# The Challenge in Developing the Curriculum of the Technological and Vocational Education Master's Program

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**ABSTRACT**

The aims of this study were to 1) describe the stages of the curriculum development for the Technological and Vocational Education (TVE) Master's Program, Makassar State University; 2) describe the distribution of the graduates of Technological and Vocational Education Master's Program; 3) explain the user's response to the competence of graduates of the Technological and Vocational Education Master's Program. This research is a descriptive study using a quantitative approach. This research was conducted in March to August 2022. The subjects of this research are graduates of the Master of Technology and Vocational Education, graduate users, lecturers, education staff, and students. The results of the analysis showed that 1) the curriculum development of the Technological and Vocational Education Master's Program is starting from adjusting the vision and mission to the formulation of graduate profiles involving related parties such as graduate users, lecturers, education staff, and students of the master of Technological and Vocational Education. The workshop determined the program learning outcomes of graduates based on the graduate profiles; 2) TVE Masters graduates dominantly working as educators, both as lecturers and as teachers at the junior secondary and vocational secondary levels; 3) Users give a very positive response for the competence of the graduates. It can be seen from the 7 components of the assessment.

**Keywords:** *Curriculum Development, Technological and Vocational Education, Graduate Learning Outcomes, Master's Program*

## 1. INTRODUCTION

The professional demands mandated by Law No. 20 of 2003 concerning the National Education System by requiring professional certificates for all fields of expertise as proof of accountability to stakeholders also have an impact on the need to improve the implementation of the education program. [1], [2]. Changes in regulations, institutions, developments in science and technology, professional demands, and community needs, as described above, impact the need to improve all components of the curriculum. Improvements include the formulation of Expected Learning Outcomes (ELOs), curriculum content, learning models that emphasize self-directed and student-active learning, and assessments that can identify and map the learning processes and outcomes of students who are able to adapt to the dynamics of the global community they face [3], [4].

The Master's Program in Technological and Vocational Education is one of the master's programs at the Makassar State University Postgraduate Program. Graduates of the Technological and Vocational Education program have profiles as (1) professional educators, (2) vocational education researchers, and (3) technopreneurs. The objectives of the Technological and Vocational Education program are (1) to produce master's level Technological and Vocational Education experts who are professional and able to combine theory and practice, research, and community and humanitarian service to create a society. (2) To produce graduates who are innovative, creative, and critical with insight into science, technology, arts, and entrepreneurship.

Vision and Mission of Technological and Vocational Education to become a Master of Technological and Vocational Education program that is superior and has an entrepreneurial outlook in 2025. While the mission is to (1) organize master's education to produce professionals

in the development of Technological and Vocational Education, (2) organize research and development of science and technology to produce superior academic work, (3) organize community service through the application of research results with an entrepreneurial outlook, (4) establish cooperation with various parties to improve the quality and performance of Technological and Vocational Education study program.

To realize the vision and mission, Technological and Vocational Education develops curriculum tools as part of the higher education process standards. The suitability of the curriculum and its learning tools in realizing the vision and mission must be based on the Indonesian National Qualifications Framework and impact (outcome). The Master's program has a very important role in preparing students to become good and professional experts. Of course, to become a good expert, one must not only have pedagogical competence, but also professional competence. The program must develop an appropriate and measurable strategic plan. [5], [6].

Based on the background described above, the problem formulations in this study are: 1) What are the stages of the curriculum development model of Makassar State University Postgraduate Technological and Vocational Education Study Program? 2) What is the current distribution of Master of Vocational Technical Education graduates? 3) What is the user response to the competence of the graduates of the Postgraduate Technological and Vocational Education Study Program at Makassar State University?

## 2. RESEARCH METHOD

The type of research used is survey research. This research uses a survey method and will be conducted in the odd semester of the 2022/2023 academic year. The population of this study was the graduates of the last 3 years (2021, 2020, and 2019) of the Master of Technological and Vocational Education program with a total of 181 graduates. Data collection through questionnaires, interviews, and surveys. The questionnaire was used to capture user responses regarding the relevance of graduate competencies and expected competencies. Interviews were conducted to get responses, comments, and suggestions from users, faculty, alumni, and students about the conditions they experienced and their expectations for the future. The interview method was chosen because it allows the researcher to get closer to the interviewees, thus providing more in-depth information. The data collection technique used a questionnaire to track the distribution of graduates and their current field of work.

Data was obtained through initial observations, interviews, and several literature studies related to the basis of curriculum development. The data analysis technique used in this research is descriptive analysis.

The presentation of data used in this research is in the form of tables and figures, each accompanied by an explanation.

## 3. RESULT AND DISCUSSION

### 3.1. Stages of Technological and Vocational Education Curriculum Development

The Master of Technological and Vocational Education Study Program at Makassar State University Postgraduate Program aims to produce intellectuals and scientists who are ethical, cultured, able to create jobs, able to develop themselves as professionals, and can discover, develop and apply innovative works based on entrepreneurship and able to solve problems in the field of Technological and Vocational Education through inter-, multi- and/or transdisciplinary approaches.

Technological and Vocational Education as the only Master of Vocational Technical Education program in East Indonesia continues to strive so that the mission of the Master of Technological and Vocational Education program can be achieved, namely: (1) organizing master's education to produce professionals in the development of Technological and VocationalEducation, (2) organizing research and development of science and technology to produce superior academic work, (3) organizing community service through the application of entrepreneurial research results, (4) establishing cooperation with various parties to improve the quality and performance of the Technological and Vocational Education program.

Efforts to achieve the program's mission through several achievement strategies, namely: (1) Reviewing the curriculum and syllabus, (2) Optimizing the use of academic information systems, (3) Optimizing the role of thesis advisors and the intensity of thesis proposal workshops, (4) Workshop on developing semester learning plans based on the Expected Learning Outcomes Higher Order Thinking Skills, (5) Workshop on preparing grant proposals for research and community service competitions, (6) Workshop on proposing intellectual property rights, (7) Strengthening the coordination with study centers under the auspices of the Institute for Research and Community Service and the Institute for Innovation and Business Development at Makassar State University, (8) Enhancing the competence of faculty and educational staff in service, (9) Organizing activities related to the Memorandum of Understanding for education, research and service activities in the form of training, teaching, research collaboration, (10) Organizing guest lecturers, public lectures and seminars.

Curriculum development is based on the Law of the Republic of Indonesia, Presidential Regulations,

Regulations of the Minister of Education and Culture, Regulations of the Minister of Research, Technology and Higher Education, to the policy of the Rector of Makassar State University. The curriculum development guidelines adopted are the Guidelines for Preparing Higher Education Curriculum of the Ministry of Research Technology and Higher Education, Directorate General of Learning and Student Affairs, Entrepreneurship Curriculum Guidelines, and Guidelines for Preparing Study Program Graduate Learning Outcomes, Directorate General of Learning and Student Affairs. [7], [8].

Several factors are considered and parties involved in the preparation, review, and development of the curriculum, including a) the vision, mission, goals, and objectives of the program, b) the development of science and technology, c) input from students/alumni, d) suggestions from the business and industry community, e) information and data from faculty, f) institutional policies at the faculty and university levels, g) suggestions from quality assurance groups at the program and faculty levels, h) the results of the review of the program assessor, e) information and data from lecturers, f) institutional policies at the faculty and university levels, g) suggestions from quality assurance groups at the program and faculty levels, h) the results of the program review team's review, and i) market need analysis/stakeholder input.

### 3.2. Distribution of Master of Technological and Vocational Education graduates

A tracking study of graduates of the Master of Technological and Vocational Education was conducted on graduates who graduated up to 6 years ago. The results of the tracking study will then become one of the policy bases for determining the profile of graduates. The tracking study and the discussion that developed during the implementation of the focus discussion discussed 4 (four) profiles of graduates of the Master of Technological and Vocational Education. The profiles of the graduates of the Master of Technological and Vocational Education are professional educators, vocational education researchers, educational evaluators, and entrepreneurs.

The Master of Technological and Vocational Education program continues to strive to ensure that graduates achieve the expected profile. For this reason, the curriculum development team develops expected

learning outcomes based on the Indonesian National Qualifications Framework and the National Higher Education Standards. Expected Learning Outcomes(LOs) consist of Attitude, Knowledge, General Skills, and Specific Skills components. The Attitude and General Skills aspects are the formulation of learning outcomes that must relate to national higher education standards. The formulation of expected learning outcomes also takes into account the results of discussions and agreements from the Association of Technological and Vocational Education Programs.

Specific knowledge and skill aspects are systematically arranged by the team based on the graduate profile to be achieved. All of the above skills must be related to the skill description of the Indonesian National Qualification Framework Level 8. The next stage of curriculum development will be carried out in stages by the curriculum development team.

From the results of the graduate tracing study, out of 181 graduates of Master of Vocational Technology Education in the last 3 years, namely graduates in 2021, 2020, and 2019. The number of Vocational Technology Education graduates traced was 96 people or 53%, consisting of 58 men and 38 women. This number of respondents is higher than the study [9].) which conducted a tracer study on graduates of the Master of Management Study Program, Faculty of Economics and Business, Tanjungpura University who started lectures from 2012 to 2019. Most of the respondents in the tracking study were alumni who entered the university in 2019 and completed their studies in the graduation year of 2021 (26%).

The field of work of graduates of the Master of Vocational Technology Education Postgraduate Program at Makassar State University is dominated by work as educators such as lecturers and teachers (89%). About 10% work as employees in government and private agencies, and the remaining 1% work as entrepreneurs and continue their studies. Research [10] also found similar things that graduates of the Master of Economic Education at Semarang State University work in the field of education as teachers, principals, supervisors, and lecturers. Most of them work as teachers at the high school/vocational level.

For graduates who were already working, further questions were asked about the waiting period between leaving university and getting their first job. See Figure 1 for more details.
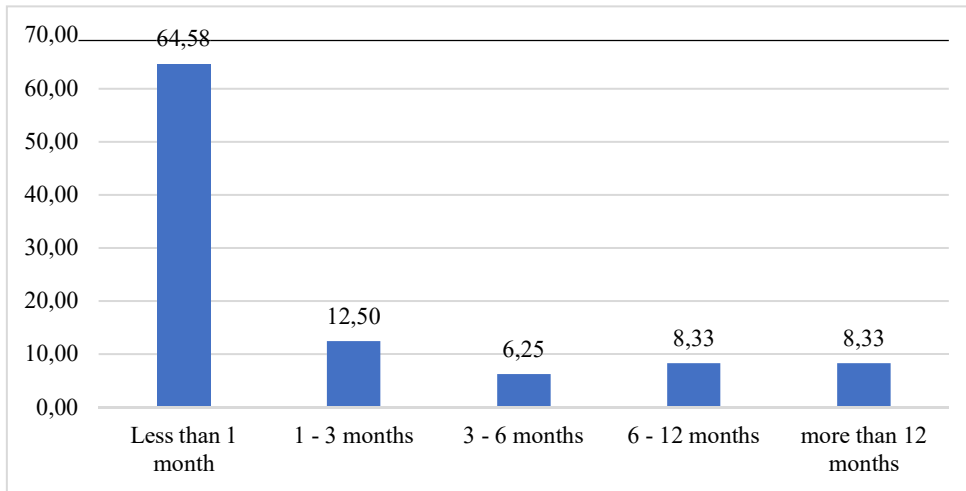
**Figure 1** Waiting period for graduate employment

In Figure 1 it can be seen that the dominant graduates work with a waiting period of less than one month, even the search results show that the dominant of them are students who were working before continuing their studies at the Master of Technological and Vocational Education. Graduates who are already working at the time of continuing their studies at the Master of Technological and Vocational Education mainly work as teachers.

The same can be seen from the results of a study [11] which found that the absorption of graduates of the Master of Vocational Education study program at the State University of Malang is in a Good category. In addition, the waiting period for graduates to get their first job was also in the good category. It was also found that the monthly income of vocational education graduates was also in the good category.

The findings Albina [12] reveal that 78.53% of their respondents are already working. 69.78% of them stated that their first job was related to their area of expertise. As many as 25.90% of graduate respondents needed 1–6 months to get their first job.

The next statement is the graduate's current job. The results of the research are shown in Figure 2.
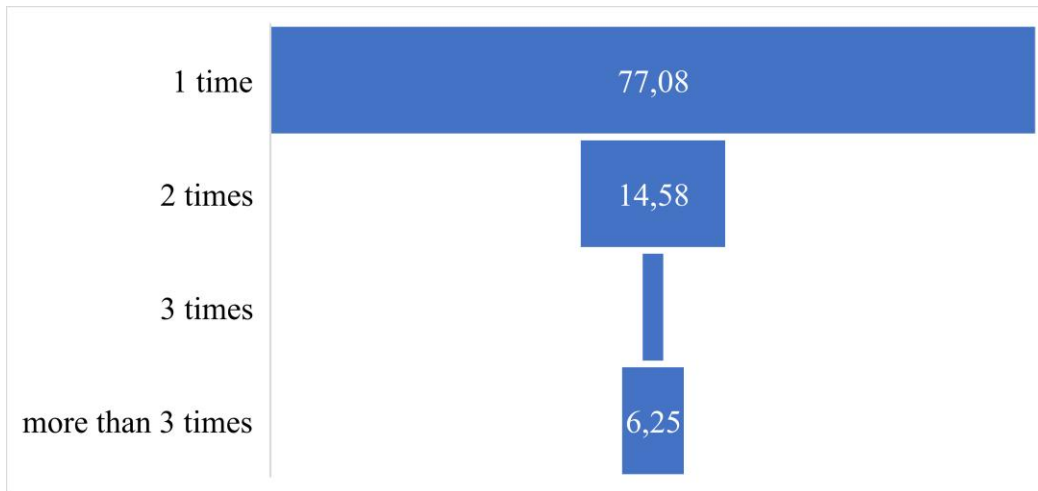


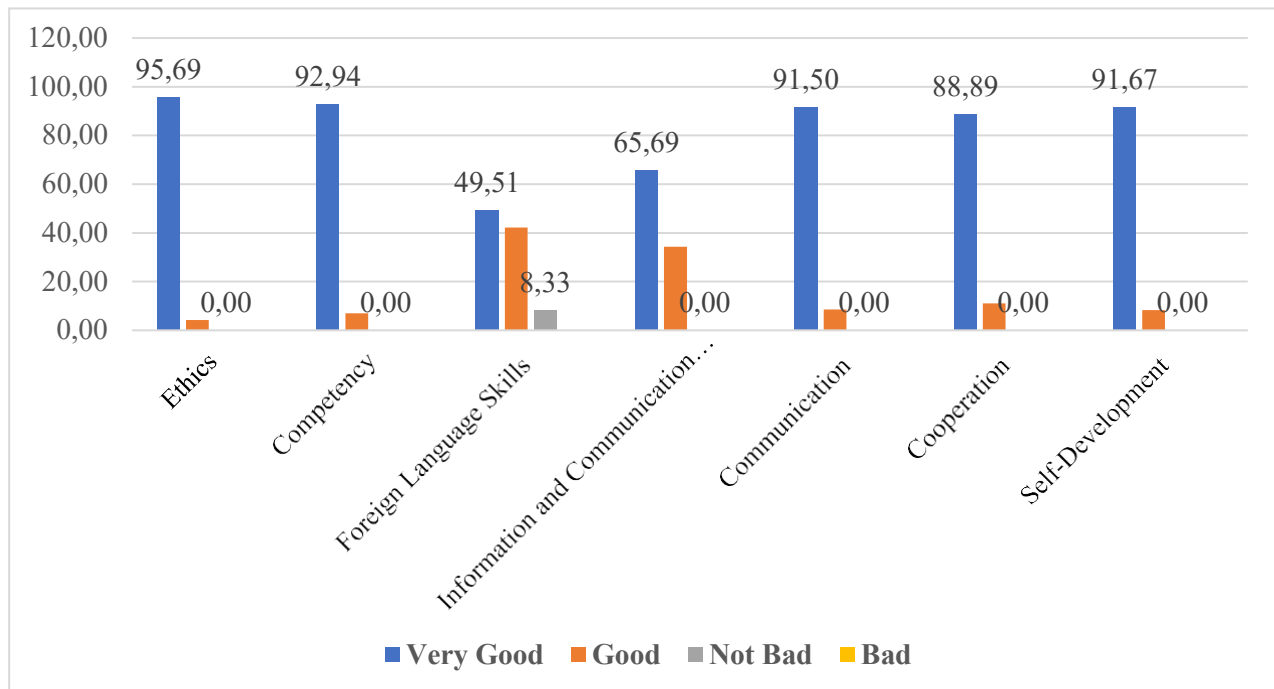**Figure 2.** Frequency of graduates with current jobs

The figure above shows that the dominant graduates who are currently working got a job with an application. As explained earlier, the graduates who were tracked were predominantly working as educators, in this case, lecturers and teachers. Graduates who worked in their current job after having a previous job amounted to 22.92%.

The results study of Sukardi [13] found that the absorption of graduates of the Faculty of Engineering, Yogyakarta State University in the labor market is good. This is indicated by the relatively short waiting period of graduates in obtaining their first job, which is less than 3 months as much as 52.8%, 3-6 months as much as 23.1%. The competence of the graduates in relation to the available job opportunities is relatively good, although

there are deficiencies in the aspects of supporting professional competence and management and leadership aspects. Tajidan et al., [14] also found that dominantly the alumni get a job is less than 6 (six) months or as long as 1 (one) semester, and they are work according to very suitable respective areas of their expertise.

The research results of Putra, et al. [15] show that three competencies are needed in future jobs for tourism and hospitality management graduates, namely fundamental, functional and professional competencies. This study suggests that preferred graduate work

competencies in the tourism and hospitality sector can be integrated and collaborated during internships and industry certification programmes. Tracer study plays an important role as an early stage in the development of a higher education curriculum that is relevant to tourism and hospitality management courses.

### 3.3. User Response to Graduate Competencies



**Figure 3** User response on Graduate Competencies

Figure 3 shows that the Ethics of graduates dominantly in Very Good Category. It also has the highest category than other six aspect of graduate competencies. Foreign Language Proficiency has lowest category of graduate competencies. Otherwise, it also has 8,33% which has Not Bad category.

Research Kardoyo [10] also found that graduate users gave a very good rating to graduates of the Master of Economic Education at Semarang State University. Graduate users are satisfied and believe that graduates have integrity, responsibility, enthusiasm for work, and sufficient competence. However, some aspects still need to be improved, namely foreign language skills and mastery of information and communication technology.

A study of Rofaida [5] found that the graduate competencies that need to be improved are English, computers, teamwork, written communication, oral communication, community empowerment, and

leadership. Improving the quality of education in management programs can be done by improving the quality of teaching, research, community service, and collaboration with industry. Through tracking studies, information has been obtained that graduates of management programs must have technical competencies and behavioral competencies in by what is required by the industry/workplace.

A study conducted by Sukardi [13] also found that the competencies of graduates that need to be improved are management skills, leadership, English, information technology, and soft skills. From the results of these studies, it can be seen that the English language skills of graduates are aspects that still need to be improved at several levels of education, both at the undergraduate and master levels. This is a challenge for program managers to improve the English proficiency of their graduates [16].

## 4. CONCLUSION

Based on the results of research and discussion, it can be concluded that The curriculum development of Makassar State University Postgraduate Technological and Vocational Education Study Program is carried out in stages, starting from adjusting the vision and mission to formulating a graduate profile involving related parties. Furthermore, the learning outcomes of the graduates will be determined based on the agreed graduate profile. Graduates of the Master's Degree in Vocational Technology Education, who are monitored, work mainly as educators, both as lecturers and as teachers at the junior high and vocational high school levels. Users of the graduates of the Technological and Vocational Education study program gave a very positive response.

## ACKNOWLEDGMENTS

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