

**QUALITY IMPROVEMENT OF COMPETENCY TEST OF AUTOMOTIVE SKILL IN SMK BY USING “10 MONTHS ONLINE” MODEL****Abdurahman<sup>✉</sup>, Soesanto, Samsudi, Slameto**

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**Abstract**

This study aims to find the management model of competency test implementation so industrial market will acknowledge the test certificates obtained by vocational high school (SMK) graduates. The study employs a Research and Development (R & D) without implementing the whole steps of R&D. The research begins with the preliminary step and then continues with FGD I in order to fix model I, then the model I become model II, and then model II ended by FGD II to be the model II which is validated by the experts and practitioners upon its feasibility. These procedures are conducted considering the research finding related to a policy change is hard to be implemented. The results of the study show that one validator assesses the model as “quite feasible to be implemented”. Four validators conclude that the model is “feasible to be implemented”. Five validators categorize the model as “very feasible to be implemented”. The measurement of the model validity is 84.6%. Therefore, the competency test model "10 months online" is very feasible to be implemented. This outcome is well-embraced by the FGD participants. Based on interviews researchers with industry the findings of this research was good and the model is easy to implement. Likewise, internal assessors opinion this model is a new innovation and feasible. This study concludes that the competency test model of "10 months online" infeasible and provides a great opportunity for the industry to be involved in assessing the competency test because it is administered on Saturday and Sunday within 10 months. The involvement of industry world is expected to have a positive impact, i.e. the graduates are easier to get a job.

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## INTRODUCTION

Starting in 1999/2000, national examination for vocational schools (SMK) has been implementing a competency test for the productive components in a form of comprehensive-integrative tests for both theory and practice. The implementation of the national examination on productive components using competency test is expected to provide additional values for the SMK graduates. The value is shown by obtaining the competency certificate signed by Industrial market. Productive program is a group of training subject which is used to teach the students to gain working competencies according to the Indonesian Standards of Working Competencies (*SKKNI*).

Hall (1976:10) and Mc. Ashan (1979:31) state that there are five features or characters of Competence Based Education which gives us the idea about how an educational program must be operated, namely (1) self-pacing learning modules, (2) learning resource centers, (3) faculty teams, (4) field experiences, (5) personalization strategies, and (6) communication facilities.

According to Finch and Crunklton (1993:12) “vocational education has special characteristics which differs it from the other common educations”. Its characteristics are represented on its relationship with the potential parameter acted as a control in preparing the students to be resourceful and useful workers.

Government regulation No. 19/2005 about National Education Standards firmly states that “vocational high school is a high school which prioritizes the development of students skills for a particular job”.

Government expects that SMK graduates will not only have a graduate diploma but also a standardized competency certificate so they will be easier to get a job. Therefore, in order to measure their skills, the students are obliged to undergo a competency test which is part of the national examination.

The form letter from general director of Mendikdasmen instructs schools that in

implementing the competency test, they do not have to cooperate with Profession certificate institution (LSP). There are four options for a school to run the competency test, namely (1) conducted fully by school; (2) conducted by school collaborating with working/industrial world; conducted by school collaborating with the profession association; and (4) conducted by school collaborating with LSP.

The result of the study from Samsudi (2007:123) finds that the competency test implementation of SMK students are as follow: 1) schools collaborating with industrial world (50.33%), 2) schools collaborating with profession association (26.04%), 3) fully implemented by schools (18.72%), 4) schools collaborating with LSP (17.33%), and also there is another model in Palembang, South Sumatra, where the competency test is conducted by BLPT (1.84%). The director of SMK affairs provides free option for schools to pick over five stated models. This freedom of choice is based on the fact that each school has several different components, including practical facilities, teacher qualifications, support from industrial world in their surroundings, and the economical capacity of the students' parents. The study reveals that the most applicable model is the one with industrial world support. In the implementation of competency test model collaborating with the industrial word, the assessors come from the school while the industrial world is the one in charge to issue the competency certificate.

In order to improve the quality of competency test, the assessors plays a dominant role. Therefore, not all teachers can be an internal assessor. They have to qualify a relevant educational background related to the assessed competency program and possess at least 5 years teaching experience. They have to also gain working experience/internship in the industrial world. The requirements of having a relevant teaching experience and educational background are also applied to the external assessors. The priority goes to the assessors who have received the competency certificate as an assessor issued by the Profession Certification Board (LSP). The objectivity of assessment is guaranteed by assigning

two assessors, both internal and external assessors, for assessing one test.

The model of competency test is designed optimally in order to improve the quality of SMK graduates so they can easily enter the job market. However, the reality in the field says differently. Although SMK graduates have already received the competency certificate issued by the industrial world, they still encounter difficulties in getting a job. They still have to join several tests to be accepted by the industrial world. This fact sends the message that the industrial world still does not believe toward the competency certificate received by SMK graduates.

Such phenomenon is driven by the fact that the quality of SMK graduates still do not fit in the expectation of the stakeholders. The implementation of competency test costs lots of money. It involves the industrial world, certified assessors, and also government agencies. The test is also a long process which exhausts both students and teachers. However, in the end, the industrial world still does not acknowledge the competency certificate received through the competency test.

There is a huge need to conduct a deep research to investigate on what sectors causing the certificate of competency test not being acknowledged by the industrial world. The basic question is how the model of competency test implementation for automotive skill in order to fulfill the aspiration of industrial world is. The purpose of this study is to find the model of competency test implementation so the industrial world can acknowledge the competency test certificate received by the SMK graduates.

There are some model approaches of competency test implemented in Indonesia. This is because of its vast territory and different condition in each school and area. Related to the approach of competency test model for SMK students, Samsudi in his research (2007: 122) reveals that an approach using project work with internal and external verification is the most commonly used approach in schools (74.28%) because this approach involves

school and industrial world so that the test quality can be more accurate and meet the standard. With the collaboration approach of competency test between school and industrial world, both stakeholders can complete each other.

The characteristics of SMK and SMA are different. In SMK, the graduates are directed to enter the job market, therefore its teaching material is also taught to meet the competencies required by the industrial world. The connection between SMK and industrial world is the key of success for its graduates to enter the job fields. The dynamic demand of industry causes SMK to provide proper infrastructures to prepare the quality of graduates. Therefore, the investment and operational needs of SMK are bigger than SMA.

The previous notion is in accordance with the findings of vocational education experts, Charles Prosser, who states that the concept of education for life aims to prepare the students to survive, develop their career, work, and earn money. Education must be efficient internally and externally. This concept becomes the background for the development of work-based education, like the vocational education and life skill. Education must be functional, which means what students learn must be able to be applied in their real life

Competency test as one of the ways to improve the quality of SMK graduates must be implemented optimally. One of the dominant factors in the process of competency test is assessors because they decide whether the students are competent or not. The ideal internal assessor is a teacher who has competency certificate on one particular skill which is received from the competency test conducted by LSP. The external assessor is the assessor who is assigned by the industrial world involving three versions of area: (1) workers who do not have competency certificate; (2) workers who have competency certificate; (3) workers who become association members and have assessor certificate. The below figure 1 explains the assessors who can test the students.

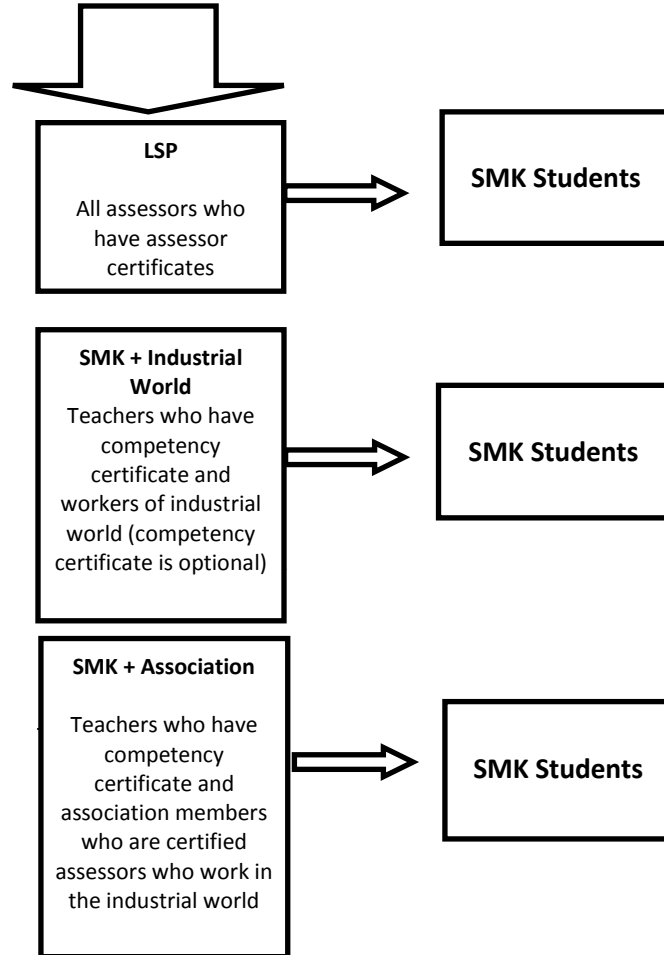
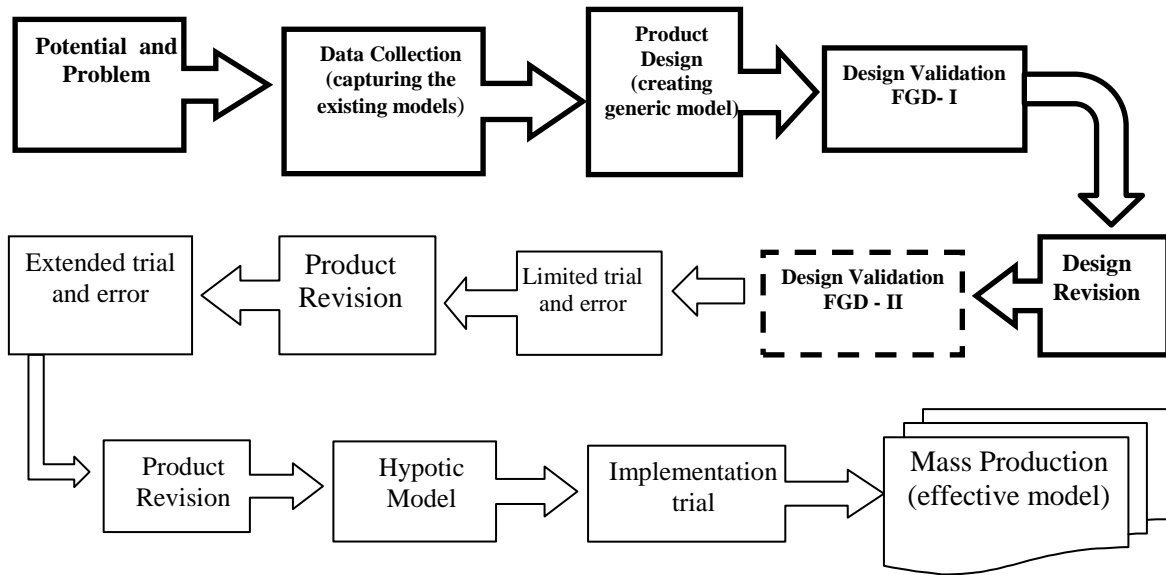


Figure 1. Assessors in Competency Test

## METHODS

This study uses Research and Development (R&D) model. R&D is a research model which is conducted to obtain particular product and assess the effectiveness of that product. In order to create a particular product, the research must conduct a need

analysis. And in order to assess and investigate the effective use of that product for the society, the study must research the effectiveness of that product (Sugiyono.2009: 407). The steps of Research and Development ( R & D ) method can be seen from the below figure 2.



**Figure 2.** The Steps on Research and Development Method (Sugiyono, 2009:407)

This study did not fully follow all the R&D steps. The study stopped in the Design Validation FGD II. Such decision was done because the result of model in form of policy change was difficult to be tested by researcher. The study was ended until the expert trial by assessing the revised model of FGD I. the expert trial was conducted by providing an assessment for the model of FGD II.

## RESULTS AND DISCUSSION

The step I of preliminary study was conducted in March 2013. In this preliminary study, researcher conducted literature review, observation and data collection on the field, data description, and factual needs analysis. The preliminary study was conducted in six vocational public and private schools which opened the study program of automotive competency of light vehicle engineering (TKR). The step II was to create the model on the basis of preliminary study and relevant literature review.

The step III of FGD I was conducted in March 2014. This step discussed the model to the stake holders. Step IV was to revise the model. The revised model was submitted to the assessor team in a form of FGD II in September 2014. The assessor

team consisted of Prof. Dr. Samsudi, Prof. Dr. Etty Susilowati, Prof. Dr. Slameto, Dr. Wardan Suyanto, practitioners of industrial world, the head of Semarang ministry education board, principals, mechanical engineering lecturers, and automotive technician association. The result of assessment served as the basis for the implemented model.

The model of competency test (UKK) was effectively conducted in 8-10 days excluding the preparation. The short implementation time did not provide enough opportunity for the students to practice and to retake the test for those who did not qualify for the test. There was a tendency to pass the students because the test is a requirement to join the national examination. The participation of industrial word is very minimally. They usually could come half day on Saturday and full day on Sunday.

The weaknesses of the implemented model are: 1) students do not have chance to do the remedial test, 2) there are 20% of students who are assessed by the external assessors and only one out of five competencies are tested, 3) there is “force” for students to be passed because the UKK is the requirement to join the national examination, 4) the external assessors only come on Saturday starting at 13.00 and on Sunday from morning. Those

situations lead to a lack of UKK quality because there are 80% students who are assessed by the internal assessors. The industrial world is “forced” to sign the competence certificate because the only stake holder which can issue the competency certificate is the industrial world. Such process causes mistrust of the industrial world toward the competency certificate received by the students. The phenomenon must not be let happen anymore. Therefore, researcher provides a solution which is expected to give contribution in improving the quality of competency test.

The solution which is offered by researcher is that the UKK is done in 10 months prior to students’ admission in XII Class. The implementation of test is on Saturday and Sunday and the registration and graduation notification are through online mechanism. Students can ask for the test since they enter XII class. Students can register through skill competency test website (UKK website). This website is established at school, for example 6 vocational schools are the member of UKK website. Students who are ready to do the competency test can register themselves through this website. Students can register on one, two or more tests depending on their readiness. The UKK website can only be accessed by XII graders who belong to the UKK web member, internal assessors, external assessors and competency test committees. The competency test will be conducted on Saturday after 13.00 and Sunday from 08.00 – 17.00. Therefore, there are more students and competencies that who are assessed by the external assessors. The positive outcome from such things is the improvement of trust from the industrial world toward the competency certificate owners. The procedure of competency test model of “online 10 months” can be seen from the figure 3.

This idea is well accepted by the FGD participants. Even the head of Semarang ministry of education board, Drs, Bunyamin, M.Pd firmly states that this model is very feasible to be implemented and has never been done before. He further states that the UKK model is very open to any change. The

other theoretical tests like Math, Indonesian, and English are now in the middle of restructure process; especially the implementation time will be pushed forward.

All of FGD participants suggest that UKK is opened in 10 months with the online model like the alternative model that the researcher advises. Because the suggested model deals with the system change, the notion needs to be proposed to the Directorate of Vocational Education Development as the decision maker.

Procedures of model competency test “10 months online”

#### **A. Preparation Stage**

1. Establishing a group of 3-6 schools
2. Assigning external and internal assessors group.
3. Creating UKK Website which functions to provide all information related to UKK
4. Socializing the use of UKK Web to the stake holders.

#### **B. Registration Stage**

1. Opening the UKK registration through UKK Website
2. Allowing only students from the school group who can open the registration from.
3. Students fill in the registration form and select the offered competencies.
4. Competency test committees in each school group member and each external assessor can check the coming registrants.
5. The UKK committees recapitulate the types of competency, number of participants, and Schools of UKK participants
6. Committees create the schedule for UKK
7. Committees send the schedule to the external and internal assessors and ask them to fill in the availability to assess and provide the revised schedule if they find the proposed schedule does not work for them.
8. After the schedule is approved by the assessors, the committees upload it to the UKK Website.
9. The test is administered according to the schedule.

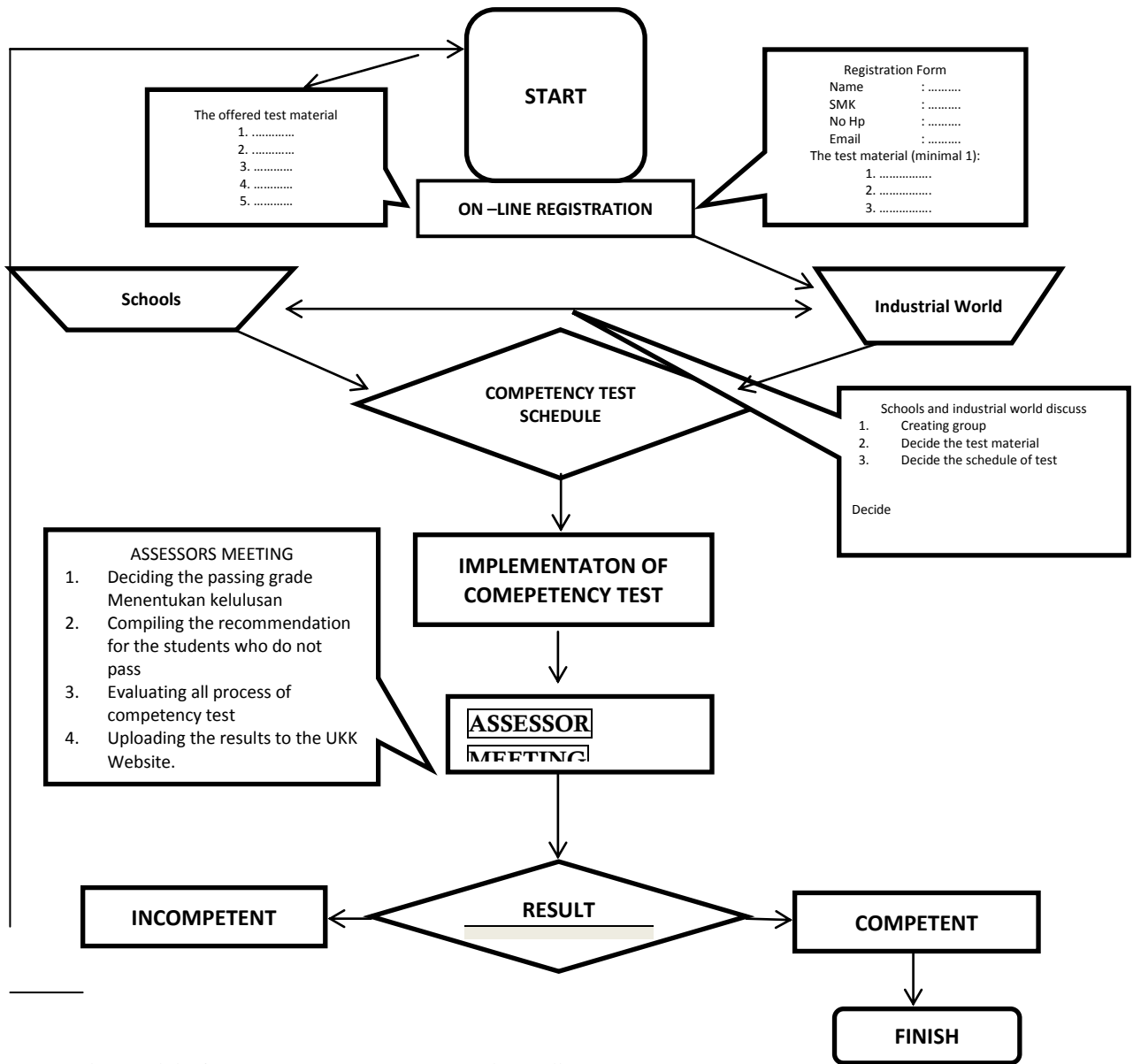


Figure 3. The model of Competency Test "10 Months Online"

### **C. Stage of Competency Test Administration**

1. Informing the students about the objectives of assessment
2. Explaining the criteria of assignments to the students.
3. Confirming the students about the method and tools used to collect the skill evidence during the test.
4. Assessors check the readiness of tools required for the test
5. Confirming and discussing the schedule of test, including the time and duration.
6. Discussing the rules/ethics/safety related to the test
7. Establishing the deals or special consideration during the test so the students receive fair treatment, including the reassessment or challenge.
8. Administering the competency test

### **D. Last Stage**

1. Meeting of passing participants by the assessors
2. The announcement of competency test result
3. Participants who do not pass are given a chance to file objection. Assessors are obliged to response the students' objection and clarify the source of failure.
4. Committees provide more opportunity to do the remedial test for those who do not pass.
5. All information related to UKK, including registration, passing announcement, is conducted through UKK website.

The general procedure is: students in the SMK group register for a competency test via online by filling in the form. The industrial world and schools set a schedule. The schedule is uploaded in UKK website. The students access the schedule and come to the competency test according to their schedule. The administration of test is conducted on Saturday and Sunday so the external assessors can participate to assess the students. This model provides an opportunity for the students to do the competency test. In the end of the 10<sup>th</sup> month, the remaining students who have not taken the test or failed are obliged to register and competency test is conducted

through block model and ended before National Examination.

There is an interesting feature which differs this implemented model with the previous models, students are free to pick one competency they want to be tested during 10 months. The students who are not ready to take the test will be given time to study until they are ready. Related to students affair, John Hattie (October 2003) in his research "*Teachers Make a Difference What is the research evidence?*" finds that there are six dominant factors which determine the students' learning success namely 1) Student 50%, 2) Home 5 - 10 %, 3) Schools 5 - 10 %, 4) Principals 5 - 10 % 5) Peer effects 5 - 10 %, and 6) Teachers 30 %. The result shows that 50% of students' success comes from themselves and 30% is from teacher. The other factor such as family situation, school condition, principals, and peer effects in each school takes approximately 5-10%.

The study shows that the students determine their own learning success. Related to this notion, the online system generally gives students to register themselves to the test whenever they are ready. The factor of students is prioritized in deciding when they are ready to take competency test and is expected to support the students' learning success.

Besides that, the online competency test gives the opportunity for the external assessors to participate directly in assessing the students. The external assessors' participation which is bigger than the 8-10 days block model is expected to give positive effect toward certificate owners. The industrial world is expected to believe more in the competency of certificate owner.

Without having the basic change, the result of competency test will be in vain as the industrial world will not acknowledge the certificate. The UKK of "10 month online" is principally encouraging more participation of the industrial world within the process of competency test.

### **Validation Result**

Validators consist of: 1) Industrial world, 2) head of ministry education board of Semarang 3) LPMP staff, 4) Mechanical Engineering Lecturers, 5)



Automotive Technician Association (ITO), 6) SMK Teachers, and 7) four Professors

Maximum score : 50  
 Minimum Score : 10  
 Score Criteria :

**Table 1.** The Score Validation of Competency Test of “10 Months online” Model

No	Name of assessors	Score	Category
1	A	46	Very feasible
2	B	47	Very feasible
3	C	46	Very feasible
4	D	39	feasible
5	E	50	Very feasible
6	F	36	feasible
7	G	30	Quite feasible
8	H	41	feasible
9	I	50	Very feasible
10	J	38	feasible
		423	

10 – 17 : very unfeasible to be implemented  
 18 – 25 : unfeasible to be implemented  
 26 – 33 : quite feasible to be implemented  
 34 – 41 : feasible to be implemented  
 42 - 50 : very feasible to be implemented

From the table 1, it can be concluded that there is only one validator who categorizes the model as “quite feasible to be implemented”. The other four validators categorize the model as “feasible to be implemented”. Five validators categorize the model as “very feasible to be implemented”. Therefore, it can be concluded that the model is very feasible to be implemented in order to fix the old model.

**Table 2.** The score of validation of competency test “10 months online” model

Maximum Score : 500  
 Minimum Score : 100

Submodel	The total obtained score of the model	The maximum score of the model ( number of statement x maximum score x number of validators)	Validity of model
The competency test of 10 months online model	423	10 x 5 x 10 = 500	423/500 x 100 % = 84,6 %

According to the table 2, we can conclude that the validity achievement of the model is 84.6%. This result proves that the competency test of "10 months online" is very feasible to be implemented.

## CONCLUSION

The online competency test model provides a significant opportunity for the industrial world to participate in assessing the competency test, because the day of implementations are Saturday and Sunday for 10 months. This participation of the industrial world is expected to provide easier access for the graduates to get a job.

The online competency test model provides opportunity for the students to register for the test material according to their readiness. Students must not always take five test materials in one test, but they can take whenever and whatever they are ready for.

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