Conference Paper

Improving Graduate Profiles Through Tracer Studies at University

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Abstract

Universities are encouraging efforts to improve their overall quality, including their graduates' profiles. The absorptivity of graduates in industries or users has become one of the indicators of graduates' profile quality. This tracer study aimed to get data from graduates dealing with compatibility of knowledge and skills acquired with their job. This program was carried out with the awareness of the university for the graduates' empowerment. Some of the common problems found in conducting this program were collecting data from graduation books (making the data is less accurate), many telephone numbers could not be contacted or were not active, the time required by respondents while answering questionnaires over calls, and the total number of respondents being less than the expected target. This is because the processes used in the tracer study can be tedious for the respondents (alumni), and they lose interest. The method used in tracer study consists of four stages: (1) preparation, (2) implementation, (3) analysis, and (4) evaluation of results. The preparation stage covers updating graduate data, developing questionnaires, and arranging for and training invited surveyors. The implementation phase consists of deployment, monitoring, and the remaining processes, while the analysis stage is the process of analyzing and recapitulating the questionnaire. The final evaluation phase is the overall reporting and assessment stage of the program. All graduates are expected to be able to be tracked through this method.

Keywords: graduates, tracer study, university

1. Introduction

The study of graduates of higher education providers is a tracer study [1]. Tracer studies can provide information for the purpose of evaluating higher education outcomes to be used as material for improvement and quality assurance of the higher education institutions concerned [2–7]. In the tracer study there is valuable information regarding the relationship between higher education and the world of professional work, assessing the relevance of higher education, information for stakeholders, and completeness of

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requirements for higher education accreditation. Currently tracer is one of the requirements for completing accreditation in Indonesia by the National Accreditation Board for Higher Education [8]. Analyzing the results of the tracer study shows that until now there is poor information and publications regarding tracer studies in Indonesian universities [3]. From the results of the analysis, it is also found that tracer studies in Indonesia vary widely in terms of clarity of purpose, design and methodology. When compared with the development of tracer studies in developed countries, the situation in Indonesia is quite far behind. Meanwhile, according to the Department of Industrial Engineering, Faculty of Engineering, Sultan AgengTirtayasa University, it is necessary to carry out a tracer study of its graduates to support the vision of the department, namely "Creating an advanced and quality Untirta Industrial Engineering Department based on the development of integrated steel industry research [9].

So far, the process of implementing the tracer study at Muria Kudus University has been going well, but there are problems, namely that the respondents from graduates who are traced are still minimal, namely in the implementation of 2015 to 2019 the respondents who filled each year consecutively were 2015 with 33% results with population target of 1091, in 2016 with a result of 31% with a target population of 1491, in 2017 with a result of 36% with a target population of 1541, in 2018 with a result of 43% with a target population of 1420, in 2019 with a result of 44% with a target population of 1473. In fact, it is sufficient based on the standard suggested by the Directorate of Higher Education, namely 30%. However, for the needs of curriculum development, maximum results are still needed. Therefore, we need a method that can maximize the results of the tracer study.

The purpose of this research is to develop a method for conducting a tracer study at Muria Kudus University and to evaluate the results of the tracer study that has been carried out with the proposed method.

1.1. Career Center in Higher Education

A measure of the success of a higher institution can be seen one of them by the quality of graduates received in work. In order to know where the graduates work, universities need to record and trace the alumni after graduating for two years. All things become easy in the era of advanced technology. By knowing the alumni data, especially the

telephone number and e-mail address of students who have graduated, the data can be traced.

Learning bureau of Research and Higher Education Ministryencourages that every university should have a unit called Career Center. Career Center is a student career development forum where universities prepare and introduce industries for prospective graduates. The Career Center cannot be separated from the tracer study system which is a search program about the existence of college alumni. The Career Center is also a very important unit in universities. It records alumni needs and as a means of networking among them. The career center also serves as a place for recording of outcomes and evaluations of universities on the quality of graduates. By announcing a high percentage of graduates who work directly compared to the number of students who graduate can be used as a separate promotion for universities, so that more and more interested people want to study at the college.

2. Research Method

2.1. Design

It is an experimental research which was broken down into four stages, namelyPreparation stage, the Implementation stage, the Analysis stage, and the Follow-up Evaluation stage. This research is a quantitative model in which the process is collecting data and evaluating the results of data collection with the methods that have been proposed.

Preparation stage is the initial stage of tracer study which includes the process of collecting graduate contact data through graduation books and Academic Information Systems (SIA). Then the contact data is updated if there are graduate data that changes from the previous data. Furthermore, a questionnaire was developed that referred to the DIKTI tracer study questionnaire and added with several questions according to the needs of Muria Kudus University.

The Preparation Stage is the initial stage of the implementation of a tracer study which includes the process of collecting graduate contact data through graduation books and Academic Information Systems. The next is update the contact data if there is graduate data that changes from the previous data. Furthermore, the questionnaire was developed which refers to the Higher Education Ministry (DIKTI) tracer study questionnaire

and was added with several questions according to the University's needs.The development of this questionnaire included the stages of drafting a questionnaire containing the standard questions from DIKTI questionnaire, and organizing a questionnaire refinement workshop with head of departments and faculties by sending a draft questionnaire to the Assistant to Dean for Academic Affairs, Assistant to Dean of Student Affairs, and head of department. This is issued to add information or questions to different questionnaires for each department at the university according to their needs for accreditation.

This stage prepares a list of contacts who will be invited to fill tracer studies, either via email or SMS Broadcast. Then,it trains surveyors to use the website and SMS Broadcast. And, continued with socialization to the leaders of the university and the academic community as well as to the graduates both through banners, brochures, and websites within the university as well as on several social media such as Facebook and Twitter. The next stage is the Implementation stage which consists of sending notifications or invitations to graduates either by telephone or SMS Broadcast. Based on previous experience, sending invitations using a letter was omitted because it was less effective and efficient. After sending the notification, the next is filling out the questionnaire by the graduates.

During the process of filling out the questionnaire, monitoring progress was carried out namely monitoring the graduates who had been sent an invitation but had not filled out the questionnaire. From the results of the monitoring progress, sending reminders will be sent either by telephone or SMS. This process will be carried out three times. After the data of graduates who are the target of the respondent has been collected, the survey will be closed.

The next stage is the Analysis phase which consists of data processing where data cleansing is carried out if multiple data are found. After that, data analysis is done quantitatively by changing it in the form of numbers or tables or graphs to obtain an overview of the distribution of tracer study indicators described in the Instrument points in chapter III. Then, conclusions are made and preparation of the final report on the results of the tracer study and carrying out dissemination or workshops.

The final stage is the Follow-Up Evaluation. It is the stage to evaluate a series of alumni tracking activities from beginning to end. This process involves the leadership of the university as a basis for the development and improvement of learning programs such as improving competence and relevance of the curriculum to the world work market, improving the learning process, and the process of accreditation and certification, as well

as improving the performance of institutional managers. So that it can gradually increase graduate user satisfaction which is expected to increase the absorption capacity of graduates and shorten the waiting time of graduates in getting a job.

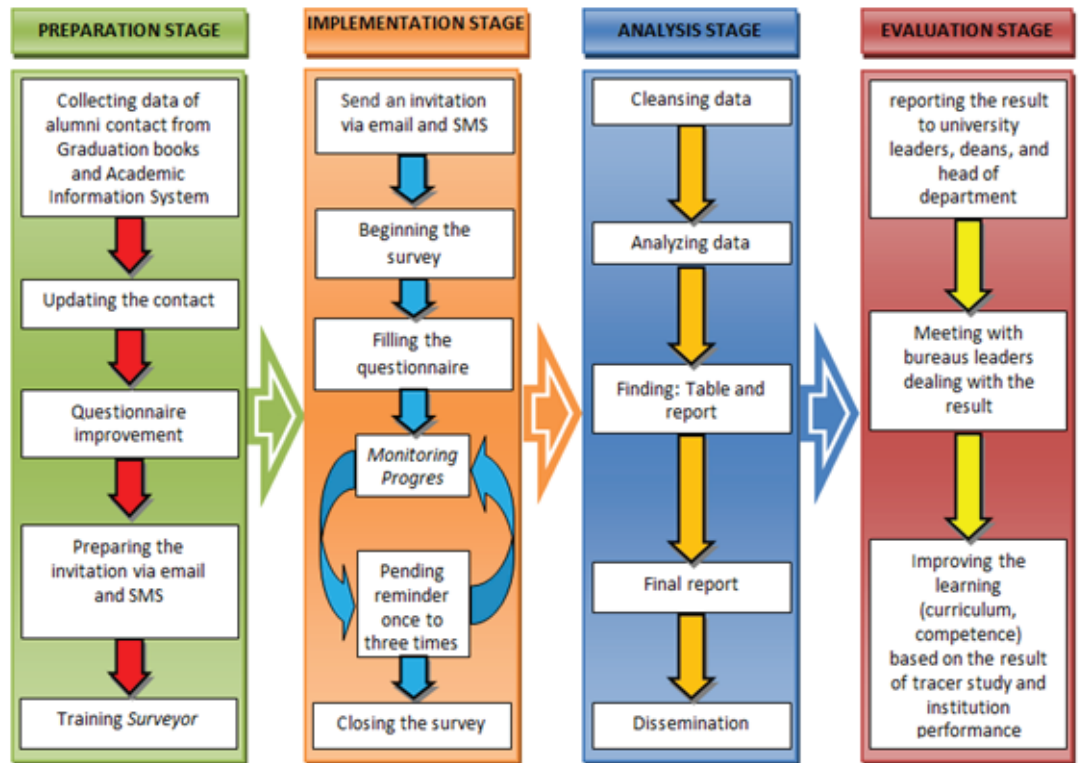The framework of *tracer studyplot*can be seen from the following figure;

Figure 1: Framework design of*Tracer Study* plot (TS Report UMK 2020)

2.2. Subject

The subject of this tracer study activity is the university. This unit is under responsibility to the Rector through the Third Assistant to rector for Student Affairs and Alumni. This activity will be assisted by the Tracer Study Team.

2.3. Tracking Method

There are three tracking methods used in tracer study, they are:

2.3.1. Online Questionnaire

The method of tracking online questionnaires is done on the tracer study website which is integrated with the Academic Information System. It is expected that using a single account will make it easier for graduates to access the tracer study website because graduates do not need to re-register because the graduate data comes from an integrated Academic Information System. In addition to tracer study information, this website also contains updated job openings so that graduates will be interested in accessing them.

In addition to increase the participation of graduates, the purpose of this tracer study website is for cost and time efficiency and effectiveness in processing self-evaluation data, both for departmentand institutional accreditation.

2.3.2. Telephone

This tracking method is done by contacting graduates using the telephone.

2.3.3. Interview

This method is carried out to graduates who can meet face-to-face with the tracking team on several activities held by the institution and which can be met directly.

3. Result and Discussion

The results of the tracer study implementation using the model that had been proposed showed a significant increase of 49.60% from the target population of 1619. By applying the method, it showed the increase of 5.6% was obtained from the previous year. In terms of presentation, the increase was 5.6% but the number of respondents increased rapidly. In 2019, the total number of respondents was 649 and this year the number of respondents was 801. The increase in the number of respondents was 152.With these results, the need for valuable information regarding the relationship between higher education and the world of professional work, assessing the relevance of higher education, information for stakeholders, and completeness of data for accreditation needs can be obtained optimally. This tracer study implementation model can be used

as a reference for the implementation of a tracer study in the following year or can be used in other universities.

3.1. Response Rate

From the results of alumni tracking, information was obtained that most of the response rates from all departments were still poor. This was proved by the response rates eight of fifteendepartments had a response rate below 50%. However, there were departmentswhich hadhigh response rate.They were Information Systems with a response rate of 72% and Electronics Engineering with a response rate of 64%. List of response rates from each department can be seen in Table 3.1.

TABLE 1

No	DEPARTMENT	TARGET	RESPONDENTS	PERCENTAGE
1	S2 – Management	45	12	27%
2	S1 – Managemen	293	134	46%
3	S1 – Accounting	213	97	46%
4	S2 – Law	19	10	53%
5	S1 – Law	56	26	46%
6	S2 – Primary Education	19	3	16%
7	S1 – Primary Teachers Education	326	164	50%
8	S1 - Counseling	78	33	42%
9	S1 –English Education Department	101	49	49%
10	S1 – Agrotechnology	58	24	41%
11	S1 –InformaticTechnology	160	88	55%
12	S1 –Electronic Engineering	28	18	64%
13	S1 –System of Information	111	81	73%
14	S1 –Mechanical Engineering	70	36	51%
15	S1 – Psychology	42	26	62%
	Total	1619	801	

3.2. AlumniTransition Period

3.3. CurrentJob

<p style="text-align:center">TABLE 2: Alumni Transition Period (TS Report UMK 2019)</p>

A	Questions	Response(TS result)
1	When do you start finding a job? Part time job is not included	87,72% before graduation, in range for two months 12,13% after graduation, in range for six months
2	How do you find the job? Can be more than one answer	58% from colleagues 49% from ads in magazine/newspaper/brochure 40% from internet/online ads
3	How long do you spend to get the firstjob (before and after graduation)?	In range for five months
4	How many companies/institutions do you propose an application (email or letter) before?	In range for five companies
5	How many companies/institutions which respond you?	In range for three companies

<p style="text-align:center">TABLE 3: Questions For Current Job (TS Report UMK 2019)</p>

B	Questions	Responses (TS result)
1	Do you work now (including part time job or entrepreneur)?	77% Yes (working) 23% not working
2	How do you describe your current condition?	10% continue study 9% marry 15% busy with family 16% finding a job
3	Do you actively find a job during these four weeks?	3% starting to work for two weeks 7% not fixed working in two weeks
4	What kind of company/institution the place you work now?	1.21% Government office 2.4% NGO 3.22% Private companies 4.15% Enterpreneur 5.7% Others
5	How much do you get for the salary in a month?	In range for Rp 1.500.000 (Rupiah)

3.4. The Harmony of Vertical and Horizontal

<p style="text-align:center">TABLE 4: Questions for The Harmony of Vertical and Horizontal (TS Report UMK 2019)</p>

C	Questions	Responses (TS result)
1	How close the relevance between your major and your job?	1.19 % Very close 2.8 % Close 3.47% Quite close 4.10% Fairly close 5.10% not close
2	What education level which suitable for your current job?	1.10% Higher 2.67% same level 3.10% Lower 4.6% High education level is not necessary
3	If you think that your job is not suitable with your education level, why do you take it? Can be more than one answer	133(35%) It is more interesting 99(31%) It is more secure 57(18%) Haven't got the suitable job yet

3.5. Competence and Response Rate

4. Conclusion

Based on the finding from tracer study program, it can be concluded;

TABLE 5: Statement of Competence and Response Rate (TS Report UMK 2019)

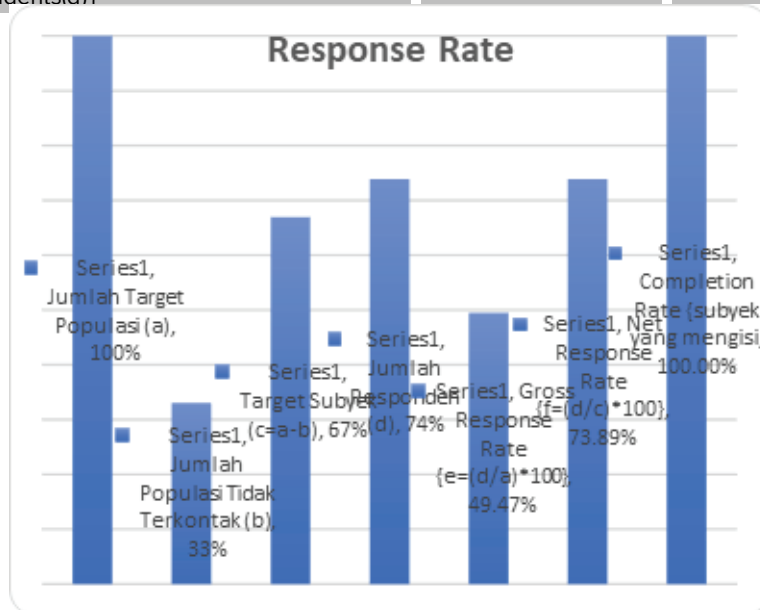| D	Questions	Responses (TS result)	
1	Which competence from the following do you master when you graduate? (A)	The average score in each competence is 3,4	
2	How is the contribution of university to the following competence when you graduate? (B)	The average score in each competence is 3,3	
Response Rate			
		Total	**Percentage**
	Population target number (a)	1619	100%
	Uncontacted population (b)	512	32%
	Subject target (c=a-b)	1107	68%
	Respondents (d)	**801**	**72%**
	Gross Response Rate {e=(d/a)*100}	801/1619	49,47%
	Net Response Rate {f=(d/c)*100}	801/1054	72,36%
	Completion Rate {the subjects who fill the questionnaire completely from total respondents(d)}	801	100%

Figure 2: Graphic of Tracer Study Response Rate (TS Report UMK 2019)

1. Information on alumn /graduate biodata currently recorded through graduation books should be able to be recorded more neatly using the Academic Information System that is already owned by the institution.

2. The process of sending information via SMS is quite easy and efficient. However, it has several obstacles if the registered cellphone number is no longer used or is not active.

3. The number of respondents who filled out the questionnaire was still below the expected target, this was possible because of a sense of concern or lack of interest

in the alumni tracking process for graduates / respondents. So the team must find ways to make respondents more interested in filling out the questionnaire.

4. The results of the questionnaire analysis can be input to the institution in making improvements in the learning process and services and facilities.

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