teaching strategy to support the education in order to run effectively and efficiently. The way of teaching gives an important role whether learning is success including in entrepreneurship which is known as pedagogy entrepreneurship which has obstacles and difficulties. Consequently, the quality of output and outcome of graduates' students is not good. The educators in higher education and at schools have met these difficulties in teaching students in entrepreneurship courses. The students tended to complain that the theory of entrepreneurship was boring, entrepreneurship courses were boring, as well as all the theory and entrepreneurship courses. It may be irrelevant to the condition that occurred in the field (Fiet, 2000). In addition, the educators might also be boring and irrelevant for the students. Students may not understand that the pedagogy of entrepreneurship can be very interesting. Unfortunately, the fact that there is a process that is used to teach the theory of entrepreneurship can be tedious. One of them is the learning process will be tedious when it is easier for the students to predict what materials will be delivered by the lectures. Good entrepreneurship theory can always pass the test of the application and can be applied in the field.

Almost all universities have entrepreneurship courses but not all of university graduates capable in entrepreneurship including the vocational graduates. In addition, the graduates of any universities only rely solely on their certificates and their competencies to get a job, but still they did not get a decent job. If this condition is left unchecked, the higher education will contribute educated unemployment. Based on data taken from Central Bureau of Statistics, it reported the number of unemployed in Indonesia in August 2015 were 7.56 million people, an increase of 320 thousand persons compared to the same period

last year which were about 7.24 million people. In addition, a very worrying based on national daily newspapers that there were 495.143 unemployed bachelors (Nugroho: 2015). Based on BPS data, the number of unemployed university graduates graduated in February 2015, the educated unemployment rate in Indonesia was 7.45 million or 5.81%. This number is rising, compared to 7.15 million or 5.70% in February 2014. Based on this data, the role of universities should immediately provide real alternative solutions in order not to increase the number of educated unemployed graduates each year. These data indicated the weakness of college graduates in the competitive labor market, it was caused by the learning process is still oriented to the target value.

Educated unemployment happened is certainly due to various factors such as lack of jobs, the higher education and study programs are growing rapidly, and the lack of competence of the graduates or the incompatibility of competencies to the needs of users of labor, and the ability to survive in society with entrepreneurial competence possessed is still not enough. The development of vocational education which is equipped with a highly entrepreneurial competence became possible spearhead in addressing unemployment of graduates educated both non-vocational and vocational graduates. The process of vocational education at the college is not just to produce workers and oriented to market, but it is expected that the vocational graduates are able to develop their competency in their field based entrepreneur which is the university itself expect their vocational graduates being young Techno-preneurship. By the creation of engineering entrepreneur, it directly provides individual improvement and improves the nation's economy in general. In addition, entrepreneurship education will help influence culture and build economic growth (McKeown et al., 2006; Matley, 2005a, b; Kirby, 2004; McMullan and Long, 1987).

The wishes of the students and graduates to entrepreneurship is quite good, it is also supported by various programs in the field of entrepreneurship in universities, such as the Program of Student Entrepreneurs (PMW.Program Mahasiswa Wirausahawan) and Student Creativity Program of Entrepreneurship (PKM-K/Program Kreativitas Mahasiswa bidang Kewirausahaan), thus making the students' interests of entrepreneurship increased enough (Brenner et al., 1991; Fleming, 1994; Hart and Harrison, 1992; Kolvereid, 1996). This entrepreneurship program is a good step in the application of the theory that has been studied in the college. Because, entrepreneurship itself prepares students to be responsible, active individual who has willing to take risks, managing for results and learning from the results, the fundamental reason of entrepreneurship is independence (Ememe & Undie 2010), as well as the need for controls to monitor the condition of the development of entrepreneurship and climate business in this country (Kydyrova, Satymbekova, Kerimbek, Imanbayeva, Saparbayeva, Nurgalieva, Ilyas, Zhalbinova, Jrauova & Kanafina, 2016).

Interest in entrepreneurship that has begun to appear on the student would need to be supported by the readiness of the entrepreneurship learning process in the classroom by teachers. But in fact, the lecturers teach the theory without regard to the implementation in the field. This problem should be a serious concern for educators in higher education, vocational education, especially in higher education. Vocational higher education in the learning

process is very closely with practicing, making tools and workshop in order to produce a good product in the form of hardware or software. The characteristic or these benefits is so different with non vocational major, that the appropriate pedagogy must be based entrepreneurship vocation.

One of forms of learning and training which is relevant to the field of vocational education is based learning model of production, this model facilitates the learner to think, analyze and capable to produce the product (Ganefri, 2013; Ganefri and Hidayat, Hendra. 2015; Kusumaningrum, Ganefri; & Hidayat. 2015; Kusumaningrum, Hidayat, Ganefri, Anori and Dewy, 2016; Ganefri, Hendra Hidayat, Indrati Kusumaningrum, Mega Silfia Dewy and Sartika Anori, 2017). This model can be applied in the implementation of entrepreneurship directly, in teaching and learning entrepreneurship so the students can master the material of entrepreneurship with the concept of learning by doing approach to production-based learning model. This explanation is relevant to the implementation of science and technology for entrepreneurship in higher education by using product-based learning approach. The mission of Science and Technology for Entrepreneurship program is to guide the college to organize a professional, independent and sustainable entrepreneurial services unit, knowledge-based economy with the students who already run a business or started a new business as the target.

The implementation of science and technology for entrepreneurship in higher education should look entrepreneurial activity in higher education, what kind of business that will be created and its potential, what benefits of science and technology and effort that goes, manager's readiness, the facilities provided by higher education and institutions, all of these conditions are described as follows:

Entrepreneurship Activities in Higher Education

The conditions of entrepreneurship in higher education today for the last three years are shown in Table 1, below:

Table 1. The entrepreneurial activity in the last three years of Higher Education

No	Activities	Year
1	Entrepreneurship training for college graduates	2016
2	Entrepreneurship training : to Start being a Entrepreneur	2015
3	Entrepreneurship training: Ready to Enter World Work?	2015
4	Entrepreneurship training: Successful as a Young	2014
5	Entrepreneurship training Higher Education	2014
6	Entrepreneurship training : don't be a civil servant	2014
7	Fourth Higher Students Entrepreneurship Workshop and Program: Ready to create Young Entrepreneurship	2014

8	Technopreneur Seminar and Workshop "Developing Entrepreneurship Learning in vocational school accordance with DUDI"	2013
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The description of the condition and the number of PKMK / PKM, PMW students and students who are starting a new business, a product that has been produced, the potential of the business, science and technology elements are used, the benefits of science and technology of the business, and the constraints will be presented as follows:

Starting a Business and Business Potential

There are 13 types of business which consists of 40 students in higher education who recorded in the activity PKMK / PKM, PMW with business conditions have been initiated and its potential as follows: (1) Galeri Sincan Lucu (Souvenirs Cantik dan Lucu) a business-based Minangkabau culture so this business helps promote and revitalize the Minangkabau culture; (2) Yo'Ice Café, Ice cream which is different from the others in the market. Ice cream is made from yogurt that has many benefits for the body and can be consumed by all ages; (3) Cocky Outbound Training (Outdoor Equipment and Training Outbound), many people have hobbies in outdoor activities; (4) Usahakabimo (Usaha kaos berbasis ilmu dan motivasi / T-shirt business with science-based and motivation), scattering words of motivation that can be felt by the consumers from the products; (5) Part-TC (Padang Automatic and Robotic Training Center), this kind of business doesn't exist in Padang yet and there is an opportunity to develop this business because many enthusiasts as the technicians who wish to learn more and broaden his knowledge specialized in the field of automation and also schools that make it as extracurricular activities. This effort has additional value to introduce the technology early on and promote science and technology especially in Padang and West Sumatra Padang in general; (6) Pelatihan Renang Freestyle Swimming Club, economic cost is quite affordable and adequate facilities for swimming training; (7) PROTOBAGS (Creative and Green Promotional Bags), it is able to increase the value of the promotion of the clients' product / event with products such as bags / goodie bags, screen printing t-shirts, invitations, convection clothes communities, packaging, services branding logo / product, business kits, seminars and other events; (8) Sale of seeds, honey and flow hive tool Anderson. It has great potential due to the environment of West Sumatra is great for beekeeping. In general, honey has a lot of benefits so it is has good potential to sell. These businesses provide knowledge about bees through the Lilliputians Park, so people can enjoy the beauty and have knowledge about the bees; (9) Toolmaker Science Lab experiments. There is not much business that engaged in this field. This business helps educate the nation because it uses digital technology to produce the product and take advantage of student workers who skills related to tools made/product; (10) Cup Buri Tongsiz (Healthy and Nutritious Tuna Fish Porridge). Fish porridge contains carbohydrates and omega and produce a lot of tuna with the cooperation of fishermen around the coast of Padang; (11) Motorcycle Repair Shop (Sejoly Motor), Quality human resources are developed, and financial potential increased if consumers also increased; (12) ERIC (Ecomoni Electric), a business to create a tool that is able

to overcome the waste of electricity and this business has not been widely done by other entrepreneurs, (13) Ampek Kato Adventure Expedition and Photo Gallery, by seeing the potential of tourism is very attractive and has a wide market share. The explanation above is mostly students' business as part of PKMK / PKM, PMW members and students are starting a new business in Higher Education.

The Excellence of Science and Technology of Running Business

The advantages of science and technology of the business that being run are: (1) Galeri Sincan Lucu (Souvenir Cantik and Lucu): Minangkabau Souvenir paper material-based by using sales system with I-Creative (Through Online Media); (2) Yo'Ice Café, products with many benefits such as: refresh the body, calcium is 100% organic yogurt that can be absorbed by the body perfectly, as durable drink; (3) Cocky Outbound Training (Outdoor Equipment and Training Outbound), it is more dominant rental businesses with the confidence and assurance that the ID card had already checked for authenticity by means of online application which is very helpful to keep from the fraud; (4) Usahakabimo (T-shirt business with science-based and motivation), it uses technology for product design, distribution of pamphlets, transactions, and others; (5) Part-TC (Padang Automatic and Robotic Training Center), in long-term program, the students in extracurricular robotics from each school will be taught about the concepts of technology innovation that certainly in the future we will also embrace to create technology products innovation that can solve the problems in the community and of course also has economic value; (6) Training Pool Freestyle Swimming Club, it doesn't use science and technology elements. Only use equipment that is already available such as swimming goggles, swimsuit, floats, etc; (7) PROTOBAGS (Creative and Green Promotional Bags): (a) Services orders online 24 hours; (b) Design consultation online; (c) Sablon product with a screen printing technique; (d) For bags of paper, the offset printing business partners is utilized; (e) Try to provide every product requested by the consumers; (8) Sale of seeds, honey, and Anderson tool hive flow, Anderson hive flow is useful tool: a. No need to dismantle the frame when harvesting honey bees, b. The Frame is completed with wringer in it, so the honey can be tasted directly, c. Excellence in marketing via online by using social media; (9) Toolmaker Science Lab experiments, laser cutting using more neat and precise. The website can be accessed in 24 hours; (10) Cup Buri Tongsiz (Healthy and Nutritious Tuna Fish Porridge), Porridge swordfish with packaging innovations. You can take it with you wherever you want to go. It can be digested rapidly and get knowledge with health information; (11) Motorcycle Repair Shop (Sejoly Motor), the performance and quality of work is the same with another workshop, the price of services and parts are economic, (12) ERIC (Ecomoni Electric), Tool ERIC in production Technoprenuership is able to handle the wasteful use of electricity at home, offices, lecture theaters and others who use electronic devices. A PIR sensor is used to detect human body temperature and motion that will serve as the meeting of humans in the area of tools that can reach the sensor / tool and there will be a concept of electricity savings; (13) Ampek Kato Adventure Expedition and Photo Gallery, by using social media, it can help promote products quickly and plans to launch a business website.

Managers' Readiness, Facilities of Higher Education and Institutions

Science and technology for Entrepreneurship in Higher Education is a facility run by the faculty and staff, which including (1) physical facilities such as offices, laboratories and workshops both on campus and at partner companies of the Universities; (2) an access for opportunities and to establish networks with technology and business support services, resources and information technology, raw material resources, and finance; (3) consulting services that include the aspects of finance, technology, management, and marketing; (4) networks establishment among employers and employers' associations; (5) product development into commercial products; (6) there are five business units in the Faculty of Tourism and Hospitality namely Promotion Unit TH, TH Travel & Organizer, Catering TH, TH Boutique, and TH Salon. IBK in Higher Education is a system that can provide more roles than just a place to hold management training for tenants, but is able to generate, foster and develop sustainable entrepreneurship in order to be a strong and innovative entrepreneurship.

Entrepreneurship Potential and Student Personality

Entrepreneurship potential and someone's personality is a fundamental pillar for building entrepreneurial capabilities. In addition, the implementation of this research, the direction of entrepreneurship potential and personality was seen on the entrepreneurial character of students, such as being brave in making decisions, discipline, love challenges and adaptability. According Zimmerman (1996), there are some characteristics of entrepreneur namely: commitment, willingness to take responsibility, always looking for opportunities, dare to take calculated risks, self-confidence, creativity and flexibility, the desire to obtain information, work hard, has motivation to achieve success, oriented to the future, the ability to learn from mistakes, and able to lead. The aim of this research aimed to see how the correlation between the entrepreneurship potential of students' personality who follow the implementation of science and technology activities for entrepreneurship in higher education.

Materials and Method

The method of this research was quantitative research and conducted by using questionnaire distributed to 6 students in higher education. Before it was distributed, the indicators of the questionnaire were formulated and the variable was analyzed to be the indicators. Then questions and the number of items of questions also were determined and formulated based on the indicators. Next, the questionnaire was validated and tested for normality. After it was valid and normal, the questionnaire was distributed to the students. The data were collected and tabulated by using SPSS v.20 software to see the results of descriptive analysis and correlation between entrepreneurship potential and students' personality. This analysis is to obtain information, a description of the academic potential and the students personality and see how strong or weak the relationship between student academic potential and personality.

Results

Having described the previous explanation, the next step was to check the validity and normality of the data that can be seen as follows:

Table 2. Case Processing Summary

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Entrepreneurship potential	46	100,0%	0	0,0%	46	100,0%
Personality	46	100,0%	0	0,0%	46	100,0%

Table 3. Tests of Normality

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Entrepreneurship potential	,110	46	,200*	,961	46	,131
Personality	,119	46	,102	,951	46	,050

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

After the validity and the normality data were obtained, the data was analyzed by using statistics:

Table 4. Statistics

	Statistics	
	Entrepreneurship potential	Personality
N	Valid	46
	Missing	0
Mean	73,0435	29,3913
Std. Deviation	9,50779	3,87859
Variance	90,398	15,043
Minimum	47,00	19,00

Maximum	95,00	36,00
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Table 5. Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
Personality	29,3913	3,87859	46
Entrepreneurship potential	73,0435	9,50779	46

Table 6. Correlations

Correlations			
		Personality	Entrepreneurship potential
Personality	Pearson Correlation	1	,589**
	Sig. (2-tailed)		,000
	N	46	46
Entrepreneurship potential	Pearson Correlation	,589**	1
	Sig. (2-tailed)	,000	
	N	46	46

Discussions

The description and the explanation of entrepreneurship potential and students' personality and the relationship between entrepreneurship potential and students' personality will be discussed. Based on the data analysis, the results of correlation analysis shows 0.589 which indicates a positive and significant relationship between personality variables with entrepreneurship potential variables, both at the level of 0.05 and at the level of 0.01, as well as the strength of the correlation is at a medium level. This means that if an individual's personality is or very strong, the entrepreneurship potential will also be very strong. Thus, the implementation of science and technology for entrepreneurship undertaken will provide maximum results towards the spirit of entrepreneurship of students in higher education. The data description of questionnaire show that the maximum score at a question "students know very well how to entertain themselves" and minimum score with the statement that "the students are lack of the special ability to influence others". Student's

personality and entrepreneurship potential are closely related to someone's ability. This capability is described in a variety of views, namely: (1) the ability to set life and business goals. A contemplation is needed in setting the goals of life and the business, repeated correction and read and observation in order to understand what we want, (2) the ability to motivate yourself to generate and determine a strong willingness, (3) the ability to take the initiative that is working on something good without waiting for the commands from others, which is done repeatedly so that it becomes a habit of initiative, (4) the habit of initiative that create a after being done which motivating will be appeared, (5) the habit of innovative is the insistence in themselves to always looking for new possibilities or new combinations of what can be used as a tool to present goods and services to the prosperity of the community, (6) the ability to form a cash capital or capital goods, (7) the ability in time management and make himself myself to always be on time in every single thing by not delaying the work, (8) the mental ability that is based on religious beliefs, (9) the ability to familiarize themselves in taking lessons from both good and bad experiences.

Entrepreneurship individuals appear if someone dares to develop businesses and new ideas. The entrepreneurship process includes all functions, activities, and actions related to the acquisition opportunities and the creation of business organizations. This opinion is in line with that entrepreneurship learning can be got through case studies so that a person gains the experience (Andruhina, Dorozhkin, Zaitseva, Komleva, Sosnin & Savinova, 2016). Therefore, entrepreneurship is a job or career that should be flexible and imaginative, able to plan, to take risks, make decisions and do actions to achieve the goal. The requirements of entrepreneurship is should have the ability to find and evaluate opportunities, able to gather the resources needed and act to take advantage of the opportunities. The essence of entrepreneurship is to create additional value in the market through the process of combining resources in new and different ways to compete with other businesses. The entrepreneurial spirit does exist in every person who has an innovative and creative behavior and in every person who likes change, renewal, progress, and challenges. There are six nature importance of entrepreneurship, namely: (1) Entrepreneurship is a value that is manifested in the behavior as the basis of the resource, propulsion, goals, tactics, tips, processes and business results, (2) Entrepreneurship is the ability to create something new and different, (3) Entrepreneurship is the process of applying creativity and innovation in problems solving and finding opportunities to improve the life, (4) Entrepreneurship is a value required for starting a business and developing a business, (5) Entrepreneurship is a process in doing something new and something different which useful and have high value, (6) Entrepreneurship is an attempt to create additional value by combining resources through new and different ways to win the competition. When the nature of entrepreneurship is already owned by someone, then intuition in business will be more sharply. For example, the decision to invest something by choosing based on rational or intuitive, the result is the efficiency of intuitive decisions of the entrepreneurs are relatively very high (Fomin, Alekseev, Fomina, Rensh & Zaitseva, 2016).

Furthermore, there are some of the trends that can be observed in entrepreneurial character in daily activities, namely: (1) no longer enjoys the things that have been used to / still / already organized / arranged and clear.

Students should be always bored with routines which raised expectations and the desire to always changing, there should be an additional, enrichment, or quality improvement, (2) beginning to look out, oriented to wider aspects of problems facing to obtain new opportunities, (3) more brave, because he thinks that it needs to show an attitude of independence or initiative on his own behalf, (4) like to play with imagination and try to express creativity and introduce the results to the other party, (5) because stand on himself that makes him has a different desire to go ahead, and tolerance of differences from the other party, (6) states an initiative after the idea was initially accepted and developed, and can be accounted for from several angles. He assumes that the initiative is not finished yet, he is even open-minded for modifications, (7) with the hard work and progress step by step, he reaches arises a sense of confidence and more basic optimism, (8) the attitude and behavior of entrepreneurship stated above, are approached and combined by learning business management skills in the form of product planning and development, market penetration and development, organization and communication of the company, finance, and others, (9) work hard, detail and earnest but the aspects of risk cannot be released until the acceptable limit, then with such risks, determination, commitment, and substantiality of the heart were taken to choose alternative.

On the other hand, an entrepreneurial spirit characterized by patterns of behavior can be seen as follows: (1) innovation is the effort to create, find and accept new ideas, (2) encourage to take risk which is the effort to consider and accept the risk in decision and in the face of uncertainty, (3) the managerial capacity, namely the efforts made to carry out the management functions, such as planning effort, the effort to coordinate, efforts to maintain the smooth running of a business, and businesses to monitor and evaluate the business, (4) leadership is motivating, implementing, and directing toward business objectives.

Conclusion

Based on the results and discussion of this study, there are several conclusions that can be drawn:

1. There is a positive and significant relationship between personalities with entrepreneurship potential variables, both at the level of 0.05 and at the level of 0.01, as well as the strength of the correlation is at a medium level.
2. The students' ability in entrepreneurship can be built and developed.
3. The process of entrepreneurship includes all functions, activities, and actions related to the acquisition opportunities and the creation of a business organization. Therefore, entrepreneurship is a job or career that should be flexible and imaginative, able to plan, to take risks, make decisions and do actions to achieve the goal.
4. Innovation, courage, managerial and leadership are an obligation that must be possessed in the development and establishment of entrepreneurship potential and students' personality.

Based on the research, several suggestions are proposed as follows:

1. It is suggested to the next researchers to perform in-depth assessment and study of entrepreneurship potential associated with the various variables

associated with students' emotional and educational psychology in higher education.

2. It is suggested for lecturers that can use the results of this research as a basis for learning activities and entrepreneurship training in higher education.

3. It is suggested for students to can look at what obstacles, difficulties and constrains that they face after receiving information about the relationship between the entrepreneurship potential of personality of students, students, so it can be optimized.

4. It is suggested to university leaders to do in-depth study of the results of this research in order to design an interesting training and entrepreneurship learning and provide a real experience for students at the college.

Disclosure statement

No potential conflict of interest was reported by the authors.

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