

# The effect of online laboratory by using blog web as a digital marketing toward students' achievement with different motivation Levels in Entrepreneurship Learning Practicum

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Effects Of Using a Web Blog in Online Laboratory as A Digital Marketing Platform Towards Students' Achievement with Different Motivation Levels in Entrepreneurship Learning Practicum

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ABSTRACT

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**Keywords**

Digital marketing, entrepreneurship course,  
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**Purpose:** This study aimed to examine the effectiveness of online laboratory as a digital marketing platform for students' learning practicum in an entrepreneurship course and to examine whether there is interaction among teaching strategies (online laboratory using blog web as a digital marketing platform) and students' motivation levels in terms of students' achievement in an entrepreneurship learning practicum course.

**Method:** This study used quasi experimental research design. The participants comprised 94 students of Economics Education department, STKIP PGRI Jombang, Indonesia, out of which 47 students were treated as the experimental class to implement online laboratory entrepreneurship as a digital marketing platform for students' learning practicum, while the other 47 students formed the control class. The data was collected through an achievement test and analyzed by independent-sample t-test, and a posttest between the experimental and control classes. ANOVA was used to find out the interaction among teaching strategies, motivation and achievement by implementing online laboratory as a digital marketing platform for students' learning practicum in learning entrepreneurship course. **Findings:** The findings revealed that implementing online laboratory entrepreneurship as a digital marketing platform was effective for students' learning practicum in learning entrepreneurship course. **Implication:** The study provides new insights for entrepreneurial teachers to apply online laboratory entrepreneurship as a digital marketing tool using a blog.

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## Introduction

Marketing and business activities in the current era are mostly based on exchange of communication about the product between the manufacturer and the consumer. The product is introduced to the consumer by the type of bait and with a full set of specific sources of search information. The decision about the product made by the consumer is reviewed and integrated by the company, on which its whole reputation is based. During this whole process, two-way communication is the key element, when the company removes its monologue and establishes a dialogue through various platforms including the social media with the view to achieve several goals including brand identification and visibility, new marketing techniques, and so on (Anisimov, 2017; Çizmeçi & Ercan, 2015).

Entrepreneurship emerged and flourished in the late stages of capitalism, when it was designated as the fourth element of production. The reason for this was economists' recognition of the importance of entrepreneurship in the advancement of the economy. Despite its relatively brief history, this factor of production is already popular and fast developing. In the long run, the goals of any company entity are to maximize profits, decrease the cost of own production, and meet the demands of purchasers. In an educational environment, the subject of entrepreneurship should assess students' activities, hard work and determination to start a new business (Iswahyudi & Iqbal, 2018). Formal entrepreneurship education is one of the most effective factors in developing entrepreneurial motivation because the students are provided with knowledge dealing with how to make a good business, and learn about financial management and effective marketing. Handayani, Anggraeni, and Anggoro (2022) stated that entrepreneurial education (EE) can include topics such as business planning, financial management, marketing, and leadership, among others. Developing these skills and knowledge can boost the self-confidence and motivation of aspiring female entrepreneurs.

A paradigm shift has been felt due to the technological advancements from traditional to modern marketing systems and strategies, specifically through social media, resulting in major societal changes. Communication through social media is very normal when everyone has the access to the Internet, which enables to emphasize on such aspects of marketing a product, or disseminating its information among the people, and creating an entrepreneurial linkage between the manufacturer and the consumer. Social media has facilitated to run an online business, making it easier for people to buy and sell items frequently. However, these changes have added difficulties and challenges for business actors who use social media to manage Digital Branding, though not all business actors have the ability to do so due to the lack of understanding of social media or absence of Internet skills.

To address this, an entrepreneurship lesson comprising aspects like Internet and social media, is currently being taught in universities in order to motivate students in learning entrepreneurship, though the absence of a learning platform that can support online entrepreneurial learning with digital branding material content is a problem in itself (Charlesworth, 2018; Dewi & Darma, 2019; Zhang, Wang, & Owen, 2014). Entrepreneurial motivation is defined as the passion, ambition, and goals that motivate people to create their own firms (Žur, 2021). It plays an important role in paving the entrepreneurial path, which can also be seen as the motivation and determination to turn a business idea into a profitable

one (Shahzad et al., 2021). Research has proved that those who wish to start business firms, entrepreneurial ambition and motivation connect strongly with their entrepreneurial drive. Increased entrepreneurial drive leads to increased motivation, which increases the likelihood of establishing and growing a successful business (Meressa, 2020).

It is important to improve learning quality of entrepreneurship education in universities and other higher education institutions. Students often face challenges of the 4.0 industrial revolution era. Universities must be capable of producing capable and competitive alumni, which is possible only when universities optimize their resources in and create a quality teaching and learning process. STKIP PGRI Jombang is one of the private colleges dedicated to continuous quality improvement. The college has made numerous efforts to improve the quality of teaching in order to predict the desired learning outcomes. The alumni of the college have passed very satisfying comments on the learning outcomes of this college, among which includes a comment related to learning at this college being extremely beneficial to get the jobs they hold. Nonetheless, it was asserted that some skills need to be improved like the information technology competence, English language competence, and cooperation and adaptation competences (Nurkhin, Setiyani, & Widhiastuti, 2019).

There are numerous strategies that can be used to acquire these competences and improve the quality of learning in higher education, particularly in the subject of entrepreneurship. A variety of learning strategies can be designed to improve the quality of teaching, including the use of peer tutoring learning in entrepreneurship. Online laboratory as a digital marketing platform for students' entrepreneurial learning practicum is one of teaching strategies that can be implemented to enhance the learning quality of any entrepreneurial course. Digital marketing is based on the most frequently used online channels; they are dynamic, changing from year to year, and are always influenced by market trends. In short, digital marketing is a continuous process of review, analysis, explanation, and promotion that helps to establish stronger brand-consumer relationships, effectively identify consumer relationships, and attract attention. Bizhanova et al. (2019); Ritz, Wolf, and McQuitty (2019) have stated that the impact of this type of unconventional, online marketing has been significant, affecting sales and customer numbers and, at best, dictating commercial tendencies. Digital marketing methods through social media are also very popular (Anisimov, 2017; Bizhanova et al., 2019; Çizmeçi & Ercan, 2015). Web-based marketing campaigns using social media, mobile apps, and other digital communication technologies have permeated billions of people's lives, determining, at best, the commercial trends.

This study aimed to go beyond traditional lecture-based teaching approaches which have proved to be less effective, and focus on more practical and experiential learning strategies. One such strategy sampled in this study was the use of online laboratory technique to teach digital marketing, wherein the blogging technique is offered as students' entrepreneurial practicum. By integrating online laboratory through a blogger facilitated by the teacher has given positive pedagogical implications as it exposes students to real-world entrepreneurial challenges and opportunities. This technique also promotes entrepreneurial drives in students more effectively than traditional lecture-based instruction (Singh et al., 2022). Moreover, establishing any entrepreneurship-based teaching technique in an educational system can boost students' self-efficacy and ambition, two important factors that influence their entrepreneurial motivation.

Based on the aforesaid, this present study was designed to accomplish the following research objectives:

1. To examine how effective is the online laboratory strategy by using web blogging as a digital marketing platform toward students' achievement and improving the motivation level in entrepreneurship learning practicum course
2. To examine the relationship between the online laboratory strategy by using web blogging as a digital marketing platform toward students' achievement and improving the motivation level in entrepreneurship learning practicum course

### Literature Review

- *Digital Marketing*

The term "digital marketing" refers to the use of internet technology in marketing strategies, particularly in promotion of a product's existence and raising its brand awareness, and to keep up with the current advancements in digital technology (Nadya, 2016). This "digital marketing" strategy uses web-based media such as blogs, websites, emails, and social networks (Fawaid, 2017). As new technologies emerge at a tremendous speed in the 4.0 industrial revolution, they also bring with them new challenges and changes in people's lives. With educational technology undergoing a paradigm shift in global acceptance, both educational leadership and academia are incorporating virtual lab options with real-time guidance and feedback. While virtual labs are not a new phenomenon and have been around for some time, access to more advanced virtual learning environments (VLE) and industry-grade equipment has given this concept a whole new meaning in an educational context. With the arrival of the disruption era, everything becomes easier, faster, and less expensive. As a result, consumer behavior also changed in response to the requirement of the use of the internet technology and various types of social media (Nurmansyah, 2019), e-commerce, and the large number of people who actively use digital technology for their various needs (Nadya, 2016).

Traditional marketing media, such as printed media, are being displaced by internet media, which can be accessed through technology such as computers and smartphones. Such circumstances have created a new environment and transformed an old culture into a new culture for internet users. The use of digital technology has particularly changed the way marketers communicate with their customers (Ritz et al., 2019). The use of digital marketing in marketing cases has increased customers' knowledge based on their needs. According to the Indonesian Digital Marketing Association *Digmind* (2020), there are ten types of digital marketing. (1) Content marketing, the creation and distribution of content for the target market is the main objective of the digital marketing strategy; (2) Search engine optimization (SEO), which is the process of obtaining either free or paid high quality traffic; (3) search engine marketing (SEM), a digital marketing strategy, is a website's visibility on search engine results pages (SERPs) like Google, Yahoo, and Bing; (4) Social media marketing (SMM) is the practice of using social networks to draw in customers. Business people can create positive relationships with customers by using social media; (5) Pay-per-click advertising (PPC) is such as Google Adwords, act as advertisers and charge money to



each person who accesses the website; (6) Affiliate marketing, which is a form of digital marketing in which a user opens into a business relationship with a businessman or a company in order to receive a commission for new business traffic; (7) Email marketing, which makes use of email as a promotional medium for a product; (8) Instant messaging marketing, stands for marketing via short messages; (9) Radio channel advertising, and (10) Television advertising.

- *Online Laboratory*

An online laboratory platform provides students with new and exciting immersive learning experiences, resulting in higher engagement and knowledge retention. An online or a virtual laboratory is mainly a virtual or remote learning environment designed to develop students' abilities to conduct laboratory experiments (Charlesworth, 2018; Dewi & Darma, 2019; Zhang et al., 2014). It is a valuable learning tool that enables students to conduct experiments remotely at their own pace and convenience. In contrast to the physical lab environment, virtual labs employ a variety of pedagogical techniques proven to aid in the comprehension of theoretical information, such as active learning, visual-based learning, and entrepreneurial practicum courses.

- *Web Blog*

A blog is a type of online journal or informational website that displays the most recent posts at the top of the webpage. Blogs are frequently run by people who want to share their thoughts and opinions on specific subjects or topics. Blogs about fashion, food, and travel are a few popular ones. Blogs can include pictures and videos in addition to text. Marketers frequently use blogs, in addition to social media platforms such as Twitter, to communicate with their target audience and build rapport. Businesses frequently integrate blogs into their main corporate websites and use them (Ashwini & Varma, 2020; Kingsnorth, 2016). By creating content through a web blog, students can promote their product digitally. The practice of producing and disseminating content with the intention of luring, gaining, and engaging target audiences in order to promote customers' profitable actions is known as content marketing. In the era of the Internet and increased web traffic, direct sales, brand awareness, customer retention, brand loyalty, and new customer acquisition are all goals of content marketing (Charlesworth, 2018). This claim is supported by earlier research of Bilgin (2018), which found that social media marketing activities have a significant impact on brand awareness, image, and loyalty, while their effects on consumers manifest as brand awareness.

Having taught through web blogging and the use of social media, students would get the opportunity to broaden their skill sets and apply practically what they have learned and experienced in the classroom during the Entrepreneurship Practicum, across their professional networks and business situations. Students build on and apply the knowledge and skills learned from courses taken in a variety of career areas as they get ready for an entrepreneurial career in their career cluster. Depending on the nature and severity of the students' need for a work-based learning experience, practicum experiences can be paid or unpaid and take place in a variety of settings. Students use their interpersonal and personal skills to improve their own performance in the workplace (Masala, 2016; Mulka, 2018).



Figure 1. Students' Blogger for Digital Marketing in Entrepreneurship Course

- Students' Entrepreneurship Motivation Level

To increase students' interest in entrepreneurship, students' motivation needs must be met (Malebana, 2014). Intrinsic motivation and extrinsic motivation are two types of motivation (Locke & Latham, 2004), each representing a particular type of behavior control and is supposed to qualify autonomy (Gagné & Deci, 2005). Intrinsic motivation happens when someone engages in a rewarding activity at a specific time, while extrinsic motivation occurs when behavior is used for a purpose other than its own (Gagné & Deci, 2005; Howard et al., 2016). Both of these serve as catalysts for transforming intentions into actions. According to empirical evidence, an individual's entrepreneurial aspects are influenced by their entrepreneurial mindset orientation (Frunzaru & Cismaru, 2021; Mahfud et al., 2020). According to experts, there is a positive relationship between having an entrepreneurial motivation and having entrepreneurial ambitions (Do & Dadvari, 2017). The results of this study suggest that students can benefit from having an entrepreneurial perspective in this context. Other studies on the impact of entrepreneurial orientation on entrepreneurial ambitions at the organizational level (Frunzaru & Cismaru, 2021; Sahoo & Panda, 2019) found that entrepreneurial motivation positively promotes the goal of entrepreneurship, and a strong beneficial relationship between goals and entrepreneurial tendency (Do & Dadvari, 2017).

• *Entrepreneurship Course*

Entrepreneurship course is one of compulsory courses in economics education department of STKIP PGRI Jombang, Indonesia. The minister Education of Republic Indonesia has decided that all of departments in higher education must have a course in entrepreneurship. Teachers must develop entrepreneurial abilities in order to improve their use of entrepreneurial skills in teaching and facilitating students to improve their entrepreneurial perspectives. According to Bakar, Bukhari, and Bahrin (2020), increasing an educator's skills can improve the effectiveness of teaching and facilitation, appealing students to learning. According to the findings of studies conducted in Malaysia and internationally, teachers with entrepreneurial abilities can assist students in preparing to enter the workforce after graduating school.

Joseph (2017) reinforces this idea by mentioning that one of the initiatives to strengthen teachers' teaching skills is to develop in them adequate and relevant entrepreneurial talent that can help them prepare students to acquire a job that can meet the country's workforce needs. As a result, Special Education teachers must be aware and skilled in order to assist students in living independently and gaining work and income to sustain their lives.

**Methods**

• *Research Design*

This research was conducted in a private college in Indonesia, STKIP PGRI Jombang, by using quasi experimental research design to compare two teaching strategies between experimental class and control class. The research design is presented in Table 1.

**Table 1**

*Experimental Design*

Teaching Strategy	Experimental Class	Control Class
	Post-test	Post-test
in	Online laboratory as a digital marketing	Students' learning marketing
Entrepreneurship	for students' learning practicum in	practicum in learning
Course	learning entrepreneurship course	entrepreneurship course

There were three variables in this research study, namely one independent variable (Online laboratory as a digital marketing platform for students' learning practicum in an entrepreneurship course and students' learning marketing practicum in an entrepreneurship course), one moderator variable (students' motivation level) and one dependent variable (students' achievement in entrepreneurship course). Based on this, following two hypotheses were framed for this study:

- H1: Online laboratory by using blog web as a digital marketing toward students' achievement with different motivation levels is effective in an entrepreneurship learning practicum course;
- H2: There is the interaction between the teaching strategy using blog web in an online laboratory platform as a digital marketing tool and students' motivation levels toward students' achievement in entrepreneurship learning practicum course.



- *Sampling and population*

10 The population of the study comprised the fourth-semester students of an Entrepreneurship course of Economic Education department, STKIP PGRI Jombang in the 2019/2020 academic year. There were four sections, A, B, C, and D, with a total number of 147 students. Adopting the non-random sampling technique, two sections were sampled for this study, and 47 students from each section were identified, making the total sample size of 94 students. One section was called an experimental class and the other was known as a control class. The experimental group was given access to the online laboratory platform and the web blog to be used for digital marketing by students' learning practicum in an entrepreneurship course while the control group was not provided any such access and they completed their practicum with conventional methods.

- *Research Instrument*

There were two instruments in this study: (1) students' motivation questionnaire; and (2) classroom tests of the marketing materials of the Entrepreneurship course. The data of this study was taken from students' score of the marketing materials of Entrepreneurship course, obtained in the students' marketing practicum. Both the internal and external validity were controlled by assessing the items of the questionnaire and the tests. The questionnaire was used to measure students' motivation levels and to classify them into high and low levels of learning marketing materials of Entrepreneurship class. The questionnaire used the Likert scale in which the questionnaire was designed with related indicators of students' reading motivation on a 4-point scale constructed with Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). Table 2 presents the score for each category on the scale while Table 3 categorizes students' motivation as high and low based on their score.

**Table 2**

*Motivation questionnaire score*

Option	Category	Score
1	Strongly Agree	4
2	Agree	3
3	Disagree	2
4	Strongly Disagree	1

**Table 3**

*Categories for students' motivation*

Score	Description
81-160	High motivation
40-80	Low motivation

In addition, a classroom test of the marketing material of Entrepreneurship class was used to measure the effectiveness of online laboratory. The students were given access to a web blog as a digital marketing platform toward students' achievement with different motivation levels in learning entrepreneurship practicum and to measure the impact of the interaction among teaching strategies, that is, online laboratory using web blog as a digital marketing platform and students' motivation levels toward students' achievement in entrepreneurship learning practicum course.

Before testing it on the students, the test was validated by employing content and construct validity with expert judgments, i.e., entrepreneurial lecturers of the Economics Education Program of STKIP PGRI Jombang. The researchers also matched the tests with the lesson plan based on the curriculum of the Economics Education Program, STKIP PGRI Jombang.

- *Data analysis*

The data of this study was collected in the form of the degree of students' marketing achievements in the entrepreneurship course taught at the Economics Education Program, STKIP PGRI Jombang. The test was given to both experimental and control classes. Each student was given a written task to create their promotion to market some products as their post-test. The result of the test was analyzed with the SPSS version by employing an inferential analysis. The test was used to answer the objectives of this study.

### Results

Table 4 presents the teaching scenario of online laboratory of digital marketing in students' entrepreneurial practicum. There were three steps involved in the data collection: need analysis, making content marketing, and search engine marketing. In each step, students were asked opinions about various scenarios and challenges associated with each scenario.

**Table 4**

*Teaching Scenario of Online Laboratory of digital marketing in students' entrepreneurial practicum*

Step	Description	Challenge
Need analysis	Ask students to make need analysis to understand the customers' demand in market.	To lead the students a big opportunity to do need analysis to develop their critical thinking and creative thinking in learning digital marketing for their entrepreneurial course.
Making content marketing	Ask students to start the blog with a topic and working title. Ask student to write an interesting introduction. Ask students to organize the content and market. write the content to answer the market demands. Ask students to edit or verify and fix the formatting of their own posts, featured images, visual appeals, topics, and tags by consulting with their lecturer.	To encourage students become more creative, critical and responsible To make students focus on creating and distributing content for the target
Search engine marketing	Ask students to share their content in the web blog to social media such as in their WhatsApp group, Instagram, Facebook, Twitter, etc.	To provide students with the experience, through their entrepreneurial practicum, how the application of social media platforms is used for marketing purposes. Business people can create positive relationships with customers by using social media.

The primary aim of this study was to accomplish the two objectives of the study and test each respective hypothesis. The first objective dealt with checking the effectiveness of online laboratory strategy of using web blog as a digital marketing platform toward students' achievement with different motivation levels compared with conventional teaching strategy in entrepreneurship learning practicum course. The researchers employed the inferential statistics method to analyze the data which comprised a test of normality (Table 5) and test of homogeneity (Table 6) with the help of a SPSS program prior to making an inferential analysis.

**Table 5**

*Tests of normality*

	Strategy	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Achievement	1	.153	94	.610	.840	30	.721
	2	.254	94	.610	.815	30	.721

<sup>a</sup>Lilliefors Significance Correction

The result of the normality test (Table 5) showed that the significance achievement of teaching strategy experimental (0.61) and control class (0.61) were higher than 0.05. It meant that achievement of teaching strategy by implementing online laboratory as a digital marketing for students' learning practicum in learning entrepreneurship course and students' learning practicum in conventional teaching strategy of entrepreneurship course data had normal distribution.

**Table 6**

*Test of homogeneity of variances Achievement*

	Levene Statistic	df1	df2	Sig.
	.869	1	58	.255

The result of the homogeneity test (Table 6) showed that the significance values of achievement (0.355) were higher than 0.05. It meant that the data was homogenous.

Table 7 presents the descriptive analysis of the post test of both the groups. The mean score of experimental group shows 55.008, while in the post-test the mean score of control group was 37.003. The result depicts that there was an improvement of 18 points by only comparing mean scores of experimental and control groups.

**Table 7**

*Group Statistics*

	Group	N	Mean	Std. Deviation	Std. Error Mean
Motivation	Experiment	47	55.008	4.60814	.67217
	Control	47	37.003	6.52633	.95196

Table 8 presents the results of the output-paired sample test. It was found that significant value (2-tailed) was 0.000 less than 0.05 (0.000<0.05). It means that null hypothesis is rejected and alternative hypothesis is accepted so it can be concluded that there is significant different dealing with the main score of students' achievement between experimental class and control class. In other words, there is an effect of the use online

laboratory as a digital marketing for students' practicum to enhance the students' achievement in learning entrepreneurship course.

**Table 8**

*Independent Samples Test*

	F	Sig.	Levene's Test for Equality of Variances	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference			
									Lower	Upper		
Motivation			Equal variances assumed	18.18	.000	15.33	92	.000	17.872	1.165	15.557	20.186
			Equal variances not assumed			15.36	82.73	.000	17.872	1.165	15.554	20.190

The second objective dealt with examining the relationship between online laboratory strategy by using web blogging as a digital marketing platform toward students' achievement and improving the motivation level in entrepreneurship learning practicum course. Table 9 presents the Between-Subjects Factors of each value label, while Table 10 shows descriptive analysis revealed from the post test of the mean score of both groups.

**Table 9**

*Between-Subjects Factors*

Group	Value Label	N
1	Experiment	47
2	Control	47

The descriptive analysis as revealed in Table 10 shows that in the post test the mean score of the experimental group was 55.00, while the mean score of control group was 37.003. The result depicted that there was an improvement of 18 points by comparing mean scores of experimental and control group.

**Table 10**

*Descriptive Statistics of Dependent Variable: Motivation*

Group	Mean	Std. Deviation	N
Experiment	55.008	4.60814	47
Control	37.003	6.52633	47
Total	46.1277	10.59644	94

Table 11 shows that the significant values on teaching strategies and students' motivation levels were 0.000 which are lower than 0.05(0.00 < 0.05).

**Table 11**

*Tests of Between-Subjects Effects*

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	7506.383 <sup>a</sup>	1	7506.383	235.207	.000
Intercept	200009.532	1	200009.532	6.267	.000
Group	7506.383	1	7506.383	235.207	.000
Error	2936.085	92	31.914		
Total	210452.000	94			
Corrected Total	10442.468	93			

<sup>a</sup>R Squared = 0.719 (Adjusted R Squared = 0.716)

It is evident from the results that there was an interaction between teaching strategies (online laboratory by using blog web as a digital marketing) and students' motivation levels toward students' achievement. Therefore, the null hypothesis was rejected and the alternative hypothesis, which stated, the interaction between teaching strategies (online laboratory by using blog web as a digital marketing platform) and students' motivation level toward students' achievement in entrepreneurship learning practicum course was accepted.

### Discussion

The objective of this study was to investigate whether the use of online laboratory as a digital marketing platform for students' learning practicum in learning entrepreneurship course was effective and could improve the students' ability to market a product after learning an entrepreneurship course. The results of this study showed that online laboratory as a digital marketing platform for students' learning practicum can improve the students' ability, as it was evident from their score of this course. The results of the experimental group contrasted with that of the control class, where the latter class was taught by conventional teaching strategy. The difference in post-test between experimental class and control class depicted that there was a significant difference between the two in terms of achievement of the entrepreneurship course.

The descriptive analysis (Table 10) further revealed that the use of online laboratory as a digital marketing platform for students' practicum in learning entrepreneurship course was more effective than the use of students' conventional learning marketing practicum in learning entrepreneurship course. These results also infer that the alternative hypothesis was accepted and the null hypothesis was rejected. These results are also the evidence of the use of technology in the form of online laboratory as a digital marketing platform for students' learning practicum, which ultimately proved effective in improving students' ability to promote a product. The Indonesia education ministry also recommends integrating teaching strategy with technology in higher education curriculum to suit the requirements of the 21st century workplaces. This claim can also be found in several previous studies (Ashwini & Varma, 2020; Dewi & Darma, 2019; Ritz et al., 2019).

By offering an online laboratory platform for students' practicum in an entrepreneurship course, it automatically provided them the opportunity to do something authentic. It is in line with some previous studies like Joseph (2017), who stated that education influences the interest in entrepreneurship in international students; Zhang et al. (2014), who confirmed that students can be encouraged with the high intentions to become entrepreneurs through online practicum in their entrepreneurship program. It indicates that entrepreneurship courses must be prioritized in the educational environment, especially in universities.

The results of this study further inferred that digital technology is a defining feature of the fourth industrial revolution. The very implementation of an online laboratory as a digital marketing platform for students' learning practicum hints that a disruptive era has arrived, making everything simpler, quicker, and less expensive. It is in line with some previous studies (Arifah, 2015; Nurmansyah, 2019), which highlight how the widespread use of internet technology has resulted in enhanced consumer behavior and advancement of various social media platforms, leading to the rise of e-commerce; or (Nadya, 2016) who claimed that the number of internet users have made an impact on the quick development of digital technology. On the contrary, a few studies are in conflict with the findings of this study. Pérez-Fernández et al. (2022) for instance found that students have no influence on their entrepreneurial intent by using online instruction; rather it is the social capital and the strength of social networks that play an important influence in developing individuals' entrepreneurial cognition. Mahfud et al. (2020) also believed that online instruction in entrepreneur practicum course does not directly affect students' entrepreneurial motivation.

An interesting part of this study was that it recommended the use of a blogger on the online laboratory while creating the digital platform. A blog is a kind of instructive web page or online journal which puts all the posts of people who express their views and opinions on specific subjects or topics. Among the most well-liked blogs are those that discuss fashion, gastronomy, and travel. Of course, in addition to text, blogs can also contain images and videos. In addition to social media sites like Twitter and Facebook, marketers frequently use blogs to engage with their target audience and establish rapport. Businesses regularly use and incorporate blogs into their primary business websites (Ashwini & Varma, 2020; Kingsnorth, 2016; Zhang et al., 2014), thus making them as a digital marketing platform.

Entrepreneurs who use digital marketing can effectively sell their products (Özoglu & Topal, 2020). No entrepreneur in the current era can escape the influence of digital technology. This finding is in line with previous studies and theories that state the use of internet technology in marketing strategies, particularly promotion, as "digital marketing" in order to stay up with the most recent developments in digital technology (Nadya, 2016). Web-based media, including blogs, websites, emails, and social networks, are used in "digital marketing" strategies (Fawaid, 2017). The intrinsic and extrinsic motivation students' entrepreneur course are also motivated by the innovative teaching strategies (Gagné & Deci, 2005; Howard et al., 2016).

Finally, this study has thus depicted that learning by teaching strategy implementing an online laboratory for digital laboratory of students' learning practicum can improve the students' ability to practice how to market the products digitally. Entrepreneurship



education in higher education is vital regardless of one's field or profession (Ramsgaard & Blenker, 2021; Sutiadiningsih, 2022). An entrepreneurial motivation always supports creative and imaginative ideas, adds value, seizes opportunities, and encourages to take risks. Therefore, it is very critical such measures should be adopted in the teaching of entrepreneurship courses in universities that enhance entrepreneurial motivation among students (Rae & Melton, 2017). As results revealed, it is also important that there should be interaction between teaching strategy, and students' motivation towards students' achievement in entrepreneurship course.

### Conclusion

The objective of this study was to investigate whether the implementation of online laboratory as a digital marketing platform for students' learning practicum in learning entrepreneurship course was more effective than conventional teaching strategies. To achieve the purpose of the study, an entrepreneurship course at one of private colleges in Indonesia, STKIP PGRI Jombang, Indonesia was selected as the sample of this study. There were two groups in this study. The first group was assigned as an experimental class and the second one was a control group. The experimental group was given the access to a weblog in an online laboratory used as a digital marketing platform; whereas the control group was taught by using traditional marketing and mostly through teacher centered approach for the whole semester. The data was collected by using an entrepreneurial test. The first conclusion was drawn based on the comparison of the students' score in entrepreneurship course between experimental and control class. The statistical analysis showed that the experimental class achieved better achievement. In other words, it can be said that online laboratory as a digital marketing for students' learning practicum is effective. The second conclusion was drawn based on the interaction between the teaching strategies of using a web blog in an online laboratory as a digital marketing platform and students' motivation levels toward students' achievement in entrepreneurship learning practicum course.

This study faced a few limitations. First, this study employed only the quantitative data as it had aimed to extrapolate the statistical findings to test the hypotheses of the study. In order to get a holistic view, the qualitative data also needs to be collected and analyzed in the same research setting. Second, students were expected to learn only one item from the course syllabus; as a result, they neglected other topics in the syllabus. Future research may be carried out with the entire syllabus to measure students' engagement and ascertain the significance of the findings. It is also recommended that future research employs qualitative data collection techniques of Focus groups and interviews to ensure a more subjective and thorough research results.

The study would also like to make some pedagogical recommendations for use in higher education. First of all, this study has shown that a traditional teaching approach cannot help students answer the demand of 21<sup>st</sup> century workplace, which are more important in the job than academic accomplishment. Therefore, traditional teaching methods are no longer acceptable if the goal of education is to generate graduates who are employable in businesses. Therefore, it is better to use teaching strategies that require students to develop their technology literacy in entrepreneurship course. This study would have significant implications for university teachers who would use online laboratory as a digital marketing platform as well as the use of a blog as teaching strategy.

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# The effect of online laboratory by using blog web as a digital marketing toward students' achievement with different motivation Levels in Entrepreneurship Learning Practicum

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