

## Implementation of QMS ISO 9001: 2008 in Learning Process of Learning Results Subject Assembling Computer Skills Package TKJ Vocational High School in Malang

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**Abstract:** In order to improve the quality of management or the quality of their learning needs so that learning goes well that will improve the quality of education. quality improvement can be done with good management that focuses on improving the quality and international standards such as ISO 9001: 2008 applies Really Quality Control is expected to achieve effectiveness and efficiency of educational institutions. this study was to determine the extent of compliance with the study process subjects particularly productive subjects Assembling Computer Supported QMS ISO 9001: 2008, so as to optimize the quality of secondary vocational schools. This study uses quantitative methods to measure the effectiveness of the learning process of Computer Assembling lessons with student learning outcomes in program expertise Computer Engineering and Networks Middle School SMK in Malang data is derived from a population of students of class X TKJ SMK Malang with a collection of 243 samples. Data for this study using a questionnaire variables X and Y is the documentation for the variable value. interview include teachers and heads of programming skills. Analysis of the data used is the linear regression. The results of the study as well as the importance of the value of 0:00 t obtained from more than 13.613 t table shows H<sub>0</sub> rejected and H<sub>a</sub> is accepted that there is a positive influence between the quality management system ISO 9001: 2008 with Assembly Computer studying at SMK in Malang and obtained R square of 0.438 which means QMS ISO 9001: 2008 effect of 43% for the learning process. From interviews with teachers indicated that the school has implemented QMS ISO 9001: 2008 can be seen from the performance indicators as well as subject teachers productive has implemented QMS ISO 9001: 2008 in the learning process, this can be seen in terms of the administration of structured learning and organization, delivery and management in accordance with the quality guidelines.

**Keywords:** QMS ISO 9001 2008, learning, computer assembly.

Vocational education is secondary education that prepares students to work in a particular field. Various attempts have been made to improve the quality of vocational education, including through training and improving the quality of school management. The level of quality of education is always evolving in accordance with the development of society is determined by the demands of the development of technology and science. Therefore, quality improvement must be done continuously in an effort to ensure quality education. The quality of education is closely related to the quality of the learning process and it is influenced by several factors, among others: teachers, learners, methods, facilities and curriculum and administration. The learning process is a process of interaction between teachers and students with a learning environment that is managed through planning, implementation, and evaluation.

Planning is often also referred to as a bridge that connects the gap, or the gap between the present situation and the situation is expected to occur in the future. Planning precede implementation of an activity, considering the planning is the process to determine where to go

and identify the necessary requirements in a way that is most effective and efficient. Ibrahim (1993) says that the plan outline lesson includes activities to determine what purpose will be achieved by learning, what means are used to assess the achievement of these objectives, content and materials to be delivered, how to deliver, as well as tools or media as needed. With lesson plans, teachers can predict, prepare for, and determine what action will be taken on the learning process. At this stage, teachers prepare everything so that the learning process can run effectively in accordance with the standards in the curriculum.

Learning productive in vocational high schools when done well and effectively with the support of human resources, financial resources and infrastructure to make the learners experience the learning process meaningful (*meaningful learning*) and also gain useful knowledge (*functional knowledge*) that can be the basis of competence in the world of work. According Murniati and Usman Nasir (2009: 2) vocational education has a direct influence on the process of industrialization, especially when associated with function satisfy the needs of a skilled workforce and reliable and has the vision and serious attention to the development of technology. Providing education and teaching in vocational basically an attempt to equip learners with the ability to match the criteria expected by the industry and the business world, to be able to succeed in the world of work should be supported with academic success in school.

Academic success is often referred to as a learning outcome that would encourage certain behavior for students, where evaluation and evaluation required. Anas (1996: 26) states that the purpose of the evaluation can be grouped into two categories, namely: (1) to obtain data to support the achievement level of competence and (2) to assess the effectiveness of teaching methods that have been used by teachers. From this it can be understood that the evaluation was to evaluate the results of the study whose main purpose is to determine the extent to which the student controls the competencies that must be mastered. It can be concluded that the learning process will produce quality graduates output quality. To get a good quality assurance needs to be prepared as well as the monitoring and improvement of the learning process systematically.

If seen the quality of education in Indonesia is still lagging behind when compared with neighboring countries. The survey results European Institute for Corporate Development (OECD) conducted in 2015 ranked Indonesia ranked 69th out of 76 countries, it is in contrast with Singapore ranking first, according to the OECD report that the standard of education is a predictor for long-term prosperity of a country, The quality of education in Indonesia is affected by the national education system and human resources (HR). The survey results Human Development Index (HDI) by the National Unit Development Program (UNDP) Indonesia was ranked 110 while Malaysia and Singapore was ranked 62 and 11. He then explained that Mukhadis (2003: 1) that the level of achievement of learning objectives in vocational allegedly still relatively low, According Sugiyono (Riban, 2011: 1), the failure of education to develop human resources in Indonesia caused by the management of education in Indonesia has not been done professionally. It is supported in law no.14 of 2005 on teachers and lecturers Chapter II, Article 4 reads: "The position of professional teachers is as professional staff in elementary education, secondary education and early childhood education in the officer appointed in accordance with the law serves to enhance the dignity and role of the teacher as a learning agent serves to improve the quality of national education"

Based on the above statement the professional teachers teaching agency that works to improve the quality or the quality of education. Quality is not only meet the national standard, but also must meet international standards (Matri, 2008: 9). To get a quality management or improve the quality of their learning needs so that learning goes well that will improve the quality of education. Quality improvement can be done with good management that focuses on improving the quality and international standards such as ISO 9001: 2008 applies Really Quality Control is expected to achieve effectiveness and efficiency of educational institutions.

The quality management system of ISO (International Organization for Standardization) can be adopted to improve the quality of learning subjects particularly productive subjects computer assembly. Implementation of QMS ISO 9001: 2008 in a study that focused on improving service quality of learning, which in turn have an impact on improving the quality of schools and quality of education. This is consistent with the statements made by Suardi (2003: 3), "The quality management system will provide assurance to customers that the company has the responsibility for quality and is able to provide products and services according to their needs" and Harjosoedarmo (2004: 73) " ISO QMS implementation can change the orientation of organizational culture on a culture of quality, which in turn can improve organizational performance ".

QMS ISO 9001: 2008 specifies requirements and procedures as well as recommendations for the implementation of learning. Requirements and procedures, and recommendations for QMS ISO 9001: 2008 is applied to the school management that is how the lesson plan will be documented in a lesson plan, the implementation process of learning that are tailored to the plans that have been made, monitor the smooth implementation of learning and evaluation after implementation. QMS ISO 9001: 2008 in the field of vocational education especially productive learning Computer Assembly aims to ensure a good learning process in accordance with the requirements and procedures to ensure the quality of education. Assembling a computer is one of the compulsory subjects and basic computer skills packet network which is one of the basic competencies to support the continued competence and computer assembly will be very useful after graduating from a vocational school.

CMS has implemented QMS ISO 9001: 2008 have to apply it in daily learning process them. So it should be a priority in order to improve the performance of human resources. In the world of education, including human resources is the principal, teachers, staff, students and parents. In terms of improving the quality of education and the role of learners print quality of teachers is the main thing. Therefore we need a teacher who has a good performance. Schools will begin to implement a Quality Management System (QMS) ISO 9001: 2008 will build on work instructions for each unit. Starting from principals, vice-principals, heads of expertise, teachers and employees have their respective duties.

Work instruction support unit to make it easier to perform tasks. Work instructions contain instructions for each activity in the SOP and lay down the criteria required by the work unit. Work instructions are executed once created the form. Form contains the desired data. Once the form is filled with data obtained, this form is called a record. Creating documents ISO 9001: 2008 ranging from level I to level IV, requires precision and uniformity in their respective personnel. Documents required by the standard. There are six documents of QMS ISO 9001: 2000, namely: (1) a quality manual; (2) the quality of the policy; (3) the quality objectives; (4) the duties, responsibilities and authority; (5) work instructions; and (6) the form of notes QMS ISO 9001: 2008. After that it can be implemented the necessary internal audit and audit SURVILANCE that issued the certificate QMS ISO 9001: 2008. Internal Audit in the implementation of QMS ISO 9001: 2008 is a very important activity and one of the procedures or clauses required in the implementation of QMS ISO 9001: 2008. Because the school is implementing QMS ISO 9001: 2008 have to do the measurement, analysis and improvement, schools must set out a number of activities related to measurement, analysis and improvement refers to the clause number 8 on the measurement, analysis and improvement. In clause 8.1 as well as the number of schools to plan and implement the monitoring, measurement, analysis and improvement are aimed at: (1) demonstrate conformity to product requirements; (2) to ensure conformity of the quality management system; and (3) continue to improve the effectiveness of the quality management system.

Observations were made Monday, September 14, 2015 investigators conducted preliminary research for a number of schools that have received and implementing QMS ISO 9001: 2008, among others SMK Negeri 5 Malang, SMK Negeri 8 Malang, SMK Negeri 10 Malang and SMK National Malang. From these results it can be concluded that the school acquired the certificate of QMS ISO 9001: 2008 for the school's ability to implement a quality management system that is supported by human resources such as competence of teachers, support staff and school community. However, there are still some obstacles in the field due to the reduced commitment, consistency and consequently some subject teachers productive learning provisions contained in QMS ISO 9001: 2008.

Differences in the quality of the learning process before and after the implementation of QMS ISO 9001: 2008, according to Sunoto (2012: 88) can be viewed in three dimensions: (1) set of learning strategies; (2) instructional delivery strategy; and (3) learning management strategies. Sunoto further research conducted in SMA Negeri 1 Sindang and organizational dimensions of vocational learning Losarang mention there was an increase of 9.25%, for the dimensions of the delivery of learning there was an increase of 8.19%, while the dimension of learning management increased by 6.95% before and after implementation of QMS ISO 9001: 2008. It can be concluded that the policy of QMS ISO 9001: 2008 can improve the quality of the learning process. When associated with the implementation of QMS ISO 9001: 2008 with Curriculum 2013 will strongly associated with the 2013 curriculum that emphasizes student learning plans for active and QMS ISO 9001: 2008 is a procedural work to ensure the quality of the implementation of learning.

Given the relationship between the implementation of QMS ISO 9001: 2008 by the quality of the learning process, it is necessary to determine the level of compliance with the study process subjects particularly productive subjects Assembling Computer Supported QMS ISO 9001: 2008, so as to optimize the quality of secondary vocational schools. See explanation above, the writer interested in conducting research entitled "Study on Implementation of QMS ISO 9001: 2008 Against the Learning Process Subject Assembling Computer Discount Computer and Networking Skills SMK in Malang".

## **METHOD**

This study aims to determine the application of QMS ISO 9001: 2008 in the learning process and their impact on the results of certain subjects TKJ Computer Assembling membership program learn. The results of this study can be used as a reference in the evaluation of policy making with regard to the learning process and the implementation of ISO 9001: 2008 which has been implemented, so that later went smoothly, effectively and efficiently so the impact on school improvement. Quantitative methods are used when the problem is a deviation between that supposed to happen, with the implementation of the plan. Based on the background and the formulation of the problems that have been mentioned, this study uses quantitative methods to measure the effectiveness of teaching and learning process Assembling Computer-supported implementation of QMS ISO 9001: 2008 with the results for students at Computer Engineering and Networks program Middle expertise SMK in Malang.

The study consists of one independent variable (independent variable) and the dependent variable (the dependent variable). The operational definition of this study are: the independent variable (X) Implementation of QMS ISO 9001: 2008 in the learning process that the management systems approach to customer satisfaction in the field of design institutes, development, production and service. The dependent variable is (Y) is the Assembly Learning Outcomes Computer is as and evaluation to find information about the planning and implementation of learning assignment Assembling Computer.

The population of this quantitative study is from students in class X TKJ SMK Negeri Malang Se and qualitative data derived productive teacher. The sampling technique used by the researchers is proportional random sampling; sampling is adjusted by the ratio of students per school, so from 12 public schools that have a packet network expertise Computer captured five schools, namely: SMK Negeri 2, SMK Negeri 5 SMK Negeri 8 and SMK SMK 10 and 12. The one method used to determine the number of samples is to use the formula Slovin (Sevilla et al 2007 :. 182), as follows:

$$n = \frac{N}{1+N(e^2)} \quad (1)$$

n = Samples

N = Population

Table 1: Number of Samples

No.	School	Population	samples
1	N 2 Malang	98	38
2	SMKN 5 Malang	136	53
3	SMKN 8 Malang	123	48
4	SMKN 10 Malang	173	68
5	SMKN 12 Malang	92	36
	amount	622	243

Sources of data in this study were (1) Document record / records related to the pattern of PDCA (Plan - Do - Check - Action) in the learning process and learning administration. (2) The results of the interviews conducted by the Principal, Vice management curriculum and quality of teachers and courses productive especially Assembling packages Computer skills Computer Engineering and Networks for a variety of information about its own implementation of QMS ISO 9001: 2008 in the learning process has been done in SMK. (3) Questionnaire given to students to obtain data on how the effects of QMS ISO 9001: 2008, to the learning process Assembling Computer.

Table 2 Sources of Data

No.	variable	Data source	Instrument
1	QMS ISO 9001: 2008	Teacher	Interview
2	Learning process	student	questionnaire
3	Values Competence Computer Assembling	student	Documentation

Before being used to collect data, research instruments will be tested in advance so that the data obtained can describe the condition variable is measured in accordance with reality. This study uses two trials, (1) the validation test performed on the content of the material world, the construction field and the field of language used. (2). Test the validity of the questionnaire was used to determine the level of accuracy of item questionnaire to measure what will be measured. (3). Reliabilities test questionnaire reliable say if these tests provide consistent results when tested repeatedly, or if the test result is changed, the changes that can be said by no means.

Table 3 Criteria Validity of Contents

No.	Percentage	Criteria
1	81% - 100%	Very high
2	61% - 80%	High
3	41% - 60%	Enough
4	21% - 40%	Low
5	0% - 20%	Very low

Formula:

$$\%VSX = \frac{\text{Jumlah Skor Penilai}}{\text{Jumlah Skor Maksimum}} \times 100\% \quad (2)$$

Information: VSX = Validity contents

Table 4 Criteria Validation Items Questionnaire

criteria	Classification
Between 0.80 up to 1.00	Very high
Between 0.60 up to 0.80	High
Between 0.40 up to 0.60	Enough
Between 0.20 up to 0.40	Low
Between 0.00 up to 0.20	Very low

If  $R_{\text{arithmetic}} > R_{\text{table}}$ , the correlation is significant, meaning that the item is valid questionnaires.

Formula :

$$r_{pbis} = \frac{X_1 - X_2}{SD_t} \sqrt{\frac{p}{q}} \quad (3)$$

Information :

rpbis = correlation point biserial

X1 = the mean level 1

X2 = the mean level 2

Tsp = deviation of total deviation

P = proportion

q = 1 - p

Table 5 Criteria Reliability Questionnaire

power Reliability	kreteria Reliability
0.00 < r xy < 0.19	Very low
0.20 < r xy < 0.39	Low
0.40 < r xy < 0.59	Enough
0.60 < r xy < 0.79	High
0.80 < r xy < 1.00	Very high

Formula:

$$r_{11} = \left[ \frac{k}{k-1} \right] \left[ \frac{s^2 - \sum pq}{s^2} \right] \quad (\text{arikunto, 2008:100}) \quad (4)$$

Information:

R11 = overall reliability test

P = proportion of subjects who answered the item correctly

Q = the proportion of subjects who answered the item with one ( $q-1 * p$ )

$\Sigma pq$  = the number of the multiplication of p and q

K = number of items

S = standard deviation of the test (the root of variance)

Data analysis performed in this study include descriptive analysis and quantitative (statistical). Descriptive analysis is used to describe the characteristics of respondents, and a description of the study variables. While the statistical analysis used to test the research hypothesis. This study tried to determine the effect of variables Quality Management System ISO 9001: 2008 with the improvement of vocational education Computer Assembling

## **RESEARCH RESULT**

Results obtained in the form of qualitative and quantitative data. Quantitative data obtained from 1) the test instrument. 2) Test analysis criterion and 3) Test the hypothesis. Interview Model was used to obtain quantitative data.

### **Quantitative Data**

#### **1. Trial Instruments**

The validity of the content carried by two teams of experts, Mr. Dr.Eddy Sutadji, M.Pd and Dr.Tri Atmadji S., M. Pd contents validation results are presented in Table 6.

Table 6 Results Validation of the contents of the expert team

No.	validator	percentage
1	Dr.Eddy Sutadji, M.Pd	81%
2	Dr.Tri Atmadji S., M.Pd	82%
	Average	81%

Based on table 6 it can be seen that the end of the instrument has content validity by 81%. Before use, it will be tested before class students who've studied the subject "Computer Assembly" C class XI TKJ SMK Negeri 5 and XI TKJ SMK Negeri 12 B Malang

The validity of the questionnaire used to determine the level of accuracy questionnaires to gauge what will be measured. Validity test is done in class XI TKJ SMK Negeri 5 and 12 Malang as many as 54 students, the results of testing the validity of the questionnaire were performed using SPSS 16 is presented in Table 7.

Table 7 Results of Student Questionnaire Validity Test Item

Item Questionnaire	Values count r	Information
Item 1	0614	worthy
Item 2	0619	worthy
Item 3	0463	worthy
Item 4	0574	worthy
Item 5	0727	worthy
Item 6	0626	worthy
Item 7	0649	worthy
Item 8	0698	worthy
Item 9	0500	worthy
Item 10	0598	worthy

Item 11	0334	worthy
Item 12	0535	worthy
Item 13	0602	worthy
Item 14	0678	worthy
Item 15	0418	worthy
Item 16	0675	worthy
Item 17	0606	worthy
Item 18	0574	worthy
Item 19	0453	worthy
Item 20	0537	worthy

From table 7 it is known that a valid point as much as 20 grains. After calculating the validity of the questionnaire we then tested reliability. Reliability test results for the student questionnaire for 0890 so that this issue can be categorized reliably with very high criteria.

## 2. Criterion test analysis

The test results of student's normality of the data presented in Table 4.3 and more (see attachment)

**Table 8: Results of normality test**

### One-Sample Kolmogorov-Smirnov Test

		X	Y
N		243	243
Normal Parameters <sup>a,b</sup>	Mean	77.64	79.28
	Std. Deviation	6.934	6.213
Most Extreme Differences	Absolute	.076	.049
	Positive	.054	.049
	Negative	-.076	-.049
Kolmogorov-Smirnov Z		1.191	.767
Asymp. Sig. (2-tailed)		.117	.598

a. Test distribution is Normal.

b. Calculated from data.

Table 4.3 can be explained that the data has a normally distributed variable by looking at the significance value greater than 0.05. Linearity test results and student teacher data are presented in Table 4.4 and more (see the appendix)

**Table 4.4 Results of linearity test**

			Df	Mean Square	F	Sig.
Y * X	Between Groups	(Combined)	35	153.257	7.978	.000
		Linearity	1	4092.582	213.042	.000
		Deviation from Linearity	34	37.395	1.947	.003
	Within Groups		207	19.210		
	Total		242			

In Table 4.4 can be explained that the two data variables have a linear relationship to see the significance value less than 0.05.

Hypothesis testing is done by linear regression. The hypothesis tested is: H0: N is a positive influence between the quality management system ISO 9001: 2008 with Computer Assembling learning at SMK in Malang.

## 3. Hypothesis testing



Calculation results of hypothesis testing (linear regression) questionnaire with final scores of students can be seen in table 4.5, 4.6 and 4.7

**Table 4.5 Table Summary**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.662 <sup>a</sup>	.438	.436	4.666

Predictors: (Constant), X

Rated R square of 0.438 means the ability of independent variables to explain the magnitude of the variation in the dependent variable is 43.8%.

**Table 4.6 Anova**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4092.582	1	4092.582	187.943	.000 <sup>b</sup>
	Residual	5247.945	241	21.776		
	Total	9340.527	242			

a. Dependent Variable: Y

b. Predictors: (Constant), X

In the same way by F test, then we can see from the sig. Since F arithmetic of 187.943 who have sig 00:00 less than 5%, it can be concluded that all variables have a significant effect on the dependent variable and the hypothesis is accepted.

**Table 4.7 Coefficient**

<b>Coefficients<sup>a</sup></b>					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	33.228	3.372		9.854	.000
X	.593	.043	.662	13.709	.000

a. Dependent Variable: Y

Proficiency level of output, the regression equation is:

$$Y = a + bX$$

$$Y = 33.228 + 0.593X$$

From the table above have sig is less than 0.05, or 5%, it can be said that the independent variable is significant at the 5% level, and said significant then we will formulate hypotheses that have been received.

## **DISCUSSION**

According Shutler and Crawson (Ariani, 2002: 308) states that educational institutions implement quality management system ISO 9001: 2008 should include seven (7) aspects of the graduates, prospective students, syllabus, teaching, teachers, exams, and leadership. Educational institutions in the city have been carrying out poor quality management system ISO 9001: 2008 with the right. Teacher as facilitator of the learning process into a study to measure the quality of learning, and inside there are three strategies that became the center of

attention (Uno 2011: 158). The third strategy is. 1) set of learning strategies. 2) Learning delivery strategy. 3) Learning management strategies. Teachers in the third that's a poor strategy.

The hypothesis states that "There is a positive influence between the quality management systems ISO 9001: 2008 in a study by the Computer Learning Outcomes Assembly at SMK in Malang". The hypothesis has been accepted by linear regression analysis of the test results. The findings of this study indicate that the implementation of QMS ISO 9001: 2008 had a positive impact of 43.8% in the learning process of Computer Assembling membership packages class X TKJ SMK Negeri productive in Malang. the teacher's role as facilitator of the learning process is very important, through the participation of student teachers will be more active and aware of the importance of the role of teachers as lecturers and tutors and providers of information to students.

## CONCLUSION

From the discussion of the results of research that has been described previously, it can be concluded that: (1) Implementation of the learning process is supported by the implementation of QMS ISO 9001: 2008 at SMK in Malang include planning, implementation and assessment of learning processes that are tailored to the guidelines of the quality standards set by each agency; (2) The activities of learners with learning Computer Assembling subjects *had a mean* (average) 77.64 can be considered quite good; (3) The results of student learning computer assembly has a *mean* (average) 79.28 can be considered quite good; (4) There is significant influence prove the hypothesis testing results show the independent variable is the subject of the learning process of Computer Assembling (X) support the implementation of QMS ISO 9001: 2008 in the dependent variable is the result of learning (Y) with the coefficient of determination ( $R^2$ ) of 0.438 means that the ability of the independent variables affect the dependent variable 43.8%

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