



Competency Gap of Graduate Vocational Program in the Era Covid 19 Pandemic

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Abstract. The quality of university graduates is currently one of the main performance indicators in the rating assessment. It is necessary to analyze the gap in the quality of graduates at the time of graduation with the needs of industry. Tracer study is the right medium for tracking graduates of the vocational program of informatics management in the era covid 19 pandemics based on web. This research is a quantitative descriptive study using the graduates census method in tracking from cohorts 1 and 2 years after graduation. The results of the tracer study data analysis show six things, including: (1) 76% response rate from 58 graduates, (2) learning method used during lectures is still not optimal with many graduates choosing 1 which means it is still strongly disagree, (3) waiting time in getting a job is more than 6 months is 54%, (4) closeness of the study program to the work of 42% is close enough, and (5) accuracy of the level of education with work is 36% at the same level, and (6) competency gap of graduates is lower than what is needed at work.

Keywords: Competency · Tracer Study · Graduate · Vocational · Covid 19

1 Introduction

Based WHO (World Health Organization) on www.who.int, Coronavirus are group of viruses that can infect humans or animals. This type of corona virus can cause respiratory tract infections in humans ranging from coughs and colds to more serious ones such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). COVID-19 is a new type of corona virus discovered in 2019 that can be transmitted to humans in various countries. This new virus and the disease it cause were unknown before the outbreak in Wuhan, China, in December 2019. COVID-19 has now become a pandemic that has occurred in many countries around the world.

In the current era of the COVID-19 pandemic, it has greatly impacted the world of education and the absorption of graduate in Industry and the World of Work or called IDUKA [1]. The needs of the sports labour market are vulnerable to environmental factors in the COVID-19 situation which are very influential in changing employment and education policies [2].

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After the Covid 19 pandemic or the new normal, the need for the job market is expected to increase in balance with the improvement in the quality of the competence of higher education graduates. Competence is a person's expertise or skills in carrying out tasks in accordance with their responsibilities and obligations. Directorate-General for Research and Innovation, European Commission in the policy summary 2021 using 5.0 Industry "Towards a sustainable, human-centric and resilient European industry" provides 10 recommendations for competencies needed in the future including: (1) digital literacy skills, (2) the ability to utilize artificial intelligence and data analysis, (3) creative in solving problems, (4) have an entrepreneurial spirit, (5) the ability to in working physically and psychologically, (6) has a multi-disciplinary mindset, (7) knows about cyber privacy and security, (8) the ability to deal with the complexity of tasks, (9) the ability to communicate, and (10) has a mindset open to change [3]. Meanwhile, in the tracer study instrument, there are 35 competencies that will be analysis based on the gap between the competencies at graduation and the competencies required by Industry [4].

Tracer study (TS) is a tracking study using standardized surveys in written or oral form to graduates from educational institutions or colleges, which takes place sometime after graduation or the end of training. Tracking study instruments may vary, but common topics include questions about study progress, transition to employment, work entry, work careers, use of competencies learned, current employment, and ties to educational institutions [5]. Tracer Study Tracer Study is an effective media used to track the absorption of graduate of a university in the industry. In addition, as an effort to trace the existence and condition of graduate based on Decree of the Minister of Education and Culture Number 754/P/2020 using Key Performance Indicators of State Universities and Higher Education Service Institutions within the Ministry of Education and Culture in 2020 [6]. There are three important things that are the targets of increasing college graduates with work readiness, graduates who manage to get a job, continue their studies, or become entrepreneurs. The tracer study data will be a reliable initial provision based on various information obtained from graduates. The data will be used in continuous improvement in an effort to address the gap between graduates and the needs of graduate users.

2 Methodology

The methodology in this study consisted of four stages, including: (1) instrument development, (2) data mining, (3) data processing, and (4) data analysis.

2.1 Instrument Development

The instrument in the research was developed based on the tracer study instrument of the Ministry of Education, Culture, Research, and Technology which can be accessed on the website <http://tracerstudy.kemdikbud.go.id>.



Fig. 1. Methodology

Table 1. Results of Tracer Study Data Mining

Graduation Year	Not Filling Out	Ongoing	Finish	Respondent	Response rate
2019	2	0	17	19	89%
2020	10	2	27	39	69%

2.2 Data Mining

Data mining is carried out online and centrally using a web-based system that can be accessed on the <https://tracerstudy.unesa.ac.id>. Graduate target of data mining were 58 people, which can be seen in Table 1. Graduate filling in until the finish is 44 people, ongoing 2 people, and 12 people had not filling out. Response rate on data mining is 76%.

2.3 Data Processing

The results of extracting the web-based tracer study data processed using the Microsoft Excel application. The results of data processing are visualized in graphical form as follows: bar chart, pie chart, and spider.

2.4 Data Analysis

Data analysis was conducted to determine the effect of learning on the outcomes of graduates. There are five results of analysis in this study, including: (1) graduate satisfaction with the learning methods used during the teaching and learning process, (2) knowing the waiting time for graduate to get a job, (3) knowing the closeness of the study program with work, (4) knowing the accuracy of the level of education with employment, and (5) knowing the competency gap of graduates at the time of graduation and the needs of the industry.

3 Result and Discussion

The results and discussion explain the analysis of research results which consists of five parts including: (1) learning methods, (2) waiting time for graduate to get a job, (3) closeness of study program with work, (4) accuracy of education level with work, and (5) graduates competency gap at the time of graduation and industry needs.

3.1 Learning Method

In this study there is an instrument with the question “In your opinion, how much emphasis is placed on the following learning methods in your study program?” and the answers use a Likert scale of 1 to 5. The results of the analysis in Fig. 1 show that the learning methods implemented in the Study Program still need to be improved. This is because many graduates fill in the values 1 and 2 in the instrument field (Fig. 2).

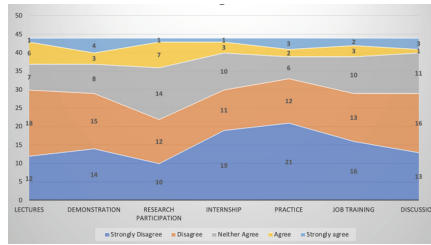


Fig. 2. Learning Method

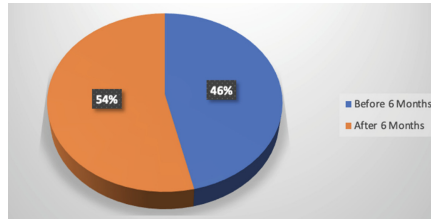


Fig. 3. Waiting Time

3.2 Waiting Time for Graduate to Get a Job

Figure 3 shows that the waiting time for graduate to get their first job before 6 months and including before graduation is 46% while graduate who get a job after 6 months are 54%. The results of this analysis indicate that graduate who get a job after more than 6 months. A strategy is needed to increase the absorption of graduate faster in the industry.

3.3 Closeness of Study Program with Work

The closeness of the study program with the work of graduate is one of the benchmarks for the success of education and learning during lectures. The results of the analysis in Fig. 4 show that most graduate choose 3 out of 5 on the Likert scale, which is 42% close enough. This recommends the Study Program to restructure the curriculum according to the needs of the world of work.

3.4 Accuracy of Education Level with Employment

Figure 5 shows that 37% of graduates Information Management Study Program do not require higher education, 18% lower level, 36% the same level, and 9% higher level. The results of the analysis can be concluded that there are still very large graduate jobs that are not in accordance with their education level.

3.5 Competency Gap

Competence is a person’s expertise or skills in carrying out tasks in accordance with their responsibilities and obligations. There are 35 competencies in tracer study instruments

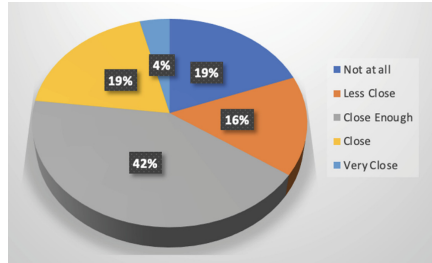


Fig. 4. Closeness of Study Program with Work

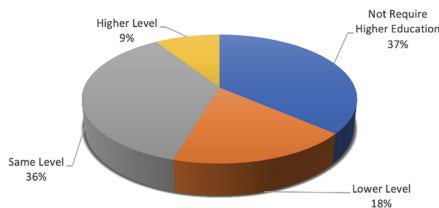


Fig. 5. Accuracy of Education Level with Employment

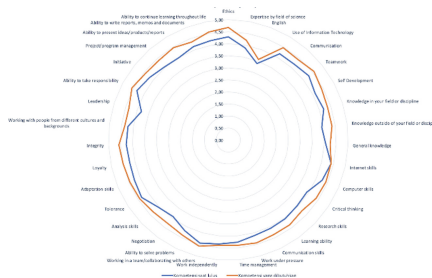


Fig. 6. Competency Gap

at the State University of Surabaya which are divided into 2, namely hard skills and soft skills. Hard skills are skills possessed by graduate in accordance with the study program. Meanwhile, soft skills are skills possessed by graduate in self-management. Figure 5 shows the gap between the competencies at graduation and the competencies required at work. The results of the analysis show that the majority of competencies required at work are higher than the competencies possessed by graduated when they graduate. Competence in the skills of using the internet is the only competency that is the same between the needs and abilities of the graduated when they graduate (Fig. 6).

4 Conclusion

The results of the tracer study data analysis show six things, including: (1) 76% response rate from 58 graduates, (2) learning method used during lectures is still not optimal with

many graduates choosing 1 which means it is still strongly disagree, (3) waiting time in getting a job is more than 6 month is 54%, (4) closeness of the study program to the work of 42% is close enough, and (5) accuracy of the level of education with work is 36% at the same level, and (6) competency gap of graduate is lower than what is needed at work.

In the future, it is necessary to organize activities to support the improvement of hard skills and soft skills through seminar or workshop. These activities are expected to minimize the competency gap of graduates.

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