

The Urgency of Practicum Classes at Indonesian Vocational Colleges During the Covid-19 Pandemic

Fajria Fatmasari^{1*}, Dedi Febrianto², Avia Enggar Tyasti²

¹ *Department of Marketing Management for Electronics Industry, Polytechnic APP Jakarta*

² *Department of International Trade of Asean-RRT Region, Polytechnic APP Jakarta*

*Corresponding author. Email: fatmasari.fajria@gmail.com

ABSTRACT

As the Covid-19 pandemic has forced all teaching and learning to be done online, vocational colleges may face a variety of issues as a result of the big portion of practicum class they provide. Students will certainly need to use laboratory equipment, such as large-heavy machines, to expose them to the real-world application of the knowledge they learned from their lectures. When a practicum class is held online, such tasks are difficult to complete, affecting the students' ability to perform specific skills and competencies. This study attempts to explore Indonesian vocational college students' perceptions of online practicum class during the covid-19 pandemic. It involves 798 students from 12 vocational colleges of Indonesia's Ministry of Industry. The findings reveal that the vast majority of students perceive problems in their online practicum class, ranging from a distaste of the practicum online technique to the feeling that skills and competency are being harmed. It is suggested that the practicum class be conducted offline, since otherwise, the targeted skills and competencies would be compromised.

Keywords: *practicum class, vocational college, students' perception, The Ministry of Industry Republic of Indonesia.*

I. INTRODUCTION

The Covid-19 epidemic, which lasted around 18 (eighteen) months, a stressful and a traumatic event that requires individuals to make sense of the new situation and choose appropriate actions due to the emerging situation [1]. These situation makes us realize that scenario planning is an urgent need for academic institutions [2]. It completely altered the education process which the idea of online learning arises. These circumstances challenged the education system across the world and forced educators to shift to an online mode of teaching overnight. Many academic institutions that were earlier reluctant to change their traditional pedagogical approach had no option but to shift entirely to online teaching-learning [3].

The idea of online learning, indeed, arose some years ago through blended learning. It was the process of learning in the form of face-to-face and online learning [4], [5]. Online learning is proposed as an alternative process facing the disruptive of

technology. It is then spotlighted much in pandemic era.

In the midst of the Covid-19 pandemic, online learning is one option for gaining knowledge. As stated by the Circular Letter of the Ministry of Education and Culture of the Directorate of Higher Education No. 1 of 2020 about the prevention of the spread of Covid-19 in the world of education, online learning affects all levels of schools and universities. The Ministry of Education and Culture issues a circular instructing on how to conduct distance learning and encouraging students to study from home. One of the other educational services that can be accessible via the internet is the supply of online lecture materials and those resources that may be accessed by anybody in need.

Online learning promotes a student-centred, more inventive, and even more flexible approach to teaching. Moreover, online learning involves synchronous or asynchronous learning using a variety of technologies (mobile phones, computers, tablets, etc.) with internet connection [6]. Students may learn

and engage with teachers and other students in this online environment.

This type of learning requires the use of some tools, such as a gadget and an internet connection. It also indicates that using the internet and multimedia technologies may transform the way knowledge is transmitted and can be a substitute for classroom learning. Several platforms that can be used for online learning include (a) Gmail, (b) Google Forms, (c) Calendars, (d) G-Drive, (e) Google Hangouts, (f) Google Jam board and Drawings, (g) Google Classroom, and (h) Open Board Software (not a Google product, helps in recording meetings in the form of files). These numerous platforms can be utilized in place of face-to-face online meetings [7].

This online learning is also one of the government's methods for predicting the current rate of Covid-19 patients. During this tough time, the concern is not about whether online teaching-learning methods can provide quality education, it is rather how academic institutions will be able to adopt online learning in such a massive manner [8].

There are many advantages and disadvantages to online learning from many perspectives. Several researchers have shared their thoughts on online education. There are several challenges associated with online learning, including technology, motivation, and students' psychological issues [9]. In line, online learning has negative consequences such as stress, pupil apathy, and a lack of creativity [10]. However, Students' reading and linguistic understanding, on the other hand, improves. The advantage of online learning is that personal health may be maintained, and creativity and an intention to participate with others can be reawakened.

Vocational colleges under the Ministry of Industry, are not exempt from the condition. Online learning is also being optimized in vocational schools across the country. Vocational education is an important part of the national education system which has a strategic position to create a quality workforce with the active involvement of the business and industrial world. Vocational education must be developed so that it can fill industrial jobs with a profile of graduates who have high skills and knowledge (high skilled & know how), so that they can improve productive processes and can improve and develop products in the industrial world [11].

To make learning more efficient, a variety of digital platforms are employed. However, not all types of learning, such as practical classes, can be done entirely online. In vocational colleges,

theoretical and practicum classes are considered to have a close connection. Both must work together to guarantee that the graduates of vocational schools become skilled individuals. Several factors are used to distinguish the two, including (a) the physical location of the learning or learning environment, (b) the time and purpose of the learning, (c) the perceived capacity to apply information, and (d) the amount to which knowledge can be pictured [12].

Furthermore, it was stated that learning will result in the acquisition of 8 (eight) abilities, 5 of which are theoretical abilities (pure, applied, situated, self-constructed, and implicit), while the remaining 3 are practical abilities (observational, functional and cunning) [12]. As a result, practicum is seen to be a functional activity that is based on the instructor's observations initially. While theory is seen to be a skill that may be acquired independently and implicitly from a variety of sources, it is also thought to be a skill that can be cultivated through a variety of sources.

To meet the graduate profile mandated by the government and industrial society, knowledge, skills, and attitudes are needed. Usually, to ensure these three things, an assessment is carried out. The assessments that are commonly carried out at Polytechnics are as follows: (1) First, the attitude domain is assessed through observation, self-assessment, peer assessment (students assess the performance of their peers in a specific field or group), and personal aspects assessment, which emphasizes aspects of faith, noble character, self-confidence, discipline, and responsibility in effectively interacting with others. The world and its civilization, as well as the social environment and natural surroundings; (2) Assessment of knowledge using a variety of written and spoken tests that can be administered directly or indirectly. Directly indicates that during evaluations, such as seminars, thesis examinations, theses, and dissertations, instructors and students interact face-to-face. While utilizing indirect methods such as written test question sheet; (3) Performance evaluation can be done through practicum, practice, simulation, field practice, and other methods that allow students to develop their skills [13]. Thus, like or dislike, practicum class is badly needed in vocational colleges to create a competent graduate.

Polytechnic ATI Makassar, for example, requires practical classes to teach welding and electrical equipment installation. Similarly, Polytechnic ATK Yogyakarta is involved in the leather industry. Many complaints are made about practical learning because

not every student has access to the necessary equipment as provided on campus. The same thing was also seen in other vocational schools, namely Polytechnic AKA Bogor, Polytechnic PTKI Medan, Polytechnic ATI Padang, Polytechnic STTT Bandung, Academy of community Surakarta, Academy of community Bantaeng, Polytechnic Furniture Kendal, Polytechnic STMI, and Polytechnic APP Jakarta. In fact, this practicum is critical for gaining skills and putting what has been learned into practice, as required by the Job Qualifications Framework, which states that every job seeker should have good knowledge, skills, and attitudes. This became the starting point for the researcher's investigation on the importance of practicum programs at vocational colleges, particularly those under the Ministry of Industry.

Some early researches were established in the students' perception in online learning, especially practicum class, such as the one established by Wilcox and Lock [14]. Yet, there is no evidence in general that practicum class is being urgent in sort of circumstances at vocational colleges in the Pandemic Covid-19.

2. METHOD

This study used a survey approach with 798 students from various Ministry of Industry vocational institutions across Indonesia to perform a descriptive quantitative study using questionnaire in the form of closed questions. They must be active students in any Polytechnics under Ministry of Industry in academic year 2020-2021.

There were randomly shared to any gender of the students, meaning that there was no gender specialization in the research. We also had no specify any online platforms and they can come from any department which has practicum class in their curriculum.

The students were asked to rate their feelings and thoughts on online practicum classes at their different colleges on a four-point Likert scale, ranging from (1) strongly disagree, (2) disagree, (3) agree, to (4) strongly agree. The collected data were analysed by simple tabulation so that the percentage of each question indicator is obtained. A total of 5 questions related to the practicum class were put forward through a digital survey platform so that they could be accessed by respondents. In addition, to support the results of data analysis, interviews were also conducted with educators or practicum lecturers.

3. RESULT AND DISCUSSION

3.1 Characteristics of respondents

Based on the survey that has been conducted, the majority of respondents are female (53.6%) while the majority age range is 17-20 years (87.8%). They usually have online learning through any platforms, for instance WhatsApp, Moodle, zoom, or google meet for these months during Pandemic. Yet, mostly stated that synchronous meetings are used in learning process, such as Zoom or Google meeting.

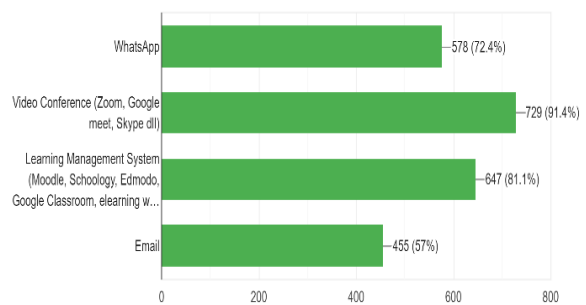


Figure 1 Platform Used in Online Learning

3.2 Students' Perception to Online Practicum Classes

All classes, including practicums, are taught entirely online during the covid-19 pandemic. Each course credit in practical lectures is about 170 minutes, including a 50-minute briefing from the lecturer or lecturer assistant.

Around 40.2% of respondents said lecturer assistants or lecturers' online explanations were simple to comprehend. As early research suggested that students in the program prefer courses with practical content, continuous interactions, and hands-on projects [15]; however, 82.5% of respondents said that online practicum courses were not their favourite. Whilst, 49,2% strongly said that it's too complicated to occupy competency by having only online practicum classes.

This is understandable given the fact that practical and theoretical courses are not the same. Students expect to be able to perform actual practicum in a practical classroom setting with suitable equipment during practicum lectures. However, the pandemic has compelled students and instructors to use internet media to enhance their learning. There are several activities that cannot be gained through internet media, such as real-world actions and attitudes. For example, certain prerequisites must be completed before to the practicum, such as the wearing of

specific clothing, a series of self-cleaning, and direct connection with persons who are not readily discovered during online practicums.

With online practicum lectures, it also does not mean making practical activities easy. In fact, it is not uncommon for students to put in more effort to acquire resources used for practicum. In fact, as the vocational schools under the Ministry of Industry, all practicum resources have actually been included in the budget subsidy charged to the school, both from the state and non-tax earning.

Even though all adjustments are made online, practicum classes are not easy for students. As many as 70.2% of respondents stated that online practicum lectures were not easy for them. There were many challenges that must be overcome, for example the signal that is not evenly distributed throughout the country, to the limitations of families that make them unable to access the internet. If basic needs in the form of gadgets and the internet cannot be met, then online learning cannot work properly.

Some students stated that they hardly find any simpleness through online practicum. Since they badly need to occupy the competencies, any activities cannot be done through online. The 39% respondents stated that it was really hard to have online practicum while only 9,4% said that they were really easy to grasp into online practicum.

The limitations that exist in online practicum classes raises the question of whether the competencies produced will be the same as when students do it in offline practicum classes. Judging from the complexity of the practicum learning process, it is not surprising that these questions can arise. According to the survey conducted, as many as 77.8% of respondents feel that online practicum learning cannot improve their skills and competencies.

Some sceptical mind arises since they did not use any standardized tools for practicum at home. There was any doubt that they will easily occupy these competencies in working place later. There were 39,8% were strongly have negative perception to competencies occupied. They did not think that they were having enough skills to go for future work. They also thought that they need to calibrate their competencies as soon as the college is re-opened.

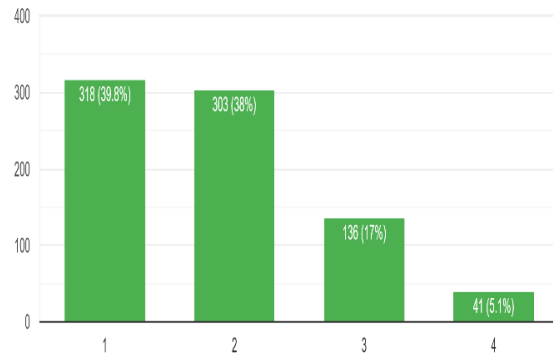


Figure 2 The negative perception to competencies

The data above is supported by the perception of skill acquisition through online practicum. It was further stated that according to the respondents, the competencies obtained through direct and online practicums would not be the same. They feel that the competencies and skills gained through online practicums are not comparable to what they get when doing face-to-face activities in practical classes. This is reinforced by the results of the study showing that 82.3% of the respondents feel that their abilities obtained by online practicum will not be the same when they do practicum offline in campus.

Students and lecturers agreed that the face-to-face practicum, which was generally done before the pandemic, had a beneficial influence on students. Practical learning is generally used to acquire the abilities that they will use at work. As a result, they feel that the gained competences and abilities will be critical for entering the world of industrial employment.

The length of practicum time in 1 (one) credit for 170 minutes is felt by students not long when they do face-to-face practicum. Sometimes, the length of time is still felt less. This is because when the body and mind are actively engaged in activities, the mind is bored and the length of time will be distracted and compensated by the competence they will gain afterwards. From the survey that has been carried out, 78.4% of respondents stated that they did not object to the length of time for face-to-face practicum.

Currently, there are 12 (twelve) vocational colleges under the Ministry of Industry. Each college has a specificity in a particular industry so that it requires skills that must be mastered related to industry, for example, Polytechnic STTT Bandung focuses on the textile industry, Polytechnic of Metal Morowali which focuses on the metal industry in the area. These vocational colleges have a need to educate their students and create graduates who are

skilled and ready to work. Therefore, practicum becomes commonplace and mandatory in these vocational schools. As stated by a teacher from one of the vocational schools that not all practicum equipment on campus can be duplicated at home. In addition, it is also impossible to send the practicum equipment to every student's home.

It was further stated that lecturers or the assistants might be able to provide stimulants in the online practicums in the form of simulations with some adjustments, however, there are certain limitations that become challenges in practicum classes. If possible, teachers and students really hope to be able to do practical face-to-face while maintaining health protocols.

The sceptical perception that arises in the minds of students regarding the implementation of online practicum and the competencies that will be obtained should be the basis for determining policies for vocational school stakeholders in this country. However, thinking about online learning methods can provide the same quality or not, this really depends on the ability of education providers to adapt to online learning massively [8]. This is in line with what was stated by Ligouri and Winkler [16] that only innovative solutions produced by educational institutions can help to get through the pandemic.

4. CONCLUSION

Online practicum classes may be an alternative for educators and students to interact, but there are still many challenges, both technical and psychological, that arise in vocational school students and teachers. At a time when the industry demands certain skills and a number of competencies that graduates must possess, currently all educational institutions must take online alternatives as a step to reduce the rate of Covid-19. Hence, like it or not, various other alternatives are needed to fulfil the needs of skills and competencies. Likewise, policies related to education during the pandemic must also be followed by industry understanding of the difficult situation faced by vocational schools.

The study still has limitations in terms of measuring the impact of online practicum learning on the skills and competencies possessed by students. For this reason, further research may be able to measure this, so that the perceptions of teachers and students can be rebuilt.

AUTHORS' CONTRIBUTIONS

Fajria Fatmasari developed the theory and wrote the manuscript with supporting data from Dedi and Avia. Dedi helped supervised and translated the manuscripts. Both Fajria, Dedi, and Avia contributed to the final version of the manuscript.

ACKNOWLEDGMENTS

The authors wish to thank you all colleagues from various vocational colleges under Ministry of Industry who helped to share these valuable questionnaires. It was also our pleasure to say our gratitude to all students comes from all Polytechnics who may challenge themselves to overcome all distraction in learning process of practicum classes.

REFERENCES

- [1] Jos Akkermans, Julia Richardson, Maria L.Kraimer. (2020). The Covid-19 crisis as a career shock: Implications for careers and vocational behavior. *Journal of Vocational Behavior* Volume 119
- [2] Rieley, J. B. (2020). Corona Virus and its impact on higher education. *Research Gate*.
- [3] Dhawan, Shivangi. 2020. Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems* vol 49 (1)
- [4] Graham, C. R. (2013). Emerging practice and research in blended learning. In M. G. Moore (Ed.), *Handbook of distance education*, (3rd ed., pp. 333–350). New York: Routledge
- [5] Dziuban, C., Graham, C.R., Moskal, P.D. et al. (2018). Blended learning: the new normal and emerging technologies. *Int J Educ Technol High Educ* 15, 3. <https://doi.org/10.1186/s41239-017-0087-5>
- [6] Singh, V., Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). *American Journal of Distance Education*, 33(4), 289–306.
- [7] Basilaia, G., Dgebuadze, M., Kantaria, M., & Chokhnelidze, G. (2020). Replacing the classic learning form at universities as an immediate response to the COVID-19 virus infection in Georgia. *International Journal for Research in*

- Applied Science & Engineering Technology, 8(III).
- [8] Carey, K. (2020). Is everybody ready for the big migration to online college? Actually, no. *The New York Times*.
- [9] Rasyida, Hikma. (2020). The Effectivity of Online Instruction in the Pandemic Era. *Jurnal Edukasi vol 1 (1)*, pp 1-8
- [10] Argaheni, Niken Bayu. (2020). Systematic Review: The Impact of Online Learning in Pandemic Covid-19 to Indonesian Higher-Level Students. *Placentum Jurnal Ilmiah Kesehatan dan Aplikasinya vol 8 (2)*, pp.99-108
- [11] Ministry of Education and Culture. (2020). *Guideline for Arranging Curriculum for Polytechnic*
- [12] Orozko, O. R. and Torres, M. I. (2015). Online learning of stochastic bi-automaton to model dialogues. In *Iberian Conference on Pattern Recognition and Image Analysis*, pages 441–451. Springer
- [13] Ministry of Education and Culture.(2020). *Strategic Plan for Vocational Education*
- [14] Wilcox, Gabrielle & Lock, Jennifer. (2017). Student perceptions of online practicum: A case study. *International Journal on E-Learning*. 12. 215-228.
- [15] Trespalacios, Jesús & Lowenthal, Patrick. (2018). What do students like and dislike about learning online: An investigation of graduates' satisfaction and perceptions of community in online courses. *Australasian Journal of Educational Technology*. 10.14742/ajet.4364.
- [16] Liguori, E. W., Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. *Entrepreneurship Education and Pedagogy*.<https://doi.org/10.1177/2515127420916738>