Operational Plan Development of Four-Year Diploma Mechanical Engineering Study Program

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Abstract. The demand for labor in the industrial sector will increase by more than 8% until 2035. This increase is spread across all manufacturing sub-sectors, such as the food and beverage industry (mamin), metals, textiles and clothing, and automotive. The development of industrial human resources aims to create a skilled workforce that is in accordance with the needs of today's business world. Nationally by developing quality human resources through vocational education. Departing from the above background, it is hoped that every university, especially study programs, must have an operational and development plan in accordance with the strategic plan, vision, and mission of the faculty and university. To support this, it is necessary to improve the curriculum in accordance with their respective areas of excellence that can synergize the existing ones in accordance with the vision and mission of the State University of Surabaya. This research method uses descriptive survey research, where the analysis studies the respondents through interviews and also collects secondary data in study programs, vocational programs, and universities. This research is using secondary data analysis. Secondary data sources can come from study programs, vocational programs, and universities, statistical data documents from vocational programs and university websites. Document data taken include: University Strategic Plan Document, Vocational Program Strategic Plan Document, and other relevant documents. The next will rearrange or combine information into new ways to answer research questions, which are then used to develop an operational plan for the D4 Mechanical Engineering Study Program. The results of the study can be described as an increase in the quality of graduates by 60%, an increase in lecturers by 50%, an increase in the quality of curriculum and learning by 100%, and the governance of work units in the Directorate General of Higher Education BB and the figure is 80.

Keywords: study program renop · quality improvement · curriculum

1 Introduction

The demand for labor in the industrial sector will increase by more than 8% until 2035. This increase is spread across all manufacturing sub-sectors, such as the food and beverage industry (mamin), metals, textiles and clothing, and automotive. The development of

industrial human resources aims to create a skilled workforce that is in accordance with the needs of today's business world. Nationally by developing quality human resources through vocational education. To obtain higher quality research and planned outcomes, the D4 Mechanical Engineering study program at the Surabaya State University's vocational program seeks to develop a clear, targeted, and measurable renop, which is outlined in the Research Master Plan (RIP) for a period of five years. The description of RIP contained in Unesa's vision is "Excellence in Strong Education in Science", while Unesa's mission is described as follows.

1. Organizing learner-centred education and learning by using an effective learning approach, and optimizing the use of technology.
2. Conducting research in educational sciences, natural sciences, socio-cultural sciences, arts, and/or sports, and developing technology whose findings are beneficial for the development of science and public welfare.
3. Disseminate science, technology, arts, culture and sports, as well as research results through community service that is oriented towards community empowerment and civilisation.
4. Realizing Unesa as an educational center, especially primary and secondary education as well as a scientific center based on the noble values of national culture.
5. Organizing an autonomous, accountable, and transparent university meeting for quality assurance and continuous quality improvement.

Based on the 4th Unesa mission, the Unesa Mechanical Engineering D4 study program to develop an operational plan in accordance with the elaboration contained in the Unesa mission as follows:

MISSION 4 Realizing Unesa as an educational center, especially primary and secondary education as well as a scientific center based on the noble values of national culture.

Destination The realization of Unesa as an educational center, especially primary and secondary education as well as a scientific center based on the noble values of national culture. Program Target (SP5) Improved institutional quality Program Target Performance Indicators (IKSP5): Unesa's ranking in 4ICU (world rank), National Unesa Ranking, Institutional accreditation, Number of Science and Technology Parks built, Number of Science and Technology Excellence Centers (PIU).

2 Methods

This research is a descriptive survey research, where the analysis studies the respondents through interviews and secondary data collection. Data collection is done online and through interviews with parties related to the operational plan of the study program. The implementation of the research used is as follows: a. Direct data collection through online data and direct interviews with related parties b. Search directly through the university web, university strategic plan, vocational program strategic plan, university renop, vocational program renop, and study program renop. Analysis of the data used in this study is secondary data analysis. Secondary data sources can come from the

university's web, university strategic plan, vocational program strategic plan, university renop, vocational program renop, study program renop and other relevant documents.

3 Results and Discussion

Coordination meetings Initial coordination meeting with the entire basic research team, this is done to share views on the renop and what data must be collected, so that all data collected will not be wrong and will not repeat the same work again. This coordination meeting is needed to strengthen the division of roles and tasks in finding the data needed, through all team members involved. In this meeting it is used so that team members can work optimally on each task that has been given and can be according to the time of each member's performance target. Collecting D4 TM. Study Program Renop Data Looking for any supporting data that will be needed for the purposes of developing the renop of the D4 Mechanical Engineering study program, starting from tracking through the university web, looking for data in the vocational program, viewing and observing performance contracts (Rector, Director of Vocational, Deputy Director of Vocational, and Head of D4 Engineering Study Program Machinery) and looking at the accreditation form for the D4 Mechanical Engineering study program. This is done so that all the data collected can be mutually supportive, and can be accounted for the truth. Mapping D4 TM. Study Program Renop Data After all the supporting data has been collected, all members of the research team begin to map and distinguish what is the group in each section for the development of the D4 Mechanical Engineering Study Program Renop. The Renop which will have been developed is expected to help develop the course of the study program in the future. The study program level has developed well, it will have an impact on the vocational program level, and can indirectly boost the University at the National and International levels. Developing D4 TM. Study Program Renop After all the literature, existing data, an Operational Plan for the Mechanical Engineering D4 study program will be made in outline. From this development, it is hoped that later it will produce an operational plan for the D4 Mechanical Engineering study program that can support performance contracts (Chancellor, Vocational Director, Deputy Director of Vocational Studies, and Head of D4 Mechanical Engineering Study Program) and support IKU from the State University of Surabaya. This development can be carried out through several activities listed in Table 1.

Discussion Based on the data that has been collected in the target activities that can support the University's KPI, the development of an operational plan for the D4 Mechanical Engineering study program can be seen in which parts are still lacking and which parts are good. This will later lead to better operational plans and can support the University's IKU gradually and sustainably. Analysis of research on the operational plan of the Mechanical Engineering D4 study program, increasing the quality of higher education graduates leads to the percentage of D3 graduates who manage to get a job; continue studies; or become self-employed. (60%), the percentage of D3 students who spend at least 20 (twenty) credits off campus; or achieve the lowest achievement at the national level of 40%. Increasing the quality of higher education lecturers, leading to the percentage of lecturers who carry out tridharma activities on other campuses, at QS100 based on the field of science (QS100 by subject), working as practitioners in the industrial

Table 1. Targets of activities in support of the University's IKU

No	Target Performance	Indicator Activities Performance	Target 2022	Data Target 2022	Activities in Support IKU Achievements
1	5.1	IKU 1.1	60%	1. S1 and D4/D3/D2 graduates who managed to get a job < 6 months and a salary of 1.2 times the UMP = 5 people 2. Continuing study = 3 people 3. Become an entrepreneur = 10 people 4. Total number of graduates in 2021 = 18 people	1. Cooperation with IDUKA 2. MOU 3.MoA 4. UMKM
		IKU 1.2	40%	1. MBKM students = 34 students 2. Student achievement = 20 Mhs 3. Total number of SI and Diploma students = 161 students	1. Internship in Japan 2. MSIB Internship 3. Internship at IDUKA 4. UKM Development
2	5.2	IKU 2.1	35%	1. Lecturer of tridharma QS 100 = 2 people 2. DUDI practitioner lecturer = 1 person 3. Lecturers who guide student achievement = 4 people 4. Total number of lecturers = 7 people	1. IDUKA Lecturer Internship 2. Lecturer Training 3. Development of PMW Proposal Writing

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Table 1. (*continued*)

No	Target Performance	Indicator Activities Performance	Target 2022	Data Target 2022	Activities in Support IKU Achievements
		IKU 2.2	50%	1. Lecturer with relevant S3 qualification = 1 person 2. S2/S3 lecturers who have competency certificates = 7 people 3. Lecturer practitioners from DUDI = 3 people 4. Total number of lecturers = 7 people	1. Further study S3 2. Lecturer Training 3. Lecturer Competence
		IKU 2.3	0,9	1. Gained International Recognition = 6 2. Applied in society = 2 works 3. Total number of lecturers = 7 people	1. Research 2. PKM
3	5.3	IKU 3.1	100%	1. Number of study programs that collaborate with partners = 10 study programs 2. The number of collaborations for each study program = 10 Documents	1. MOU 2. MoA 3. IA

Table 1. (*continued*)

No	Target Performance	Indicator Activities Performance	Target 2022	Data Target 2022	Activities in Support IKU Achievements
		IKU 3.2	50%	1. Courses that apply the case method = (16 + 29) courses 2. Courses that apply team-based projects = (27 + 24) courses 3.Total number of SI and Diploma courses = (43 + 53) courses	1. Jobsheet 2. Practice Results
		IKU 3.3	VOKASI = 10%	There is no International Accredited Study Program yet	SDM improvement
4	5.4	IKU 4.1	BB	BB	1. SDM Training 2. ISO training 3. Financial Training
		IKU 4.2	80	80	1. SDM Training 2. ISO training 3. Financial Training

world, or fostering students who achieve the lowest achievement at the national level in 5 (five) last year of 35%, Percentage of permanent lecturers with academic qualifications S3; have a certificate of competence/profession recognized by industry and the world of work; or come from professional practitioners, industry, or the world of work by 50%. The number of research outputs and community services that have successfully received international recognition or been applied by the community per number of lecturers is 0.9%. Improving the quality of curriculum and learning is by the percentage of D4/D3 study programs that collaborate with partners by 100%, the percentage of D4/D3 courses that use case-solving learning methods (case method) or project-based group learning (team-based projects). as part of the evaluation weight. By 50%. And The percentage of D4/D3 study programs that have international accreditation or certificates recognized by the government is 0% because they have not carried out international accreditation. As well as improving the governance of work units within the Directorate General of Higher Education, the average predicate of Satker satker is at least BB, and the average budget performance value for implementing RKA K/L Satker is at least 80.

4   Conclusion

The development of an operational plan for the D4 Mechanical Engineering study program is carried out in a way, first starting from tracking through the university web, looking for data in the vocational program, viewing and observing from the performance contract (Chancellor, Vocational Director, Deputy Director of Vocational, and Head of D4 Mechanical Engineering Study Program) and seeing from data on the accreditation form for the D4 Mechanical Engineering study program. This is done so that all the data collected can be mutually supportive, and can be accounted for the truth. From the data that has been collected, it can be used to develop an operational plan for the D4 Mechanical Engineering study program. Increasing the quality of higher education graduates by 60%. Increasing the quality of higher education lecturers, by 50%. Increasing the quality of the curriculum and learning 100%. Improved governance of work units within the Directorate General of Higher Education at least BB and a minimum of 80.

Authors' Contributions.   All authors discussed and agreed with the main focus and ideas of this paper. ANFG contribute to writing, AMS editing, DW dan WW collecting data.

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