

# Development of Total Quality Management Model Integrated with Soft Skills Based on Competency-Based Training in Increasing the Interest and Competence

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## Abstract

The training model carried out by teachers in schools has little impact on student competence, especially preparing students later after graduating from school. This study aims to determine: (1) product validity of total quality management model integrated with soft skills based on Competency Based Training; and (2) product effectiveness of the total quality management model integrated with soft skills based on Competency Based Training implemented in increasing the interest and competence of developed vocational high school students. This research includes development research carried out by vocational high school teachers in Medan City. Subjects in this study were students consisting of 36 people. The object of this research is a product of total quality management model integrated with soft skills based on Competency Based Training. The research results show that: (1) In the validation of material experts, it is known that the average of total score of Competency Based Training material according to material experts is 96,5 with a percentage of 91,9% in the very feasible category. Furthermore, based on the validation of media experts, it is known that the average of total score of total quality management model integrated with soft skills based on Competency Based Training according to media experts is 88 with a percentage of 95,9% in the very feasible category; (2) The results of the analysis can be seen from the calculation of the t value for the training factor of 7.322, it can be concluded that  $t_{count} = 7.322 > t_{table} = 2.042$ , this value is much smaller than the significance level of 0,05, so it was concluded that  $H_0$  which stated that the soft skills behavior of students who were taught with the total quality management model integrated with CBT-based soft skills was lower than the student learning outcomes of students who were taught with conventional training models were rejected. In other words, it can be stated that the learning outcomes of students who are taught with total quality management model integrated with CBT-based soft skills are higher than the behavior of soft skills of students who are taught with conventional training models.

**Keywords:** Total Quality Management, Competency Based Training, Interests, and Soft Skills

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## 1. BACKGROUND

Quality education is education that is able to carry out the process of maturing the quality of students which is developed by freeing students from ignorance, incompetence, powerlessness, untruth, dishonesty, from bad deviant behavior, bad morals and low faith (Givron & Deseilles, 2021). Education is an important factor in human resource development, because it is a provision for entering the world of work or the industrial world. The quality of labor influences the growth of real output per capita positively and significantly, and in the long term human capital has a positive and significant influence on output and technical progress (Peterson et al., 2021).

The challenges facing vocational education (SMK) which serve the economic, social and political and educational systems are marked by the diminishing quality of Indonesian human independence. Through this strategy, it is hoped that it will create self-empowering communities, especially graduates from Vocational High Schools (SMK). In research by Grimm & Blazovich (2016) also said that the importance of providing social entrepreneurship education enables the development of children's abilities and to generate innovative solutions to social problems.

Facts in the field show that the low contribution of education in creating self-empowering graduates is a contributor to the open unemployment rate with the highest percentage being Vocational High School (SMK) graduates, which is 11,41% compared to other levels of education (Givron & Deseilles, 2021). Based on this, it is necessary to develop an educational model to provide extra competence for Vocational High School (SMK) students so that they have competitiveness. Tseng et al., (2019) also suggested that there is a need for further research on appropriate education, where teachers are needed to provide further support in designing competency-based training, and authentic learning to support continuous learning. Givron & Deseilles, (2021) also provides details of the unemployment rate in Indonesia of 7,01 million people out of 190,59 million

people of working age and 131,55 million people in the labor force.

Some of the causes above will result in many educational institutions considering subjects in SMK only as complementary subjects, so that the learning process is not carried out seriously (Givron & Desseilles, 2021). Education planning in SMK seems to be still sober or only following the usual patterns of activities and culture. The number and quality of subject teacher competency profiles have not been adequate according to the expectations implied in the SMK development strategic plan in 2017-2021. The problems in the field illustrate that education programs at the secondary school level are still not effective and have only focused on hard skills. So, the concept of teaching in competency-based soft skill education is to transmit one's mindset and behavior to students (Givron & Desseilles, 2021).

Therefore, Kim et al., (2017) providing research advice, namely the need for international studies related to broader competency-based training and the role of school principals, the school's cultural environment, and different school systems to promote and develop competency-based training education. The data shows that the average number of SMK graduates is relatively small, namely less than 2% per year of graduation (Junek et al., 2009). On the other hand, the reality shows that many SMKs do not yet have a clear roadmap regarding the development of SMK education (McPherson et al., 2016). The implementation of total quality management in Vocational Schools has not been able to accommodate the values of soft skills in an integrated manner, so that some of the efforts made have not significantly developed a soul which includes independence, self-confidence, creativity, innovation, visionary and competitiveness as the basic capital to become prospective novice entrepreneurs who become one of the determining factors for the progress of a country.

Total quality management is a planned and applicable effort to increase the knowledge, intentions and competencies of students to develop their potential which is manifested in creative, innovative behavior and the courage to manage risks in responding to future challenges. Lupi et al., (2012) suggests that future research can emphasize the concept of total quality education with a training system for school principals and teachers first, this is because total quality management plays a central role. In addition, a person's success in life is determined more by his soft skills than hard skills or technical abilities. As the results of the study state that a person's success is solely not determined by the ability of technical knowledge (hard skills), but is determined by the ability to manage oneself and others. Soft skills contribute 80% in supporting the success of entrepreneurship education and hard skills (knowledge, skills and expertise) only contribute 20% (Jones et al., 2021).

The importance of soft skills skills that must be owned by every human resource, especially the output of educational institutions, because according to Chan & Yeung, (2021) that human resources that lack of soft skills have an impact on the high unemployment rate of productive age. This is because these human resources will not be able to compete in the world of work, in addition to the limited employment opportunities. Equipping students with soft skills can improve the bargaining position of graduates in fighting for job opportunities at the regional, national and international levels. As stated by Strachan & Maarsingh, (2021) found that the aspects of soft skills (leadership, personality, and motivation) of the workforce are very dominant as a prerequisite for the workforce. In addition, survey results by Drame et al., (2021) explained that the world of work considers that graduates who have high competence are those who have technical skills and personality.

The results of another study related to the soft skills of vocational students conducted by Holzkämper et al., (2012) shows that the development of soft skills of SMK students which includes self-management skills, communication skills, professional ethics, team work and student entrepreneurship is still low. This condition is suspected because the development of students' soft skills has not been implemented optimally, as well as a lack of understanding of the concept of soft skills by leaders, teachers and students.

Research on education in SMK proposes an integrated education model so that SMK is able to produce graduates who have high motivation and skills (Johnson et al., 2021). Other research shows that through educational institutions with practical and interesting learning can arouse students' interest (Lyu & Liu, 2021). Besides that, Stevenson & Starkweather, (2010) emphasizes that a person's formal education can be the main potential to be successful.

Total quality management is becoming one of the new factors in the sustainable context for the assessment and provision of education in school-based environments (Givron & Desseilles, 2021). On the other hand, research results by Wagner et al., (2019) concluded that in practice in learning there were some materials taught that were not on target. This is not in line with (Stevenson & Starkweather, 2010) who said that the purpose of education is to enhance the experience for students through learning from within, so that it will change their perspective.

Therefore, the mindset of integrated quality management is integrated with soft skills, is an important key to producing more workers and young entrepreneurs in the future (Crawford et al., 2020). Study by Younis et al., (2021) shows that total quality management integrated soft skills has a strategic role in increasing community economic growth, empowering youth Rebele & St. Pierre, (2019) as well as the role of total quality management integrated soft skills can enhance regional development (Heckman & Kautz, 2012).

On the other hand, Andreoni et al., (2020) explained that total quality management integrated soft skills has

a stronger relationship with activities in the institutional environment of the working world. Total quality management integrated with soft skills into a complex set of measures that affect all levels of education (including teacher training), all subjects, and all parties involved in education (educational policy makers), education administration, school administration, teachers, students, and neighboring communities (Nng, 2020).

The dimension that needs to be developed is the dimension in developing students as a whole related to the weakness of SMK graduates. The weakness of this SMK graduate will shape the culture of SMK graduates who always want to be workers and not want to be someone who employs workers or entrepreneurs. Planning, implementation and evaluation in the development of soft skills in Vocational Schools have not been integrated into all subjects including the intensity of the CBT (Competence Based Training) training program, both in the school environment and in the industrial world and the business world. Marcenaro-Gutierrez et al., (2021) states that competency becomes a sustainable domain that is integrated and operationalized to answer postulated research questions.

Competency-based training programs or CBT have the goal of accompaniment in the maturity of personality aspects (Jagannathan et al., 2019). Vocational training programs or CBT besides being able to improve referenced competencies, can also reach maturity in terms of values, interests and attitudes. According to Berry & Routon, (2020) explained that CBT can increase a person's maturity, and the attributes of maturity include increasing self-confidence, feeling more positive, more enthusiastic, and more disciplined. The solution to the problems of education in SMK requires total quality management model integrated with soft skills based on Competency Based Training, so that it can improve the output quality of education and SMK graduates, reduce the gap in labor needs, and reduce unemployment.

## 2. THEORETICAL REVIEW

### 2.1 Soft Skills Concept

The world of work does not only prioritize high academic abilities (hard skills), but also pays attention to skills in terms of values attached to a person or often known as aspects of soft skills. Fareri et al., (2021) explains the definition of soft skills are non-technical abilities possessed by a person from birth which can lead him to achieve success and can be in the form of talent and can be improved through training and education. Jamaludin et al., (2021) also explained that soft skills cover a broad spectrum of abilities and traits, such as self-awareness, effectiveness, trustworthiness, prudence, adaptability, critical thinking, attitude, initiative, empathy, self-confidence, integrity, self-control, organizational awareness, fun, influence, risk taking, problem solving, leadership, time manager, and others.

The essential elements between leaders and followers include; (a) trust; (b) mutual respect/respect; (c) communication. According to Lyu & Liu, (2021) The area of self-management consists of managing emotions, time, priorities, personal life, energy, thoughts, words, strengths, and knowing how to do things. Several traits in general personality usually determine how a person does a job. According to Chow et al., (2019) explained that soft skills or competence/emotional intelligence are very important in the field of work, especially leadership, physical health, mental health and even in school performance or achievements. Some important aspects of soft skills according to Evans et al., (2014) among others: (a) leadership and work; (b) the impact of soft skills on physical health, (c) the effect of soft skills on psychological health; (d) the impact of soft skills on school performance and achievement.

Wentzell et al., (2020), including: (1) Ability to communicate; (2) Critical thinking and problem solving skills; (3) Teamwork; (4) Lifelong learning and information skills; (5) Entrepreneurial skills; (6) Ethics and professional moral skills; and (7) Leadership ability. Referring to the concept of soft skills according to Wentzell et al., (2020) with various aspects or indicators that are worked on in this study are aspects or indicators of soft skills in the concept of entrepreneurship.

Based on some of the theories put forward above it is concluded that *Soft skills* is a non-technical ability possessed by a person who can bring himself to achieve success and can be in the form of talents such as self-awareness, effectiveness, trustworthiness, prudence, adaptability, critical thinking, attitude, initiative, empathy, self-confidence, integrity which is carried out through training and education.

### 2.2 Total Quality Management

Education management is related to the management of educational resources and activities. The decision-making process is an attempt to achieve the goals of the unit for which they are responsible. Arrighi et al., (2021) defines "TQM is a system of means to economically produce goods or services which satisfy customers' requirements". Harding & McCoubrie, (2009) who quotes from Isikawa, describes: "MMT is the combination of all the functions of the company into a holistic philosophy built on the concepts of quality, teamwork, productivity, and understanding and customer satisfaction." Horng & Lin, (2013) defines: "TQM is a philosophy and methodology which assists institutions to manage change and to set their own agendas for dealing with the plethora of new external pressures". Total quality management is an approach to running a business that tries to

maximize organizational competitiveness through continuous improvement of products, services, workforce, processes and environment (Hornig & Lin, 2013). Another definition states that total quality management is a management system that concerns quality as a business strategy and is oriented towards customer satisfaction by involving all members of the organization (Martinez, 2008).

Based on some of the above theories it is concluded that integrated quality management or also known as total quality management is a set of procedures and processes that seek to respond appropriately to any existing changes as a customer satisfaction-oriented business strategy by involving customers and all members of the organization. The steps are: (a) form total quality management of steering committee, (b) form a team, (c) integrated quality management training, (d) prepare a vision statement and principles as a guideline, (e) develop general objectives, (f) communication and publication, (g) identification of strengths and weaknesses. The concepts contained in integrated quality management include quality, customer satisfaction, continuous improvement and the involvement of all components.

### **2.3 Competency Based Training (CBT)**

*Competency Based Training* (CBT) according to Zeller et al., (2016) is a training approach that emphasizes what a person can do as a result of training (training outcome). CBT implementation is based on the fact that there is a competency gap that has been formulated by the company with what is owned by employees. On this basis, the most appropriate strategic choice to be used as a solution is training. Boahin & Hofman, (2014) found that CBT is a formative theory that can be used in vocational learning/vocational training.

Besides that van Vendeloo et al., (2018) explained that to improve one's competency we must look for ways to increase one's maturity. Through CBT, knowledge and technical competence can be achieved, as well as dispositions (values, interests and attitudes) which form the basis of maturity. Evidenced by research which states that the value of the technical skills and entrepreneurial skills of experimental class students increased significantly (Hignett & Crumpton, 2007).

Based on some of the theories put forward above, it can be concluded that competency-based training (CBT) is a strategy for training activities in increasing vocational competence followed by an increase in psychological, knowledge and technical maturity, including more self-confidence, positive thinking, decision-making attitudes, more discipline, increased activity, more independent, more focused on ethics and the environment, more attentive, and able to organize.

### **2.4 Total Quality Management Model Integrated Soft Skills Based on Competency-Based Training**

Total quality management requires studies from various inter- and intra- disciplines. Basically learning activities by integrating soft skill values, in addition to making students master the targeted competencies (material), are also designed and carried out to make students know, realize/care about, and internalize soft skill values and turn them into behaviors. Johnson et al., (2021) in the experimental class it is more effective to improve attitudes, interests, and learning achievement, but in terms of increasing the behavior of the models applied in the control and experimental groups are not different in effectiveness.

In line with research by Crawford et al., (2020) the results of his research show that there is an increase in the quality of managers and learning residents as seen from the learning outcomes after the implementation of life skill-based skills courses based on systematic guidelines. On the other hand, Younis et al., (2021) also suggested that further research could be carried out by developing the measurement tools obtained to obtain graduate competency standards to be carried out further. Furthermore, educational institutions must incorporate hard skills and soft skills in the curriculum if students are confident with a sense of balance and proportion in these skills to be produced (Andreoni et al., 2020). In terms of soft skills is an important prerequisite in shaping a person's personality, it is therefore suggested that educators/teachers should use integrated soft skills training modules while teaching professional training (Nng, 2020).

This step is carried out by integrating soft skill values into learning in all subjects in the school. This integration step can be done when delivering material, through learning methods or through an assessment system. In line with this, the model is applied by Marcenaro-Gutierrez et al., (2021) in the experimental class it is more effective to improve attitudes, interests, and learning achievement, but in terms of increasing the behavior of the models applied in the control and experimental groups are not different in effectiveness.

Based on some of the literature that has been collected that total quality management model integrated soft skills based on Competency Based Training (Competency Based Training) is a set of procedures and processes of training activities that seek to provide an appropriate response to any existing changes as a business strategy oriented to customer satisfaction by involving customers and all members of the organization in achieving non-technical abilities in the form of success and can be in the form of talent. The steps are: (a) form an integrated quality management steering committee, (b) form a team, (c) integrated quality management training, (d) prepare a vision statement and principles as a guideline, (e) develop general objectives, (f) communication and publication, (g) identification of strengths and weaknesses.

## 2.5 Soft Skills Competencies of Students

The existence of soft skills is very much needed for students or vocational students in the future to face the world of work and benefits in the process or a plan in finding a job and success in a career. In real life, the need for soft skills and hard skills in the world of work is inversely proportional, as can be seen in the figure below regarding the development of an education system. The development of soft skills possessed by everyone is not the same so that the level of soft skills possessed by each individual is also different. For example, a touch of soft skills in the aspect of social responsibility will develop conscience wisdom, develop thinking wisdom, develop decision-making wisdom and support the desired spirit of personal success. Jagannath et al., (2019) members of the team for the formulation of the book *Success with Soft Skills*, support the implementation of training for lecturers so they understand more about soft skills. According to him, teachers must be able to be living examples. Starting from arriving on time, correcting assignments, and so on.

Based on several theories above it is concluded that *Soft skills* is a non-technical ability possessed by a person who can bring himself to achieve success and can be in the form of talents such as self-awareness, effectiveness, trustworthiness, prudence, adaptability, critical thinking, attitude, initiative, empathy, self-confidence, integrity which is carried out through training and education. indicators of soft skills, namely emotional intelligence, communication, critical thinking, problem solving, conflict resolution, time management.

## 3. RESEARCH METHOD

### 3.1 Types of Research

Based on the formulation of the problem and the stated research objectives, this research includes developmental research. In this research what was developed was in the form of learning tools and the necessary instruments. According to Wiziack & dos Santos, (2021) Research and development methods are research methods used to produce products and test the effectiveness of these products. The product of this research is total quality management product integrated with valid, practical and effective competence-based soft skills along with all learning tools and research instruments needed for the process of developing the model.

### 3.2 Place and Time of Research

This research was conducted on high school teachers, namely SMKs in Medan City, North Sumatra Province, Indonesia in the 2022/2023 Academic Year. The sample selection was randomly selected in class research to be used as a trial class in the development of learning models. This research will produce an initial design model and product trial of quality management product development integrated softskills based on competency-based training that is valid and effective with the research time in March-June 2022.

### 3.3 Subjects and Research Objects

The subjects in the study were all students of SMK in Medan City, North Sumatra Province, Indonesia, totaling 12 Vocational High Schools (SMK), which have public status. The conclusion of this research subject is that all research subjects have certain characteristics that will provide boundaries and scope of research. The object of this research is a product of total quality management development, integrated with soft skills based on competency-based training that is valid and effective so as to increase student competence. While the object of research is total quality management model in improving the competence of vocational students in Medan City, North Sumatra Province, Indonesia.

### 3.4 Research Procedures

Development Research is to inform the decision-making process during the development of a product to development and the developer's ability to create things of this type in future situations. This study uses the research and development (R&D) method of the ADDIE R&D model (Analysis, Development, Implementation, and Evaluation). According to Romizoswski, ADDIE is a systematic learning design model as an aspect of the system approach procedure that has been realized in many methodological practices for designing and developing texts, materials, learning media (Peterson et al., 2021).

### 3.5 Data Analysis Techniques

Data obtained from experts and practitioners are analyzed to answer whether the learning model in improving student competence in real terms, learning devices and instruments that are being developed have met the criteria of validity in terms of the strength of the theoretical basis and consistency among the components of the student competency model in real terms maximum / good. While the data from the field test results (in the classroom) are used to answer whether the learning model in improving student competence in real terms, the learning tools and research instruments being developed have met the criteria of practicality and effectiveness or not.

## 4. RESULTS AND DISCUSSION

### 4.1 Research Results

#### 4.1.1 Description of Development Results

##### 4.1.1 Expert Validation

Activities carried out at the development stage are validating model validation through expert judgment as a process of model feasibility testing by experts and followed by model feasibility tests by users in a limited and broad group. Expert feasibility tests were carried out to test the suitability of the instrument with the research objectives as well as test the appropriate media. While the feasibility test of the model by the user is to find out whether the material and media are feasible or not feasible, ending with product revisions.

##### a. Material Expert Validation

Material expert validation is a validation stage that aims to determine the feasibility level of the product in terms of the content of the material used. The experts (validators) in this study were 3 (three) lecturers at Medan State University consisting of 2 (two) lecturers from the Education Management Study Program (Prodi) and 1 (one) lecturer from the Technology and Informatics Study Program. The following is the average validation results and input from each validator:

Table 1 Material Expert Validation Results

Number	Validators	Rated aspect			Average
		Suitability	Content Quality and Purpose	Quality Instructional	
1.	Material Expert 1	19	42	36	97
2.	Material Expert 2	18	43	35	96
Average		18,5	42,5	35,5	96,5

Based on Table 1 above, we can obtain data on the feasibility of total quality management model integrated with soft skills based on Competency Based Training in terms of material. Data from material experts is obtained through a questionnaire made by researcher and has been filled in by Training Management experts. The questionnaire contains 21 questions using a Likert scale with the highest score is 5 (five) and the lowest is 1 (one). The questionnaire consists of 3 (three) aspects with composition: 4 (four) items of suitability, 9 (nine) items of quality of content and objectives, and 8 (eight) aspects of instructional quality.

Based on the results of the material expert's assessment, a total score of 97 was obtained, while the expected score was 96. After knowing the eligibility percentage score (91,9%), then the next step is to convert the eligibility percentage score value with the feasibility category interpretation criteria table. The average score of the material expert's assessment can be seen in table 2.

Table 2. Validation Average of Material Expert Assessment

Number	Aspect	Average	Category
1.	Suitability	92,5 %	Very Feasible
2.	Content Quality and Purpose	94,4 %	Very Feasible
3.	Instructional Quality	88,8 %	Very Feasible
Total		91,9 %	Very Feasible

Based on Table 2, the suitability aspect obtained an average score of 18,8 with a percentage of 92,5% in the very feasible category, the aspects of content quality and objectives obtained an average score of 42,5 with a percentage of 94,4% in the very feasible category, and the instructional quality aspect obtained an average score of 35,5 with a percentage of 88,8% very feasible category. The total of average score of Competency Based Training material according to material experts is 96,5 with a percentage of 91,9% in the very feasible category. Thus, from the results of the material expert validation, it can be concluded that in terms of material feasibility, the total quality management model integrated soft skills based on Competency Based Training, is very feasible to use.

##### b. Media Expert Validation

Media expert validation is a validation stage that aims to determine the feasibility level of the model in terms of the media used. Media expert validation is carried out by Technology and Informatics experts. The following are validation results and input from media experts.

Table 3 Results of Media Expert Validation

Number	Validators	Rated Aspect				Total
		<i>Correctness</i>	<i>Reliability</i>	<i>Integrity</i>	<i>Usability</i>	
1.	Media Expert	23	32	20	20	91
TOTAL		23	32	20	20	91

Based on the output of Table 3, it is obtained the feasibility data of total quality management media, integrated soft skills based on Competency Based Training. Media expert data was obtained from a questionnaire made by researchers which had been filled out by media experts. The questionnaire contains 20 (twenty)

questions using a Likert scale with the highest score is 5 (five) and the lowest is 1 (one). The questionnaire consists of 4 (four) aspects with a composition of 5 (five) correctness aspects, 7 (nine) items of reliability, 4 (two) items of integrity, and 4 (two) items of usability.

Based on the results of the media expert's assessment, a total score of 88 was obtained, while the expected score was 90. The eligibility of the media was tested according to the eligibility criteria guidelines. Once the feasibility percentage value is known (97,8%), the eligibility percentage value is converted based on the feasibility category interpretation table (Riduwan and Akdon, 2013:18). The percentage of eligibility media can be seen in table 4.

Table 4. Validation Average of Media Expert Assessment

Number	Aspect	Average	Category
1.	<i>Correctness</i>	92 %	Very Feasible
2.	<i>Reliability</i>	91,4%	Very Feasible
3.	<i>Integrity</i>	100 %	Very Feasible
4.	<i>Usability</i>	100 %	Very Feasible
Total		95,9 %	Very Feasible

Based on Table 4, the correctness aspect gets an average score of 22 with a percentage of 92% in the very feasible category, the reliability aspect gets an average score of 32 with a percentage of 91,4% in the very feasible category, the integrity aspect gets an average score of 20 with a percentage of 100% very feasible category, and the usability aspect gets an average score of 20 with a percentage of 100% very feasible category. The average total score of the integrated quality management model based on Competency Based Training according to media experts is 88 with a percentage of 95,9% in the very feasible category. Thus, from the results of media expert validation, it can be concluded that the media model of total quality management, integrated soft skills based on Competency Based Training is very feasible to use.

#### 4.1.2 Effectiveness Test

Furthermore, Product Trials by Users or Wide Trials which are the implementation of total quality management model integrated with soft skills based on Competency Based Training which has been revised by obtaining suggestions or input from model users. Extensive trials were carried out in order to determine the feasibility of total quality management model integrated with soft skills based on Competency Based Training broadly and empirically.

The trial was conducted at SMK in Medan City, North Sumatra Province, with 36 subjects for each tests. Training in this class is carried out according to the training plan provided. In this trial using the total quality management tool integrated soft skills with CBT-based that has been provided. So that the data from the trial results are analyzed to determine how much the effectiveness of the training device is based on empirical data.

##### a. Data Analysis Results of Student Interest

The analysis results of student interest during the trial. Student interest questionnaires can be seen from the questionnaires given to students. In the aspect of active student interest, when viewed from the active response of students, there are no categories for student responses that are not yet at the tolerance limit interval. For the next trial the positive interest of students who have not fulfilled it will be attempted so that it meets the specified tolerance limit.

Alternatives for the next improvement of action are suggested to students to focus more attention on the given problem to make it easier to understand and also emphasize that problem solving must follow the steps of the student's ability as explained at the beginning of each meeting. Researcher will also provide more motivation and encouragement so that student group discussion activities are more effective and directed. Furthermore, for student activities that "present work" under the allotted time, the researcher provides more frequent opportunities to groups of students who respond so that by frequently giving questions the presentation activity will take longer in training. From the student interest data it can be seen as a whole in Table 5 following.

Table 5. Student Interest Questionnaire in Trial

Number	Observation Category	YES	NO
1	Do you feel happy or unhappy about the learning component? the following?	32	4
2	Are the following learning components new or not new to you?	31	5
3	Are you interested or not participating in the next learning activity, like the one you just attended?	32	4
4	Can you clearly understand the language used in the module?	31	5
5	Are you interested in the appearance (writing, illustrations, pictures, and the location of the pictures) contained in the module?	32	4
6	Do you think training with total quality management model integrated CBT-based soft skills applied is interesting to you?	33	3

The level of student interest for the observation category in accordance with the criteria specified in the study where student interest has met the specified tolerance limit, so that if reviewed and in terms of student active response, not all categories are at the specified tolerance limit, then this research is concluded to have met the criteria set. Overall the average value of student responses is already at the limit of training success, namely with an average score of 88.42%, student responses achieved when  $SR > 80\%$ , so that it can be concluded that the level of student interest is included in the good category.

### b. Data Analysis Results of Soft Skills Behavior

The ability to improve student competence after training can be seen from the results of student work in completing the questionnaire given. The ability to improve this competency is in the form of student acquisition scores from a given questionnaire. The results of the student questionnaire in the trial were very good, judging from the scores obtained. Of the 36 students, only 5 students had not achieved completeness. From the questionnaire given, students generally did not make any more mistakes in solving the questions.

From the score data based on individual completeness criteria, it can be determined which students have completed individually. The full results can be seen in Table 6 below.

Table 6. Soft Skills Behavior of Students in Trials

Number	Average Score	Criteria	Total	Percentage (%)
1	$70.00\% \leq KB \leq 100.00\%$	Complete	31	86,11
2	$0\% \leq KB < 69.99\%$	No	5	13,89

Based on the data in Table 6 above, classical completeness has reached 86,11%. So that the ability to improve classical competence has been completed. The conclusions from the results of the trial data analysis are as follows: (1) there is an increase in the ability to improve student competence; (2) understanding ability using total quality management model training tools integrated with CBT-based soft skills.

Based on the conclusions above, the indicators determined have been effective and have met the set criteria, therefore there is no need to review the training tools developed. The conclusions from the results of the trial data analysis are as follows: (1) the student character at each stage meets the good criteria, and when viewed from the overall average, the student character level is in the good category; (2) students' interest in training activities is already in the specified category; (3) There is an increase in the ability to improve the competence of successful students. If the conclusions from the results of the data analysis in this trial refer to the established criteria, it can be concluded that the application of the developed training device product meets the criteria for effectiveness.

Furthermore, to ascertain whether the total quality management model integrated CBT-based soft skills has a significant effect, inferential statistical tests are carried out by testing normality, homogeneity, and differences in the ability to increase competency tests between students who are taught using the total quality management model integrated CBT-based soft skills and the conventional training model, namely the t test. For this reason, a description of the data, a normality test with the Liliefors test and t test were carried out.

### c. Data Normality Testing

To test the normality of the data for the behavior of the soft skills taught by training models of Toba Batak culture-based manners and those taught with conventional teaching are carried out using SPSS Version 25. To find out differences in student learning outcomes between students taught using total quality management model integrated with CBT-based soft skills and conventional training models, a t-test was carried out as shown in Table 7 below.

Table 7 Independent Samples Test

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Score	Equal variances assumed	2.033	0.158	7.322	70	0.000	9.028	1.233	6.569	11.487	
	Equal variances not assumed			7.322	65.369	0.000	9.028	1.233	6.566	11.490	

The results of the analysis above can also be seen from the calculation of the t value for the training factor



of 7,322, so it can be concluded that  $t_{count} = 7,322 > t_{table} = 2.042$ , with a significance level of 0.000. This value is much smaller than the significance level of 0.05, so it is concluded that  $H_0$  which states the soft skills behavior of students who are taught with total quality management model integrated with CBT-based soft skills is lower than the learning outcomes of students who are taught with conventional training models are **rejected**. In other words, it can be stated that the learning outcomes of students who are taught with total quality management model integrated with CBT-based soft skills are higher than the behavior of soft skills of students who are taught with conventional training models.

## 4.2 Research Discussion

The total quality management model integrated soft skills based on Competency Based Training, is designed to increase students' values, interest, and motivation in learning material to improve competency. The total quality management model integrated with soft skills based on Competency Based Training has been applied to SMK students in Medan City, North Sumatra Province. Based on the results of the trial data analysis, the total quality management model integrated with soft skills based on Competency Based Training has been designed to be categorized as valid, practical and effective.

Before the total quality management model integrated soft skills based on Competency Based Training is given to students for training, the total quality management model integrated soft skills based on Competency Based Training must first be valid, practical, and effective. The validity, practicality, and effectiveness of the total quality management model integrated with soft skills based on Competency Based Training that has been designed will be discussed below.

### 4.2.1 Total quality management model validation integrated with soft skills based on Competency Based Training

Based on data analysis from the expert validity sheet, the total quality management model integrated soft skills based on Competency Based Training by lecturers and teachers, the total quality management model integrated soft skills based on Competency Based Training is declared to be very valid. The validity value of the total quality management model integrated soft skills based on Competence Based Training lessons Soft skills material developed the average score of each aspect of the assessment of the Assessment and Response for Linguists validators provide a value greater than or equal to ( $\geq 3,0$ ) with the category "valid", and the overall average score of the assessment and response for Linguists is in the category above four with the category "**valid**". So it can be concluded that Assessment and Response for Linguists can be used with minor revisions. This shows that the total quality management model integrated with soft skills based on Competency Based Training has been able to tested.

Material expert validation found that the suitability aspect obtained an average of 18,8 with a percentage of 92,5% in the very feasible category, aspects of content quality and objectives obtained an average score of 42,5 with a percentage of 94,4% in the very feasible category, and aspects of instructional quality obtained an average score of 35,5 with a percentage of 88,8% very feasible category. The average of total score of Competency Based Training material according to material experts is 96,5 with a percentage of 91,9% in the very feasible category. Thus, from the results of the material expert validation, it can be concluded that in terms of material feasibility, the total quality management model, integrated soft skills based on Competency Based Training is very feasible to use.

Furthermore, based on the validation of media experts, it is known that an average score of the correctness aspect obtained is 22 with a percentage of 92% in the very feasible category, the average score of reliability aspect obtained is 32 with a percentage of 91.4% in the very feasible category, the integrity aspect obtained an average score of 20 with a percentage 100% very feasible category, and the usability aspect gets an average score of 20 with a percentage of 100% in the very feasible category. The total score average of the total quality management model based on Competency Based Training according to media experts is 88 with a percentage of 95.9% in the very feasible category. Thus, from the results of media expert validation, it can be concluded that the media model of total quality management, integrated soft skills based on Competency Based Training is very feasible to use.

Based on the discussion of the aspects above, it can be concluded that the total quality management model integrated soft skills based on Competency Based Training on the material to improve competence for SMK students in Medan City, North Sumatra Province which is designed to be classified as very valid. That way the total quality management model integrated soft skills based on Competency Based Training can already be tested on students to see the practicality and effectiveness of the total quality management model integrated soft skills based on Competency Based Training that has been designed.

### 4.2.2 Effectiveness of total quality management model integrated with soft skills based on Competency Based Training

#### a. Data Analysis Results of Student Interest

The results of the analysis of student interest during the trial. Student interest questionnaires can be seen from the

questionnaires given to students. In the aspect of active student interest, when viewed from the active response of students, there are no categories for student responses that are not yet at the tolerance limit interval. For the next trial the positive interest of students who have not fulfilled it will be attempted so that it meets the specified tolerance limit.

The level of student interest for the observation category in accordance with the criteria specified in the study where student interest has met the specified tolerance limit, so that if reviewed and in terms of student active response, not all categories are at the specified tolerance limit, then this research is concluded to have met the criteria set. Overall the average value of student responses is already at the limit of training success, namely with an average score of 88,42%, student responses achieved when  $SR > 80\%$ , so it can be concluded that the level of student interest is included in the good category.

#### **b. Data Analysis Results of Soft Skills Behavior**

The ability to improve student competence after training can be seen from the results of student work in completing the questionnaire given. The ability to improve this competency is in the form of student acquisition scores from a given questionnaire. The results of the student questionnaire in the trial were very good, judging from the scores obtained. Of the 36 students, only 5 students had not achieved completeness. From the questionnaire given, students generally did not make any more mistakes in solving the questions. Classical completeness has reached 86,11%. So that the ability to improve classical competence has been completed. The conclusions from the results of the trial data analysis are as follows: (1) there is an increase in the ability to improve student competence; (2) understanding ability using total quality management model training tools integrated with CBT-based soft skills.

Furthermore, to ascertain whether the total quality management model integrated with CBT-based soft skills has a significant effect, inferential statistical tests are carried out by testing normality, homogeneity, and difference tests. For this reason, a description of the data, a normality test with the Liliefors test and t test were carried out. The results of the analysis above can also be seen from the calculation of the t value for the training factor of 7,322. It can be concluded that  $t_{count} = 7,322 >$  with  $t_{table} = 2,042$ , with a significance level of 0,000. This value is much smaller than the significance level of 0.05, so it was concluded that  $H_0$  which stated that the soft skills behavior of students who were taught with the total quality management model integrated with CBT-based soft skills was lower than the student learning outcomes of students who were taught with conventional training models were rejected. In other words, it can be stated that the learning outcomes of students who are taught with the total quality management model integrated with CBT-based soft skills are higher than the behavior of soft skills of students who are taught with conventional training models.

With regard to management effectiveness, the education and training program is said to be effective when the results of training and education are in accordance with its objectives (Julifan, 2015). The effectiveness of education and training management consists of several management dimensions and aspects of competency-based education and training as follows: 1) planning includes analysis of training needs, preparation of curriculum, preparation of training materials, selection of participants, appointment of teachers, and management of facilities and infrastructure. 2) implementation of education and training, which is the implementation of the planning model that has been prepared previously, including the preparation of training and implementation of training (teaching and learning process). 3) training evaluation includes training participant evaluation, teacher/facilitator evaluation, implementation evaluation, and post-training evaluation.

Molla et al. (2021) in their research on the application of the total quality management model integrated with CBT-based soft skills on learning outcomes found that the web-based e-learning model has an effect on student learning outcomes in terms of student learning motivation, as well as providing the implications for teachers in implementing the total quality management model integrated with CBT-based soft skills pay attention to student learning motivation. The results showed that the level of effectiveness of web-based e-learning media on the success rate of students participating in e-learning in the experimental class was higher than in the control class using conventional learning media.

The development of total quality management model integrated with CBT-based soft skills is very appropriate because it involves interactive multimedia that can help teachers present subject matter in an interesting, not boring, and facilitate delivery of material (Ning & Gao, 2021).

This finding is reinforced by Tamayo-Orbegozo et al. (2017), Mohamed et al., (2020) which in similar research found that the use of the total quality management model integrated with CBT-based soft skills is stated to be effective in the distance learning process, this is because at the stages of the teacher learning process starting from the planning, implementation and evaluation stages are carried out in accordance with existing regulations.

The findings of this study are inversely proportional to the stated training theory by Feng et al. (2019), namely the inductive model. Stated The advantage of this inductive model is that direct and precise information can be obtained regarding the types of needs of the trainees, making it easier for tutors (trainers) to choose training (learning) materials that suit those needs.

## 5. CONCLUSION

Based on the results of the analysis and discussion in this study, several conclusions were put forward as follows:

1. In the validation of material experts, it is known that the score total average score of Competency Based Training material according to material experts is 96,5 with a percentage of 91,9% in the very feasible category. Thus, from the results of the material expert validation, it can be concluded that in terms of material feasibility, the total quality management model integrated with soft skills based on Competency Based Training, is very feasible to use. Furthermore, based on the validation of media experts, it is known that the score total average of the total quality management model integrated with soft skills based on Competency Based Training according to media experts is 88 with a percentage of 95,9% in the very feasible category. Thus, from the results of media expert validation, it can be concluded that the media model of the total quality management integrated with soft skills based on Competency Based Training is very feasible to use.
2. The total quality management model integrated with CBT-based soft skills has a significant influence, so an inferential statistical test is carried out by testing normality, homogeneity, and testing differences in ability to increase competence between students who are taught using the total quality management model integrated with CBT-based soft skills and the conventional training model, namely the t test. For this reason, a description of the data, a normality test with the Liliefors test and t test were carried out. The results of the analysis above can also be seen from the results of calculating the t value for the training factor of 7,322, so it can be concluded that  $t_{count} = 7,322 > t_{table} = 2,042$ , with a significance level of 0,000. This value is much smaller than the significance level of 0,05, so it is concluded that  $H_0$  which states the soft skills behavior of students who are taught with the total quality management model integrated with CBT-based soft skills is lower than the learning outcomes of students who are taught with conventional training models are rejected. In other words, it can be stated that the learning outcomes of students who are taught with the total quality management model integrated with CBT-based soft skills are higher than the behavior of soft skills of students who are taught with conventional training models.

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