Teknologi dan Kejuruan: Jurnal teknologi, Kejuruan dan Pengajarannya
Vol. 21, No. 27, Februari 2021: 21-27

Development of Intensive Apprenticeship Models for Accelerating Certification

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Abstract. As a consequence of the rapid development of infrastructures, there is a scarcity of availability of skilled labor in construction services, so efforts are needed to accelerate the preparation of experts in the field of construction services. Intensive apprenticeship pattern is a program to accelerate the preparation of construction service workers in increasing the relevance of higher education to the world of work as a purpose in this study. Data analysis used comparative analysis and descriptive statistics. The results of the study show that the existing pattern of internship in the field carried out by the sample universities is that there are two things that have not been widely implemented, namely the provision of insurance and special facilities. While other items related to the implementation of internships have a percentage of more than 50%. The apprenticeship patterns that can be implemented include through the process of collaboration, socialization, participant registration, self assessment, matriculation, implementation of internships, appraisal, and granting certificates from the Construction Services Business Entity (CSBE/ BUJK). Whereas Certification is carried out in general through Pre-Internship, Internships, Judicium, Post-Judiciary, Graduation and Certification of Young Experts.

Keywords: Model, intensive, apprenticeship, certification

INTRODUCTION

The policy in preparing a competent workforce is in line with government policy in developing Indonesia's infrastructure which reaches 60% of the total development in various sectors or around Rp. 267 billion in the 2015-2019 budget year. The opportunity for certified Indonesian workers to have high competitiveness can work professionally in the national and ASEAN markets. According to (Kompas, 2015) that the latest research from the International Labor Organization (ILO) states, MEA is expected to create 14 million new jobs and improve the standard of living of around 600 million people in the Southeast Asia region. It is estimated that the number of high-skilled jobs will increase by 41 percent or 14 million, while middle-skill jobs will grow by 22 percent or around 38 million, and low-skilled jobs will increase by 24 percent, equivalent to 12 million.

The problem of workers who have not been certified is almost in all fields of expertise, including construction services. The number of Indonesian construction workers currently is 7.7 million people. To pursue the balance of infrastructure development of 5519 trillion, the government has a target of 40% or around 3.08 million people (2015-2019) must be certified. The achievement of certified workers is still 19.25% or about 9 percent of the total Indonesian construction workforce. During the period of 2015-2019, from the target of 3.08 million certified people (experts and skilled workers), the government will provide 750 thousand people, and 2,250 thousand people become the task of private, professional associations, construction services business entities, and related parties' cross agency. One important element in the framework of certification for prospective construction service workers is to provide certification for prospective graduates of Higher Education as one of the relevant parties.

Related to these problems, it is necessary to have a program that can facilitate the framework of accelerating the certification of construction workers. One of the strategic efforts to accelerate the certification of young experts in construction services can be done through the relevance of engineering/vocational colleges in the scope of ASMET (architect, civil, mechanical, electrical, and environmental management) with the world of work based on job market needs, IQF (Indonesian Qualification Framework), and SKKNI (Indonesian Work Competency Standards). Universities in

Indonesia, the scope of ASMET, has the potential to produce certificates of young experts (*SKA Muda*) in various sub-fields of work needed by the world of construction work. Data on the potential contribution of the Youth SKA from the civil, environmental, and planning fields amounted to 31,445 people, not including the architectural, mechanical, and electrical fields.

Some theoretical and empirical studies indicate that the pattern of apprenticeship is able to significantly improve the competence of graduates (Huntzinger, 2009). Ralph, Walker, and Wimmer (2009) say that schools/educational institutions will not be able to prepare workers according to industry demands, without involving the industry itself, namely through apprenticeships. On the other hand, they through intensive apprenticeship activities in the world of work, have proven to significantly improve student competencies. Thus, the development of a model for the preparation of construction service workers through intensive internships is very urgent and urgent to be carried out immediately.

Literature review is used in the chapter "Introduction" to explain the difference of the manuscript with other papers, that it is innovative, it is used in the chapter " Method" to describe the step of research and used in the chapter "Results and Discussion" to support the analysis of the results.

METHODS

This research method belongs to the type of mixing method research. The research is an experimental research on the implementation of apprenticeship pattern (intensive apprenticeship model) which is continued with a competency test to obtain a certificate of young expert in construction services through professional associations and Construction Services Development Board (LPJK). The research objectives involved 4 Civil Engineering Departments in 4 Universities representing geographical regions (west, central, and east). Data analysis uses comparative analysis namely Manova to determine the level of suitability of the curriculum with the IQF and IWCS/ *SKKNI*. Data analysis also uses descriptive statistics, namely Exploratory Factor Analysis to determine the data structure, so that the biggest explanatory component in the data is known.

When the research was conducted one full semester, which is in accordance with the existing academic calendar. Learning effectiveness as intended is measured through an increase in student competence and improvement in lecturer competence, in addition to the existence of statistically significant evidence. This measurement is carried out by giving students a test of the results of the study at the end of learning. In summary, the effectiveness is indicated through the acquisition of the following two things (l) the student learning outcomes level shows an increase from the initial performance compared to the final performance after being given treatment / apprenticeship, (2) from the analysis of variance that utilizes statistics f, which is used to see the influence the improvement of the quality of learning / apprenticeship to the development of student learning outcomes is obtained by the fact that the calculation is greater than table or p-value associated with these statistics smaller than 0.05.

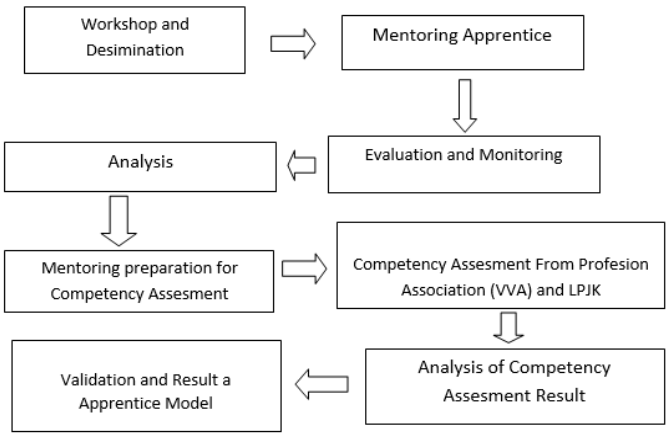

Figure1. Steps of Internship Pattern Development

RESULTS AND DISCUSSION

Execution of Existing Internships

The description of the implementation of industrial apprenticeship / practice that is measured from 6 items, there are 2 of them that have not been done a lot. The first is that apprentices / industrial work practices get insurance from internships / new industrial work practices perceived by 14.8% of student interns. The second is that apprentices / industrial work practices get special facilities, this is only accepted by 48.1% of the apprentice students. Whereas in the other 4 items, most students (percentage of more than 50%) have received an internship. Fulfillment when apprenticeship activities received by students including accompanied by a supervisor (92.6%), doing work according to expertise (70.4%), the time when doing internships is exactly the same as normal work time (68.5%) and apprentices are given special tasks to improve competence (92.6%).

The implementation of internships at various universities in Indonesia is quite good. The achievement of apprenticeship implementation ranges from 54.8% - 73.8%. The University of Jakarta and The State University of Makasar have lower achievements compared to other universities. The research data gives an explanation that in Makassar and Polinema Unhas Malang the highest achievement (69.4% and 73.8%). Overall, the entire process of conducting apprenticeship still needs to be improved so that students who take part in this internship can have high competencies or skills in accordance with their fields.

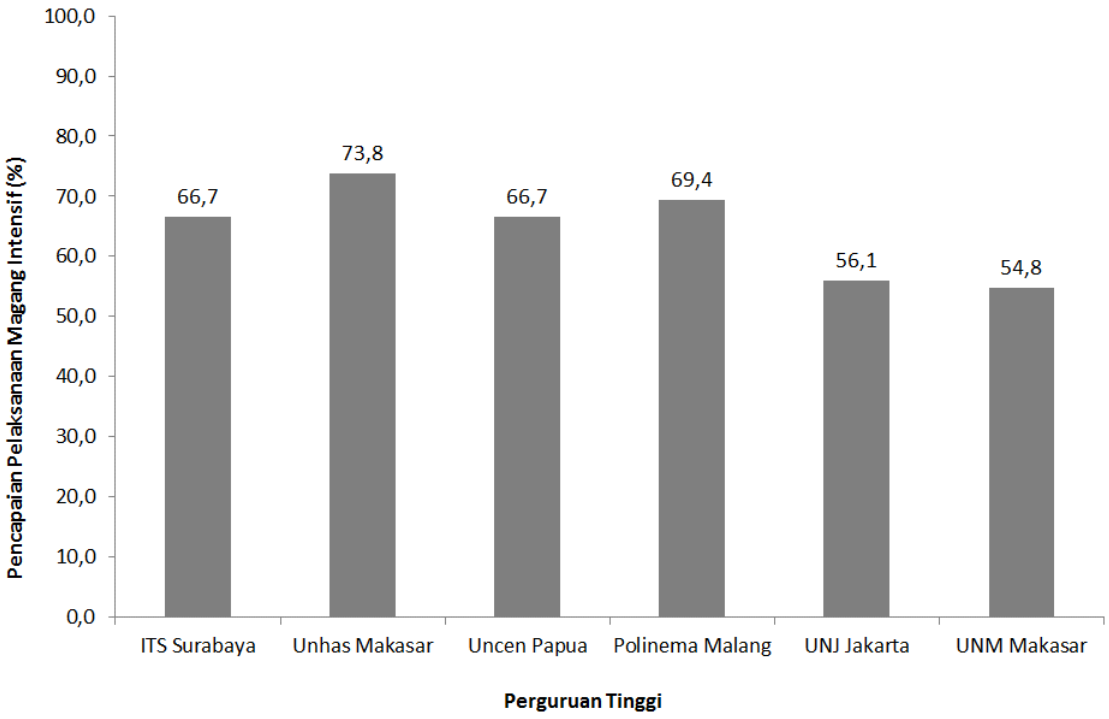

Figure 2. Achievement of Intensive Internship (%)

Intensive Internship Pattern

The results of this study are expected to be used as policy input in the acceleration of preparing the scarcity of availability of young experts in the construction services of ASMET (Architect, Civil, Mechanical, Electrical, and Environmental Management) scope. The construction workforce must be certified, this is in line with Law Number 2 of 2017 Article 70 paragraph 1, that every construction worker who works in the field of construction services must have a Construction certificate must have a work competency certificate. This research is closely related to the link and match policy that is being

developed by the Directorate General of PUPR Construction, so that in the implementation of research synergizes with the PUPR ministry regulation policy, LPJK has the authority to carry out certification, and the Professional Association that implements First Verification and Validation from Association (VVA). In connection with the above, the researcher before carrying out the limited model test conducted validation requests from the Directorate General of Construction Development, LPJKN, universities, towards the intensive apprenticeship model (Figure 3).

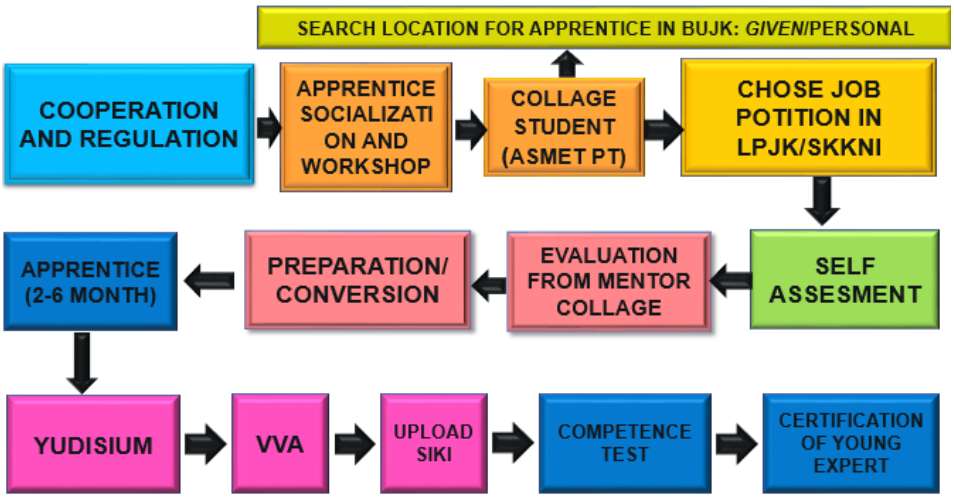

Figure 3. Intensive and Certification Internship Flowchart

The intensive internship model developed in this study is based on the results of the first year research and discussions with experts and stakeholders. The flow of the apprenticeship model developed as in Figure 3 can be explained by the mechanism of implementation, including: Universities establish cooperation with industry, especially those that will be used as an apprenticeship; Higher education institutions prepare apprenticeship signs to be used as a reference during the apprenticeship process; The university appoints several lecturers to become mentors (mentors) for apprentices during the activity; The apprentice participant chooses a job position by referring to the expertise competencies contained in the Construction Services Development Board (LPJK); Registering apprentices to several industries that have established partnerships for the implementation of internships; The college evaluates their own apprentices' program; The university still conducts matriculation based on the curriculum and the provision of expertise competencies established by LPJK; The apprentice participant must sign the contract with the internship place, where in the contract clause there are any types of work that must be done and controlled by the apprentice; The business world or place of apprenticeship appoints field supervision (field supervisors) and provides training that is maximum and in accordance with current business standards, so that students are expected to easily enter the business world when they have finished educating; Internship process for 2-6 months at the Company; The internship participant is required to make a report at the end of the internship; The internship participant who has completed the obligation at the place of apprenticeship returns to the campus to follow the judicial process and after being declared eligible is continued by completing the application for certification; Subsequent certification application documents are verified and validated (VVA); Participants upload SIKI; Participants take competency test activities; and Participants who qualify are entitled to get a Young SKA.

Through the time of the internship at least 2 months to a maximum of 6 months, students are expected to be able to absorb and understand every construction activity in the field. Furthermore, after students take part in the internship program, students have the right to register to take part in the young expert certification (SKA Muda). The general description of the implementation of the young expert certification can be seen in Figure 4.

The Young Expert Competency Certification (YECC/ *SKA Muda*) process for students who have completed an internship activity begins with a certificate by the BUJK as the first validation that the student actually follows the internship program and completes the internship with pre-determined requirements. After students complete all the requirements to get certification from BUJK, students return to campus to complete the judicial process. The judicial and administrative process on campus is attended by the students concerned until declared PASS. Furthermore, students who have been declared to pass have the right to complete the application requirements to participate in the The Young Expert Competency Certification (YECC) certification program. The completed files are verified and validated (VVA). The VVA process can be carried out by the Professional Association who is given the authority to conduct VVA in accordance with Intitutional Regulation (Perlem, 2013) after passing the next VVA the participants are registered as prospective young expert certification participants to the Provincial Construction Services Development Board (PCSDI/ *LPJKP*) and continued with the Expertise Competency Test process youth carried out by the Professional Labor Certification Unit (PLCU/ *USTKP*) in accordance with Intitutional Regulation (Perlem, 2013) for participants who have participated in the Competency Test for Young Skills and are declared qualified, they are entitled to get a Young SKA according to the chosen field. The young SKA is given at the same time as the graduation attended by the student participants. The The Young Expert Competency Certification (YECC)that has been obtained is obtained as a supporter for a Certificate of Accreditation (COA/ *SKPI*). In this way, students who graduate academically get a diploma while obtaining COA/ *SKPI* in accordance with Permendikbud 84 of 2014.

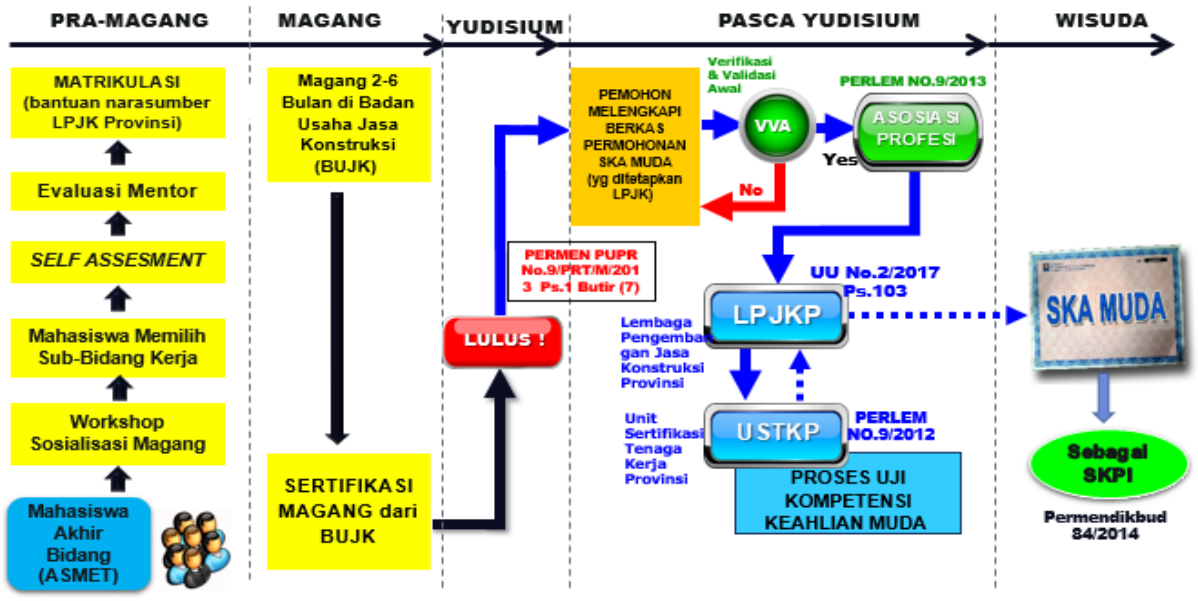

Figure 4. Certification Flow

CONCLUSION

The results of the study show that the existing pattern of internship in the field carried out by the sample universities is that there are 2 things that have not been widely implemented, namely the provision of insurance and special facilities, each of which has a percentage of 14% and 48%. While other items related to the implementation of internships have a percentage of more than 50%. The apprenticeship patterns that can be implemented include through the process of collaboration,

socialization, participant registration, self-assessment, matriculation, implementation of internships, appraisal, and granting certificates from the Construction Services Business Entity (CSBBE/ *BUJK*). Whereas Certification is carried out in general through Pre-Internship, Internships, Judicium, Post-Judiciary, Graduation and Certification of Young Experts.

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