

Education World Disruption: Digital Communication Impact on Quality of Vocational School Graduates

Isniar Budiarti
Departemen Manajemen
Universitas Komputer Indonesia
Bandung, Indonesia
Isniar.budiarti@email.unikom.ac.id

Abstract— Along with technological development, especially in the field of education, vocational school is required to produce quality graduates. However, the lack of digital technology utilization in the education process becomes an obstacle. In this case, a comprehensive and good digital technology simulation to improve the quality of graduates through regulation, competency, and education and learning strategy is required. This study aimed to reveal the benefit and impact of digital communication in a learning activity. The data were collected using a survey method from 200 respondents of 50 public and private vocational schools in Bandung, West Java. This research found that the utilization of digital communication in education provided a positive impact in improving the quality of graduates that possess associating, questioning, observing, experimenting, and networking competence.

Keywords— Digital Communication, Disruption, Quality of Graduates

I. INTRODUCTION

Currently, media and digital technology are rapidly developing. Many schools take an interest in the relationship between education and digital technology. Although it reflects a significant correlation between the two elements, it is a challenge to adopt digital technology that has been developing for the last three decades in education. Selwyn explains that digital technology is currently a part of education, using methodologies that cannot be predicted several years ago [1]. Although digital technology promises education improvement and innovation in the last thirty years, reality shows otherwise. In this case, Pisacreta argues that the most crucial matter is to make education successful as a process to prepare students for their future. To make a learning process successful, it is necessary to develop education technology that is appropriate with the condition and characteristics of the location [2]. However in reality, not every teacher is capable of utilizing technology in the learning process. It causes the learning process to become dull for the students.

A. Education World Disruption

Generally, the disruptive era is defined as an era in which plenty of innovations take place. Most of the innovations are ignored by major organizations so that it disturbs the process of the old system or even destroy it [3]. The disruptive era is experienced by several schools and they encourage learning innovation by implementing various standardizations,

increasing teachers' incentive, and urging teachers to conduct an excellent learning process. In the future, it is hoped that more capable of learning innovators as an incumbent can be produced. It is possible that in the future, parents and recruiters will have a different mindset, such as "what is more important than your alma mater and majors?"

It would be disadvantageous if teachers in incumbent schools still employing conventional teaching method and still have the mindset of, "the students of this school have good intakes, so they will learn by themselves". On the other hand, the disruptor is continuously developing a teaching method that could improve low-intake students' quality. Graduates from a renowned school can experience cognitive degradation, and the quality is lower than the innovators outside Indonesia. The education state in Indonesia is also changing, although some of the aspects are still business as usual [4]. In contrast, education in developed countries is changing rapidly and has come into a disruptive state by the Massive Open Online Courses (MOOCs) development which could demolish everything ahead of it. The new learning process that is centered at the students and utilized technology with limitless range, crossing the classroom boundary, encourages students to be able to obtain knowledge and skill freely, taught by the best lecturer from a renowned world-class university. It also should be noted that MOOCs have been developed in Indonesia, and it also has reached various segment stakeholders. Many education institutions benefit from dominating the "education" market. However, they are starting to be affected by technological disruption such as online courses. Related to this matter, states that the impact of technological disruption in education is proven to be effective in utilizing selective methods to overcome technological disruption [5]. Some of the techniques highlight the importance of continuing education as a semi-autonomous incubator from innovation disruption.

Regarding education in the disruptive era that could not be confronted by those who do not understand the phenomenon, the topic of this study was limited to three elements, which are regulation, competency, and learning and education strategy. In improving education, regulation is essential. However, in its implementation, regulation obstructs the improvement. In this era, several education regulations are required to be or revised, especially the academic manuscript,

which is the groundwork of educational regulation development [6].

Besides regulation, students' competency and skills are also necessary to be suitable with the required competency in the era. Five methods which considered the "Discovery Skill of True Innovator" are associating, questioning, observing, experimenting, and networking [5]. Associating is an ability to think connectively in order to solve the problem from various perspectives or multidisciplinary. On the other hand, questioning is the ability to be able to ask the critical matter. However, this skill is neglected these days. Observing skill is an ability for an innovator to carefully, intentionally, and consistently lookout for small behavioral details. On the other hand, experimenting skill is the ability to keep on trying new experiences and drives these new ideas. There is no failure for innovators because every unsuccessful attempt is a delayed triumph. The last skill is the ability of networking.

B. Digital Communication

Rapid technological development usually takes place in the disruptive era and students who born in this era have a significantly different culture with the previous generation. In this era, students are used to communicating using social media platforms, and they also overlook seniority. Utilizing adequate technology, many innovations are developed because people can easily access information without attending a class [4]. Moreover, students and teachers can access information and communication like never before through portable and personal digital devices. Furthermore, classrooms and other educational environments are equipped with various digital resources. Moreover, many education-related tasks are also conducted virtually. However, consequences and results of the digitization are also varied [1]. The first step to identify the necessity of the education system, model, and media development is by analyzing the discrepancy between the ideal condition and reality.

Marsudi explains that digital communication is interaction and information delivery through several supplementary devices with provided digital content such as i-classroom, delivery network, internet TV, touch screen, infotainment channel, digital advertising, live broadcast streaming, communication channel, and teleconference [7].

C. Quality of Graduates

Quality is the suitability of use, which also can be mean that a product or service has to correspond with the user's needs and wishes [8]. On the other hand, quality can be defined as something superior or achieving a perfect standard or something that has a minor deficiency that is still acceptable [9]. Also, quality as a dynamical condition related to product, service, human resource, process, and environment that fulfill or surpass expectations [10].

On the other hand, quality as the whole characteristics of a good or service that influence its role in fulfilling needs [11]. In addition, quality in education has to be compatible with the standard, including input, process, and output [12]. On the other hand, soft skill competency and skill competence show that significant soft skill influence competition for those who want to be an entrepreneur [13]. On the same topic, there are four dimensions of quality, which are development skill, social skill, professional quality, and personal quality in

which several correlations of the dimensions can be found in this study [14].

II. METHODS

This study employed a survey method with a linear regression model. This study aims at revealing the impact and the benefit of digital communication on the quality of vocational school graduates. In this study, 12 parameters were implemented, and 50 vocational schools in the Greater Bandung area were taken as the samples.

The respondents were asked to show their opinion through 17 questionnaire items using a Likert scale (1 = lowest and 5 = highest). Each of the questionnaire variables internal scale reliability was tested, and it was found that n = 200 with a 5% significance level, $t_{table} = 2.253$, and the following dimension in Table 1.

TABLE I. VARIABLES, DIMENSION, SIZE

| Variables | Dimensions | Measurement |
|----------------------------|-------------------|--------------------------------|
| Education World Disruption | Knowledge | 1. Practice 2. Intellectual |
| | Competence | 3. Skill 4. Managerial |
| | Managerial skills | 5. Conceptual 6. Technical |
| Digital Communication | Internet | 7. Literacy 8. Network |
| | Social media | 9. Intensity 10. Community |
| | i-classroom | 11. Facilities 12. Network |
| | Teleconference | 13. Network 14. Knowledge |
| Quality of Graduates | Associating | 15. Adaptability |
| | Questioning | 16. Critical |
| | Observing | 17. Analytical |
| | Experimenting | 18. Like challenges |
| | Networking | 19. Wide network |

III. RESULTS AND DISCUSSION

Based on the results of a survey of 200 respondents about the era of disruption in education that includes knowledge, competencies, and managerial skills, the results are shown in the following figure 1.

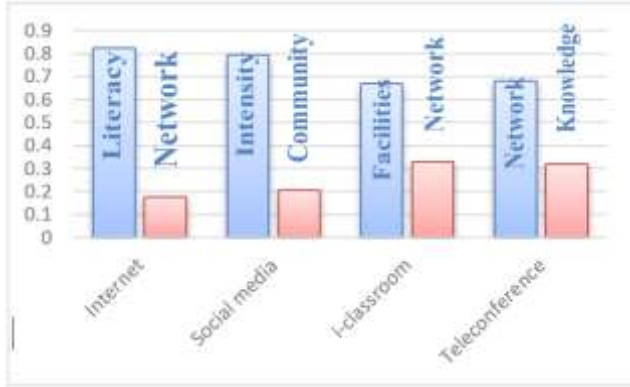


source: processed data (2018)

Fig. 1. Education World Disruption

The following is an era of disruption that can change education, where practical knowledge is more dominant than the intellectual level. It also revealed that competency skills are more dominant than managerial, while conceptual skills

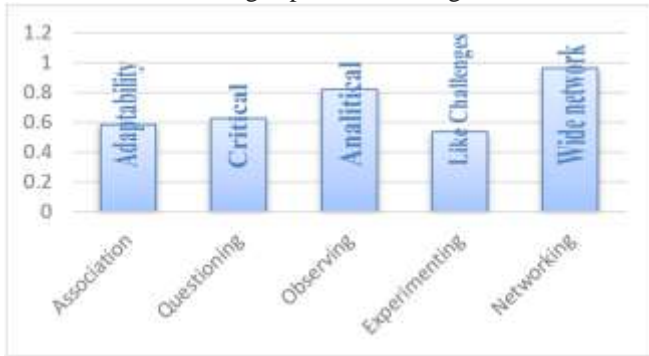
are higher than technical skills, as illustrated in Figure 2.



source: processed data (2018)

Fig. 2. Digital Communication

Then internet literacy is digital communication, where the intensity of using social media, the completeness of e-class facilities, and a proper teleconference network are the most important aspects in the learning process so that learning materials and sending messages can be more effective and efficient. The following is presented in Figure 3.



source: processed data (2018)

Fig 3. Quality of Graduates

Depicts the positive impact of digital communication utilization that could improve analytical thinking and provide wide access for the vocational school graduates. It is proven by the fact that many students wanted to conduct observation on the various problem, and they were also able to develop a wide network outside of the school. Therefore, the utilization of digital communication can provide a positive impact on the quality of vocational school graduates, especially in the Greater Bandung area.

The hypothesis test was conducted to examine the influence of digital communication utilization on the quality of graduates. It is revealed that the influences of media and partnership on organization culture were 19.8% and 15.5%, respectively. The following table shows the correlation results of the variables.

TABLE 2. HYPOTHESIS TESTING RESULTS

| Hypothesis | γ | r^2 | t | Results |
|--|----------|-------|-------|----------------------------|
| Digital Communication → Quality of Graduates | 0.198 | 0.04 | 3.630 | The hypothesis is accepted |

Source: SPSS.21 data processed in 2018

Shows that the variable of digital communication r^2 score was 4% in which $\text{count} > t_{\text{table}}$. This calculation shows that digital communication, such as internet social media, i-classroom,

and teleconference, was important in improving the quality of graduates. This finding is supported by [15] who found that that it is essential to share knowledge effectively between scholars. [16] also agree with the notion. The positive impacts of digital communication were the improvement of students' understanding of technological development and utilization include the effectivity of time, distance, and cost, creative and imaginative development, and accessibility.

Therefore, digital communication utilization in this disruption era can improve the quality of graduates to be able to adapt to change (associating), critical (questioning), analytical (observing), like a challenge (experimenting) and has a wide network (networking).

IV. CONCLUSION

The utilization of digital communication in this era had positive impacts on the quality of vocational school graduates in the Greater Bandung area that could be achieved by implementing the concept of knowledge, competence, and skill. It is also revealed that the benefits include the effectivity of time, distance, and cost, creative and imaginative development, and accessibility. However, not every graduate could meet the criteria demanded by stakeholders or industry. Thus, it is essential to conduct a further study to observe the vocational school learning pattern that is required in this Industrial Era 4.0.

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