

Assistance Skills Competency Test Activities (UKK) Software Engineering Department in SMK Negeri 6 Jember

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Abstract

The goal of this community engagement is to foster private Vocational Schools in the implementation of Competency Skills Test (UKK) Department of Software Engineering (RPL). The selected vocational practice exam is Package 3 on Car Rental App Design. The main activities of community service are accompaniment of implementation preparation, product assessment activities of vocational practice, and monitoring and evaluation (monev) value of competency achievement result. The objective of the preparation is to ensure the readiness of the implementing elements of both schools, learners' understanding of the selected package and the preparation of laboratory infrastructure for hardware, software, network, and electrical installation. The purpose of the assessment is to provide students with a certain level of competency. While the objective of monev is to evaluate the results of achievements and feedback on improvements in the implementation of the following year. Execution preparation activities are conducted by SMK Sub-Rayon and monitored by the External Examiners (Dunia Usaha Dunia Industri or DUDI). While the assessment activities conducted by the Internal Examiners and DUDI from the University of Muhammadiyah Jember and the State Polytechnic of Jember. DUDI involvement has become a requirement in the guideline of UKK implementation of National Education Standards Agency (BSNP). In addition, DUDI is expected to maintain independence and professionalism in assessing the level of competence achieved by students, and the form of recognition from competent external agencies. From the assessment by DUDI stated that the students who pass pure as much as 171 or 95,53%, passed remedial as much as 2 or 1,12% and student do not pass as much as 6 or 3,35%. The non-graduation is due to the low achievement of the competency level, and some of the students do not take the exam.

Keywords: assistance, SMK, UKK, BNSP, DUDI

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Introduction

Vocational High School (SMK) Negeri 6 Jember was established in 1965 with its address at Jl. PB. Sudirman No. 114 Tanggul District of Jember Regency. SMK Negeri 6 Jember stipulated by the Education Office of Jember Regency as Rayon 33 Sub-Rayon 33.06. The purpose of the determination is to make SMK Negeri 6 as a referral or coach for private SMKs in Tanggul District and surrounding areas. One of the coaching activities is the implementation of Competency Expertise Test (UKK) Department of Software Engineering (RPL) together. At the beginning of 2016 there were 6 SMKs participating in joint UKK activities, SMK Negeri 6 Jember, SMK Setia Atmadja, SMK Akbar Gunungsari, SMK PGRI 4, SMK Baitur Rohmah, and SMK Miftahul Mubtadi'in. Total students

involved in the activities of UKK are 179. While the matter of the selected vocational practice exam is Package 3 on Car Rental App Design.

The main activities of community service are accompaniment to the preparation of the implementation, assessment of vocational practice exam products according to the package of questions, and monitoring and evaluation (monev) of competency achievement outcomes. The purpose of the preparation is to ensure the readiness of the implementing elements of both Sub-Rayon and SMK Penggabung, learners, understanding of the selected package, and the preparation of laboratory infrastructure for hardware, software, networking, electrical installation. The purpose of the assessment is to provide students with a certain level of competency. While the objective of M & E is to

evaluate the achievement and feedback values of the next year's implementation improvement. The preparatory work was carried out by SMK Sub-Rayon and monitored by External Examiners (Dunia Usaha Dunia Industri, abbreviated as DUDI). While the assessment and monev activities conducted by Internal Examiners from the teacher team of RPL SMK Sub-Rayon and DUDI from the University of Muhammadiyah Jember and the State Polytechnic of Jember. DUDI involvement becomes a requirement in the guideline of UKK implementation from Badan Standar Nasional Pendidikan (BSNP). In addition, DUDI is expected to maintain independence and professionalism in assessing the level of competence achieved by students, and the form of recognition from competent external agencies.

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Based on the above description can be formulated two main problems that occur in the implementation of SMEs in SMK Negeri 6 Jember as follows. First, the lack of synchronization in understanding the concept and technical implementation of the UKK due to differences in the package of selected questions, material specifications and practical skills testing tools used in the computer laboratory, the achievement of the competency level of the RPL Department of SMK Negeri 6 and SMK-SMK Penggabung, therefore need to be coordinated in one integrated and organized activity. Secondly, the lack of optimization of previous external assistance activities (DUDI) has led to technical constraints during the implementation of the UKK, so that monitoring and evaluation are scheduled in every stage of implementation. Therefore, the solution provided through the Community Service Program (PKM) is the holding of advisory activities of Skills Competency Test (UKK) activity at SMK Negeri 6 Jember as SMK Sub-Rayon or coach from SMK-SMK Penggabung located around Tanggul District Jember District.

Method

The mentoring activities carried out have the following stages: (1) Coordination of preparation of activity schedule, number of participants and formation of joint committee (2) Coordination of the committee with the heads of the RPL (3) Coordination of DUDI with the Heads of RPL (4) Checking tools and computer lab materials (5) The final preparation of the implementation, (6) Evaluation of the results of the practice exam (7) Verify the value of competency outcomes, and (8) Submission of final value.

PKM program is implemented by way of cooperation between the Executor and SMK Negeri 6 Jember. In this case, the Executor acts as Assistant of External Activities and Examiners from Informatics Engineering Department Faculty of Engineering, University of Muhammadiyah Jember. SMK Negeri 6 Jember and SMK-SMK Penggabung as partners of dedication accompanied in the implementation of UKK. In this mentoring activity the main activities include coordination, service or implementation, monitoring and evaluation (monev) value of students' competence achievement.

Coordination Enhancement Activities

The activities of improving inter-agency coordination are conducted through: (1) Establishment of core committee of SMK Negeri 6 Jember and supporting committee from each representative of SMK Penggabung, (2) Scheduled meeting between core committee, supporting committee represented by Head of RPL and Deputy Head of School for Curriculum, and External Tester or DUDI, (3) Unification of views, understanding and decisions related to the specifications of laboratory equipment and materials used include software, hardware, and network devices.

Activity Improvement Activities

Improvement of services to stakeholders is done through: (1) Determination of component documents sharing of financing activities, (2) Provision of tools and practical materials in computer laboratories required for the implementation of the UKK; (3) Assessment of vocational practice test products; and (4) Provision of administrative needs of joint secretarial bodies such as presenting, reporting and activity documentation.

Monitoring and Evaluation Activities

Improvement of services to stakeholders is done through: (1) Determination of component documents sharing of financing activities, (2) Provision of tools and practical materials in computer laboratories required for the implementation of the UKK; (3) Assessment of vocational practice test products; and (4) Provision of administrative needs of joint secretarial bodies such as presenting, reporting and activity documentation. Assessment mechanism, minimum score of Minimum Skills Competence (KKM) and expected level of competence, and (4) Verification of final value by providing notes, inputs and remedial in case of KKM value has not been reached.

Results and Discussion

Community Service Activities (PKM) in SMK Negeri 6 Jember is implemented through three stages of assistance, namely coordination among institutions, implementation of activities,

monitoring and evaluation of competency achievement results in the Competency Skills Test (UKK) activities are described as follows.

Interagency Coordination

Stage coordination between institutions is done by contacting the Principal of SMK Negeri 6 Jember namely Drs. H. Suprayitno, M.Pd and Chairman of the Department of RPL SMK Negeri 6 Jember namely Lukman Hakim, S. Kom. The objective is the initial coordination of the preparation of the committee at the level of SMK Sub Rayon, and the schedule plan of the activities of UKK 2016. Sub-rayon committee then held a coordination meeting by inviting representatives of each SMK Penggabung namely Vice Principal Curriculum and Chairman of the RPL Department, as well as external examiners from University of Muhammadiyah Jember (Wiwik Suharso) and State Polytechnic of Jember (Surateno). The joint coordination meeting resulted in several decisions regarding the number and distribution of participants, internal and external examiners, expert test exam, competency standards to be tested, date of implementation, place of activity and specifications of laboratory materials and tools, (TA) 2015/2016 as follows. The number and distribution of participants of UKK activities for the academic year 2015/2016 are in Table 1.

Table 1. SME Participants Distribution

No	Class and School Origin	Amount
1	XII RPL 1 SMKN 6 Jember	39
2	XII RPL 2 SMKN 6 Jember	39
3	XII RPL SMK Setia Atmadja	3
4	XII RPL SMK Akbar Gunungsari Umbulsari	39
5	XII RPL SMK PGRI 4 Tanggul	28
6	XII RPL SMK Baitur Rohmah Jombang	15
7	XII RPL SMK Miftahul Mubtadi'in Sumberbaru	16
Total Number of SME Participants		179

a. Internal examiners come from the Teachers Teams from the Department of RPL SMK Negeri 6 Jember. The internal examiners consist of Lukman Hakim, S. Kom, Dewi Qurotul A'yun, S. Kom, M. Nur Hamid, S. Kom. External examiners from the University of Muhammadiyah Jember are Wiwik Suharso, S. Kom, M. Kom and Polytechnic of Jember Surateno, S. Kom, M. Kom.

- b. The vocational practice test package is a state document from the National Education Standards Agency (BSNP). In the National Exam of the Year 2015/2016 SMK Negeri 6 Jember and SMK Penggabung choose package 3 concerning Car Rental Application. Package 3 contains general instructions, work safety, equipment list, and questions / tasks.
- c. The competency standards to be tested are shown in Table 2.

Table 2. Standard Competence of RPL

No	Competency Standards	Indicator
1.	Installing Application Software	Installing application software as needed
		Creating databases and tables (relations)
2.	Creating a Database	Understand the cardinality ratio
		Understand functional dependency
		Modify the table structure
3.	Creating a Web Design Program	Understand web and database relationships
		Apply query (SQL) to reporting
		Create an admin page
		Create a master form, process and reporting
4.	Creating Dynamic Web Program Encoding with Web-Based Programming Languages	Adding interesting content to the form design
		Connects web with database
		Web is equipped with session (Multiuser)
		Make a feature (Insert, Update, Delete, View Data) connected database
		The form has validation
		Can make modifications to the web (replace, add, subtract)

- d. The agreed dates of implementation are dated 16 to 22 February 2016 with details: (1) Internal examiner conducts three-day mentoring and assessment activities starting from 16 to 18 February 2016 at 08.00-16.00 hours; and (2) External tester carries out assessment and assessment for 3 days ie 19, 20, 22 February 2016 hours 08:00 - 16:00.

- e. Place of assistance activities at Computer Laboratory of RPL Department of SMK Negeri 6 Jember. The computer lab contains 20 units of Personal Computer (PC) connected in a Local Area Network (LAN) network and the internet. In this activity tools and materials are required in Table 3.

Table 3. Tools and Materials of Computer Laboratory

No	Tools and Materials	Total	Description
1.	Computer	20 Pcs	Personal Computer
2.	Flash Disk	3 Pcs	Kingston 8 GB
3.	Paper A4	2 Rem	Module
4.	Paper F4	2 Rem	Module
5.	Fragrance	1 Pcs	Stella Refill
6.	Pencil	1 Pack	2B
7.	Ballpoint	1 Pack	Pilot
8.	Snell Plastic	30 Pcs	Transparent
9.	DVD RW	159	RW
10.	RAM DDR	5 DDR3	2 GB

- f. The schedule for the activities of UKK Year of Teachings (FY) 2015/2016 is shown in Table 4.

Table 4. Schedule of Preparation and Implementation

No	Date and Time	Activities	Information
1.	9 Jan 2016	Coordination of early preparation	SMK, Teacher Team
2.	16 Jan 2016	Coordination Committee, Head of Dept.	SMK and Committee
3.	20 Jan 2016	Coordination of DUDI, Head of Dept.	SMK and DUDI
4.	1-6 Feb 2016	Checking and Getting Started Tool	RPL Teachers Team
5.	8-13 Feb 2016	Preparing for UKK	SMK and RPL Teacher
6.	15-20 Feb 2016	Implementation of UKK	RPL Teacher DUDI
7.	27 Feb 2016	Verify the Value of CCA	SMK and DUDI
8.	1 March 2016	Delivery of the Value of the CCA	SMK

The Implementation of UKK Activities

In the implementation of Skills Competency Test activity (UKK) for academic year 2015/2016,

the Executor gives direction and standard of component of competency achievement level assessment and monitoring result of assessment activity from students of SMK Negeri 6 and SMK Penggabung prior to test implementation by Internal Tester. Assessment activities by the Internal Examiner lasted for 3 days, dated 16, 17, and 18 February 2016 from 08:00 to 16:00 pm. While Executor as External Examiner (DUDI)

from University of Muhammadiyah Jember together with External Examiner from State Polytechnic of Jember carry out assessment activity result of competency level achievement for three days that is dated 19, 20, and 22 February 2016 starting at 08:00 until 16:00.

The details of the activities and implementation schedule of Internal and External Tester are shown in Table 5 below.

Table 5. Implementation Schedule of UKK RPL

No	Activities	Date	Hour	Examiners	Information
1	Install application software, create databases, create web program design, create dynamic web scripts with web programming language	Tuesday, February 16, 2016	07.30 - 10.00	Internal	SMK PGRI 4 (14), SMK Baitur Rohmah (6)
			10.15 - 12.45	Internal	SMK PGRI 4 (14), SMK Baitur Rohmah (6)
			13.30 - 16.00	Internal	SMKN 6 RPL-2 (17), SMK Baitur Rohmah (3)
2	Install application software, create databases, create web program design, create dynamic web scripts with web programming language	Wednesday, February 17, 2016	07.30 - 10.00	Internal	SMKN 6 RPL-1 (20)
			10.15 - 12.45	Internal	SMK Akbar (18), SMK Setia Atmadja (3)
			13.30 - 16.00	Internal	SMK Akbar (21)
3	Install application software, create databases, create web program design, create dynamic web scripts with web programming language	Thursday, February 18, 2016	07.30 - 10.00	Internal	SMKN 6 RPL-2 (20)
			10.15 - 12.45	Internal	SMKN 6 RPL-2 (2), SMK Miftahul Muhtadi'in (16)
			13.30 - 16.00	Internal	SMKN 6 RPL-1 (19)
4	Install application software, create databases, create web program design, create dynamic web scripts with web programming language	Friday, February 19, 2016	07.30 - 10.00	External	SMK PGRI 4 (14), SMK Baitur Rohmah (6)
			10.15 - 12.45	External	SMK PGRI 4 (14), SMK Baitur Rohmah (6)
			13.30 - 16.00	External	SMKN 6 RPL-2 (17), SMK Baitur Rohmah (3)
5	Install application software, create databases, create web program design, create dynamic web scripts with web programming language	Saturday, February 20, 2016	07.30 - 10.00	External	SMKN 6 RPL-1 (20)
			10.15-12.45	External	SMK Akbar (18), SMK Setia Atmadja (3)
			13.30 - 16.00	External	SMK Akbar (21)
6	Install application software, create databases, create web program design, create dynamic web scripts with web programming language	Monday, February 22, 2016	07.30 - 10.00	External	SMKN 6 RPL-2 (20)
			10.15 - 12.45	External	SMKN 6 RPL-2 (2), SMK Miftahul Muhtadi'in (16)
			13.30 - 16.00	External	SMKN 6 RPL-1 (19)

Picture 1 below shows the place of execution and assessment process of achievement level of competence of each student by External Examiner (DUDI) at Computer Software Engineering Laboratory (RPL) SMK Negeri 6 Jember. In the picture seen student / student is making Web Based Car Rental Approach according to grid problem in Package 3 which has been selected previously on each computer or Personal Computer (PC). In this community service activity, the Executor as well as acting as External Examiner (DUDI) from University of Muhammadiyah Jember, Mr. Wiwik

Suharso, S. Kom, M.Kom came to each of the students to assess the competence related to the sub-field of modeling / design databases, reporting (reporting) and additional assignments. While External Examiner (DUDI) from State Polytechnic of Jember that is Mr. Surateno, S. Kom, M.Kom assess the competence of student / student related to sub-field of design / web scrip and web operation according to business process specified in problem, and additional assignment. The results of these assessments are the values of each sub-field of expertise which is then averaged into Final

Values (NA), and set forth in the form of the Minutes of Examination and Value List of Vocational Practice Test (UPK) Software Engineering Department (RPL) of each SMK involved. A list of Vocational Practices Values (Vocational Training Values) from SMK Negeri 6 Jember and each SMK Penggabung in detail can be seen in the Appendix, and will be further analyzed as evaluation material of UKK activities in 2017.



Figure 1. RPL Laboratory for UKK

Picture 2 below shows one of the learners who are working on the problem package 3 car rental application design in Computer Laboratory Software Engineering Department (RPL) SMK Negeri 6 Jember.



Figure 2. Learners' Practice Activity

Picture 3 below shows a photo session together after a series of UKK activities Software Engineering Department (RPL) completed in Computer Laboratory SMK Negeri 6 Jember. The joint photographs include students from the last session of the UKK, Internal Examiners and External Examiners. After the completion of this joint UKK implementation, in accordance with the schedule of UKK activities will be a closed meeting between Internal Tester, External Tester

(DUDI), Companion Teachers from SMK Negeri 6 Jember and SMK Penggabung to respond or evaluate the values that have been produced and take measurable remedial actions for students who have not reached the final value of Minimum Skills Competence (KKM).



Figure 3. The Post-Assistance Facility of UKK

1. Stage Monitoring and Evaluation of Results Competency Achievement Values

The monitoring and evaluation (Monev) stages of the achievement of the competency level of the students in the UKK activities are done by verifying the final value of both Internal Examiners and External Examiners as follows.

- (i) Verification of the final value of the Internal Tester is useful to determine the level of ability and / or early readiness of the participating students before conducting the Skills Competency Exam (UKK). The final value is communicated with the RPL Companion Teacher from SMK Negeri 6 Jember and each participating SMK involved. The communication is intended to enable Counselors to know the weaknesses of learners and to improve or improve their knowledge, understanding, skills so that they are better equipped to deal with UKK activities involving external examiners.
- (ii) Verification of the final value of External Tester is done by analyzing the mean final value generated by the students based on the origin of the vocational school, the number of participants passed without remedial, the number of participants graduated with remedial, the

number of participants did not pass. The results of the final value analysis are shown in Table 6 and Picture 4 below.

Table 6. Recapitulation of UKK Rating

No	School	Average	Pass	Remedial	Fail
1	SMK Negeri 6 Jember	79,89	76	2	0
2	SMK Setia Atmadja	70,50	3	0	0
3	SMK Akbar Umbulsari	72,21	39	0	0
4	SMK PGRI 4 Tanggul	71,22	28	0	0
5	SMK Baitur Rohmah	73,10	15	0	0
6	SMK Miftahul Mubtadi'in	43,78	10	0	6
Total		68,45	171	2	6

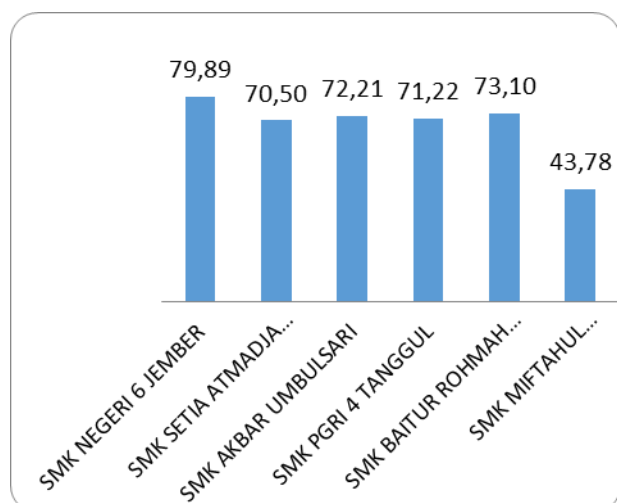


Figure 4. Average Final Score

Conclusion and Suggestion

Based on the recapitulation information on the UKK assessment in Tables 6 and 4 can be summarized as follows:

- SMK Negeri 6 Jember as SMK Sub-Rayon has the highest average value of 79.89. SMK Baitur Rohmah Jombang as SMK Penggabung which has the highest average score of 73.10. Based on the value of KKM from each school it is only SMK Miftahul Mubtadi'in which has a very low average value of 43.78 or below the Minimum Skills Competency (KKM) 7.00. Besides, the average overall value of the entire

school is 68.45 so it does not reach the value of KKM. However, 5 SMKs from 6 SMKs involved have reached more than the KKM value of SMK Negeri 6 Jember, SMK Setia Atmadja, SMK Akbar Gunungsari, SMK PGRI 4, SMK Baitur Rohmah.

- From the results of the assessment by DUDI stated that students who graduated without remedial as much as 171 or 95.53%, graduated with remedial of 2 or 1.12% and the students did not pass as much as 6 or 3.35%. Remedial is performed by assigning additional tasks according to the sub-component of the declared value. While the non-graduation is caused by the result of the achievement level of the competency level is very low and or some of the students do not follow the vocational practice test.

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