Development of Educational Quality Management Model Based on Industrial Technology 4.0 at Vocational High School

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Abstract. This research addresses the problem of inequality in the quality of education among graduates of Intermediate Vocational Schools (SMK) compared to the skill requirements of the industry (DUDI). The study aims to develop a management model for quality education based on Industry 4.0 in SMKs. The model focuses on planning, improving, guaranteeing, and controlling the quality of education to align with the demands of the industrial revolution 4.0. Data was collected through qualitative methods including observation, in-depth interviews, and document analysis. The findings indicate that although many SMKs already implement quality management systems such as ISO 9001:2008, the advent of Industry 4.0 necessitates a shift in the quality education model to meet the new skill requirements. The proposed model emphasizes collaboration between SMKs, industry professionals, and academic institutions to ensure that graduates possess the necessary competencies for the industrial era. The study highlights the importance of considering Industry 4.0 technologies as a benchmark for quality education in each stage of planning, improving, guaranteeing, and controlling the quality of education in SMKs.

Keywords: Quality Management in Education, Quality Planning, Quality Improvement, Quality Assurance, Quality Control.

1   Introduction

One problem encountered in education vocation, in particular, level School Intermediate Vocational Schools (SMK) in Indonesia, currently this is still happening gap Among quality graduates with competence and qualifications power work needed by the world of business and industry (DUDI) as user graduates. This is proven by released data Central Bureau of Statistics (BPS) about the reported total level of unemployment (TPT) as of February 2022, as many as 8.40 million people. From the amount, In this case,

SMK graduates are the largest compared to a graduate of level education other. In more detail, the Head of BPS, Margo Yuwono, mentions total unemployment the most originates from registered high school graduates reaching figure 10.38% [1].

One reason for happening gap above is the problem discrepancy between SMK curricula not yet capable of fulfilling the needs of the world of work and industry[2]. Whereas the government, through Inpres Number 9 of 2016, has been instructing to Minister of Education and Culture moment it to make a map road SMK development and perfect or align the SMK curriculum with competence corresponding with the needs of user graduates (link and match) [3]. The basis that the Ministry of Education and Culture has Secrete policy about the revitalization of School Intermediate Vocational (SMK) as an effort to marry education with industry. Its implementation at the level of unit education, not only through the development of customized curriculum _ with DUDI demands but also make improvement in management source power through development management quality his education.

Management quality education, according to Endang Herawan et al. (2014), is aimed at the following : (1) to maintain and improve quality in a manner sustainable (sustainable) run a manner systemic to fulfill the needs of stakeholders, (2) obtain input order concept management this could be implemented with easy and convenient with condition Indonesian environment that has diverse cultural, social economy society and complexity geographic, and (3) fundraising awareness that enhancement quality education is not quite enough to answer all component society, with focus enhancement sustainable quality in the institution education [4]. For each purpose, the so implementation management quality education becomes the agenda and works real deep framework to increase quality education in SMK. Remember the complexity of existing problems, then total quality management (TQM) becomes a lot of models used in SMK.

Management Quality Integrated or normal, this is called TQM according to Ciptono and Anastasia, something approach in operation trying effort to maximize competitive power organization through repair Keep going continuously on products, services, people, processes, and the environment. Because of that, TQM has a number of characteristics : (1) focus on customers, good internal customers as well external, (2) a high obsession with quality, (3) using approach scientific in making decisions and solutions to problems, (4) have commitment period long, (5) requires cooperation team (teamwork), (6) improve the process continuously sustainable, (7) organizing education and training, provide controlled freedom, (8) have unity purpose, and (9) existence involvement in employee empowerment [5].

More carry on explaining the principles and element tree in TQM, as follows: First, satisfied customer. Quality does not only mean suitability with certain specifications; however, a quality that is determined by the customer (internal as well as external). Second, respect for everyone. Every employee is looked at as an individual who has talent and creativity, their own unique. Third, management is based on facts. Organization fact-oriented. It means that every decision organization must be based on data, not on feelings (feelings). Fourth, repair continuously. Repairing continuously is an important thing for every institution. The applicable concept here is a cycle Plan, Do, Check, Act (PDCA).

Remember the complexity aforesaid, then basically, implementation of TQM in education SMK level is not a light task. In practice, there is a number step urgent for implementing TQM in education, that is as follows: (1) leadership and commitment to quality must come from one (top leaders), (2) a fun customer; this is achieved with work hard in a manner continuous for fulfill needs and expectations customer, (3) pointing facilitator quality waiver to position actual from someone in the hierarchy, (4) form group qualified director, (5) lifting qualified coordinators, (6) conduct senior management seminars for evaluate development, (7) analyze and diagnose situation latest, (8) using models elsewhere that have to develop this could be adapted from profession from a quality "teacher," (9) posits consultant external, (10) start training staff about quality development staff, (11) apply equipment and technique quality, and (12) evaluate the program. All that is must procedure taken in a manner carefully so that the implementation of TQM takes place in a manner effective with good results. Meanwhile, the world of education in SMK, when this middle face a new problem that is happening revolution of Industry 4.0, which causes change significant sector industry in the world affected by the rise in development technology, information, and communication. According to experts, at least there eight technology is the main pillar in develop revolution this industry 4.0, namely : (1) Internet of things (IoT), namely something draft or which program an object's own ability to transmit or send data through a network without using help device computers and humans. (2) Artificial Intelligence (AI) is a technology computer that has intelligence artificial like a human. The main function of AI is the ability to study the data received continuously. The more data received and analyzed, the better anyway AI inside make a prediction. (3) big data, very large, complex, and continuous data sets increase every time, (4) argument Reality (AR) is combining technology virtual objects two dimensions or three dimensions to in an environment real three dimensions. Then, project these virtual objects in real-time. (5) Cyber security is an effort to protect information from cyber attacks. This can form SSL Certificate, Bit Ninja, and Farewell features for hosting protect user data. (6) Additive manufacturing, namely, is breakthrough new to the industry of frequent manufacturing. We know using a 3D printer. In the current digital age, this digital image design that has been made could embody Becomes Thing real with the same size and shape as the design. (7) integrated system is connecting a network of a number of systems in a manner physical or functional. System this will combine various sub-systems to ensure everything is corresponding useful function. (8) cloud computing is a technology that makes the internet a center of data and application management, where the user computer is given the right access (login) access the virtual server to can server configuration via the internet. All technology each other interacts and synergize with the so-called current digital technology that has already penetrated DUDI.

As described above, the condition up-to-date that happened to DUDI has forced education to reorientate management quality. With exists a need for new competence power. However, the work required by DUDI has triggered and spurred SMK to do adoption and adapt to manage the quality of his education To use produce graduates who have competence and qualifications corresponding to the needs of the DUDI. In relation to Thing, the presumably a need to conduct a study about management quality

education based on industry 4.0 in SMK. The purpose of the study is to find a management model quality education-based industrial technology 4.0 at SMK. the research focuses on management model development quality education-based industrial technology 4.0 at SMK in Karawang Regency. The formula problem is what is the management model quality education based on industry 4.0 at SMK?, which is stated in the question study namely : (1) how planning quality education based on industry 4.0 in SMK?, (2) how enhancement quality education based industrial technology 4.0 at SMK?, (3) how guarantee quality education based industrial technology 4.0 in SMK, and (4) how control quality education based on industry 4.0 in SMK?

2   Methods

Study this using a qualitative approach, i.e., describe implementation management model development quality education based on industry 4.0 in SMK. This research at SMK in Karawang Regency, Province West Java, both domestic and private. Deep data collection study this conducted through observation that is observed in a manner deep various phenomena or events and doing an interview as well as studies documentation about management associated quality with industry 4.0. Besides that, interviews were also conducted deep with related stakeholders as respondents for digging various information to complete the required data [6].

3   Result and Discussion

Based on the results of observation, interview, and study documentation at the location study, so could depict that the majority of SMK already operate management quality education with apply a certain model as ISO 9001:2008. However, in a manner, general channel activities are conducted through stages of planning quality, guaranteeing quality, controlling quality, and improving quality [7].

3.1   Planning Quality

At stage planning, this leadership head school is very important in determining. In Thing, this head school holds the role as formulator or maker of policy very strategic direction institution education to be not quite enough he replied[8]. Meanwhile, at the operational level, assisted by deputy heads of school along with the heads major with involving educators and staff education along whole stakeholders interest either internal or external, especially the world of business and industry as element user graduates. Engagement elements of the business world and the industrial world in planning quality in SMK, especially in the observed Vocational High Schools, initiated with making agreement work same good field academic even non-academic. Work same meant embodied in directed programs and activities for improvement of the learning process and improve quality graduates. The program, among others: (a) increase the competence of teacher through OJT (on-the-job training) activities, namely the intended apprenticeship program field teachers productive, for apprenticeship party school cooperates with

various ongoing company in period time certain ; (b) apprenticeship program for candidate graduates, that is addressed to whole student level Finally, for those interested for do apprenticeship worked in DU/DI for wait for appraisal process results in exam national ; (c) Training programs by DU/DI for para students ; (d) Improvement program quality and quantity means ; (d) Inventory and selection institution or DU/DI which will make the place practice work industry. (PRAKERIN) Place institution real prakerin can give appropriate experience with competencies that have set in book journal prakerin ; (e) practitioners teach that is activated as a guest teacher from association profession. For example, for major accountants from AAI (Association of Indonesian Accountants), Administration Office from ISI (Bond Secretary of Indonesia), and the Association Journey Indonesian Tourism ; (f) Development Journal Deep practice implementation get Input from DU/DI, mainly Input in determination competence student who will develop During Prakerin. The principle of street vendors is for the student to study from the field, not to apply theory learned in school in the field.

Going on for three months ; (g) Before students do prakerin, students prepare especially first, through the Beauty program class. Activity this going on for three days. The material provided related to an attitude or Act in demand in work, appearance, which includes procedures, makeup, getting dressed, and communication; (h) Development matrix competency. In the matrix, the identified which competence _ developed in schools and in DU/DI; (i) Job Matching Program or Expo Job; and (j) Work same with DU/DI inside set criteria candidate student

Enhancement quality (quality improvement**)** implementation enhancement quality in SMK is basically directed to two aspects as a target or the object that is field academic and managerial. Both of them, of course, each other related so that no one can separate one same other. Enhancement of quality academic focus on process and results learning that leads to quality graduates[9]. Kindly technical academic enhancement quality SMK graduates are directed to reinforcement competence field his expertise appropriate with required qualifications for work, continue education or entrepreneurship, Besides that related with enhancement quality in aspects management, programs and activities geared towards improvement administration service education and building culture quality unit education. Enhancement service education embodied in shape more administration and governance, faster, easier, more humanist To use reach satisfaction customers served good internal or external customers. Whereas in framework build culture work unit education make regulation about habituation quality and organizing various programs and activities in framework development capacity (capacity building) To use form pattern think (mindset) and behavior (attitude) quality [10].

For acceleration and reinforcement enhancement quality, managerial a number of unit education has implemented a management system referring quality on ISO 9001:2008, which is relevant to management system requirements quality. The procedure use of the system in question could be depicted through two Things, i.e., on-stage setup document and implementation. At stage setup document quality steps taken are as follows: (1) identification of the service process/business/education; (2) determination of quality policy ; (3) determination of target quality and plan management quality ; (4) identification of needs document quality; (5) manufacture document guidelines and procedures quality; and (6) making document instructions work. Meanwhile, at

stage implementation carried out steps as follows; (1) Socialization document that used ; (2) Application quality system documents ; (3) Monitoring implementation of ISO 9001; (4) Do review management ; (5) Gather notes; and (6) Create report performance implementation of ISO 9001

3.2   Control Quality

Implementation control quality general high school education conducted through supervision good internally by the head school and staff or externally by supervisors school [11]. Head schools involve a deputy head school field curriculum in a manner routine carries out supervision or supervision to the whole component source existing power at school, which aims to ensure order implementation curriculum and programs learning in SMK can walk corresponding with plans and goals that have been set. At the same time, the supervisor school carries out supervision, monitoring, and evaluation corresponding to the need. Based on the results interview with the head school along with the deputy head school, that activity supervision is carried out in shape charging monitoring sheet or journal class activities, as well as head school or representative routine monitor appearance teaching teacher via monitor CCTV (for school already be equipped with a tool such), or every morning around to every class for monitor situation class. Next, the head or deputy head school collects and checks the administration class. Temporarily this activity visits class, yet in a manner thoroughly done, because worried could bother moderate teacher concentration teach and moderate students' learning. Supervision techniques carried out by the head school and vice principal school use an informal approach, i.e., with method ask in a manner live to students about the teacher's appearance when teaching. Head schools think that information submitted by a student is very important because students, as internal customers, are party first to feel in a manner live on quality services provided by the teacher as implementing learning programs at school. Monitoring results said by the head school followed up in a manner routine, by the way, stage meeting or meeting with all teachers in the framework do construction, as well convey correct informally against appearance teaching teacher in class, teacher administration which includes drafting Syllabus and lesson plans.

Besides that's it, the chief school reminds and motivates the teacher to always carry out duties and functions with full of responsibility answer. Activity supervision and monitoring are not just for implementation education at school courses but also for the activity practice work industry. Activity the done by the teacher that is assigned as a mentor. The implementation activities are done at least as much three times or customized with the need field. Implementation of monitoring carried out by the teacher, done by bringing a monitoring sheet. When every activity is monitored, the teacher must dig and get information about the activity done by students, abilities in carrying out Duty work, behavior, and the problems encountered during practice work in the industry[12]. Besides that, the teacher must be pied for get Input from the business/industry world, whether

It concerns capability and performance students, as well as the apprenticeship program compiled school. Advice from the world business/industry made as feedback for party school for repair or improvement curriculum, formulation competence nor for

improvement internship program management that alone. With this party, schools make an effort to repair or improve continuously. The effort to repair this made by the head school through meeting with teachers, or stage meetings with the world of business/industry, also provides a chance for each skill program to repair corresponding with Input submitted by the business world/industry.

3.3   Guarantee Quality

Assurance quality education in SMK is carried out through 2 systematic approaches, viz System Guarantee Internal Quality (SPMI) and System Guarantee Quality External (SPME). SPMI implementation involves whole stakeholders' interests in the unit's internal environment (internal stakeholders)[13]. Related education as head school, vice principal schools, teachers, staff education, participants teach, committee school and parents participant educate, as well commanded society directly by the head school. At the same time, SPME is done periodically by a team of assessors formed by the Accreditation Board Solah / National Madrasah (BAN S/M) level province. The result of both (SPMI and SPME) are normally analyzed and studied for made as ingredients taking decision party school and distributed in a manner open to the stakeholder's interests.

Guarantee quality environmental education SMK, addressed for maintain and increase quality results his education in a manner sustainable, run by something institution education internally for realize vision and mission, as well for fulfill need *stakeholders* through maintenance outlook with mandalas. Achievement purpose guarantees quality through activity guarantee quality which is executed internally by the school, will control and be audited through activity accreditation carried out by BAN- PT or other external institutions. With this, objectivity evaluation to maintain and upgrade quality education school medium vocationally sustainable could be embodied. Held through various models of management control quality. One applied management model used is the PDCA model (Plan, Do, Check, Action), which will produce sustainable development (continuous improvement) or quality kaizen education school medium vocational. hypothetical models' management quality education industry based 4.0 Based on the hypothetical model described above, it can be explained that pattern or hypothetical channel model work development industry-based vocational quality 4.0 simple could be explained as follows. The first step is planning quality, is step beginning with building commitment quality shame drafting plan strategic (renstra), and operational plans (renop). Planning strategies are made for a period of time certain for example, some define four years corresponding with tenure or periodization position head unit education and there are also those who take a period of 5 years or more depending on the deal or policy the institution is concerned.

Procedures taken in drafting a strategic plan usually start with an analysis conditions internal or external environment. Analytical techniques, in general, use the method of Strengths, weaknesses, opportunities, and threats (SWOT). Then formulate various conditions to be embodied in the Century front or picture of the future you want to be achieved. The intended description, in a manner, detail the formula poured into shaping vision, mission, goals, objectives, strategies, programs, and activities. The next step is

to conduct evaluation and revision or review return if looked at necessary. The arrangement made by the head unit team assisted education formed work involving both internal and external stakeholders. Element external involved represents the user graduate as party to absorb power work, profound Thing this usually represented by the association. Whereas planning operational (renop) is a work program annual report which contains programs, activities, targets, goals, time implementation, budget required, and guarantor answer or teamwork as executor. The formulation conducted internally with refers to the plan already strategically agreed.

A quality in drafting a plan includes the IQF and competencies and technology in the industrial era 4.0, both academic and even managerial. Planning academic poured in shapes curriculum and learning programs, including evaluation as described above. While on the aspect managerial conducted in shape work same with DUDI as effort orientation quality graduate of corresponding espoused philosophy During this that education vocational as must party _ responsible answer on prepare people for work, so function in preparing people for work. This is also in line with the stated view that school medium vocational as institution functioning education prepares the student for work or entrepreneur and follow education more continue.

At the level of implementation, planning managerial here directed to giving service education quality, namely those that can fulfill the expectations and needs of customers externally, namely the world of business/industry as well as internally, that is student. Basically, quality service is applied in the implementation school as a system. School as a system, according to Endang Herawan et al. Covers Input, which includes: vision, mission, goals of the school, policy, curriculum or programs learning, facilities study, formula standard competence, and power education professional. Process or strategy learning developed by party school or teacher, which includes the use of learning strategies and evaluation as well as participation in the business world in planning, implementation of PBM and evaluation learning, system supervision and control, which includes determination room scope control, strategy supervision, follow carry on supervision form effort improvements and fixes on the formula competence students, curriculum, implementation of learning processes and systems evaluation learning so that relevant with the world of work needs nor society.

Second, stages enhancement quality is an important phase in management quality education based on industry 4.0. Development culture quality-based technology 4.0 to be the essence of the stage this. Management models quality integrated is sustainable (continuous total quality management). Flagship work same partnership Among unit education with DUDI covering aspects of academic or management is the superior strategy. Work same field with an academic-based spirit that k DU/DI involvement in the educational process, enabling the students to obtain experience learn more concrete, so will Become the provisions really worth it in working, entrepreneurship, or continuing education. Stakeholders/ DUDI is expected could give influence to a quality graduate of because stakeholders are parties to accept graduate of from high school to specified standard stakeholders becomes a consideration in enhancing quality. Managerial cooperation is conducted through optimization role committee school and empowerment institution government and non-government around environment school. Committee

school has given the role urgent as representative Public who follow as well as determine results end from a graduate of SMK is needed by the community. The government also took part in enhancing quality for identify needs that just have n't been fulfilled in application quality schools for get quality that graduate quality, quality education and graduates must be fixed. Repair quality graduates only could happen if preceded repair quality environmental education schools involving stakeholders/DUDI, committees, schools, and government. A quality school is achievement purpose education and competency that the graduate has determined by the inside school plan strategic or has accordingly Among purpose education carried out with standard academics who have determined. This leave from draft guarantee quality, that the school stated quality is the own ability to define and create a vision through mission and capabilities to fulfill stakeholder needs which include need community (society needs), the world of work (industrial needs), and profession (professional needs). Vision, mission, hope and goals from poured-in guidelines quality school, policy quality, target, and control quality. Management, manpower, facilities infrastructure, financing, student affairs, relationships industry as well environment/culture school. Policy in field curriculum related with development of appropriate curriculum needs, arrangement of learning plans/ programs that refer to standard SMK guidelines national, the application of multi-method and internal media learning, encouraging creativity and innovation in the learning process, the development of evaluation systems. Standard competencies set in SMK do not only refer to SKKNI and demand one industry or company, but consider Input from a number of business / industrial world in field skill kind with various characteristics and conditions.

For it, in particular in set standard competence for field productive party school usually inviting various world of business/industry, as well as organizations professions, such as: IAI (Association Indonesian Accounting) ISI (Association Indonesian Secretary) ASITA (Association of Indonesian Tour and Travel Agency), as well element college who has a study program or relevant majors with the expertise program in SMK. With a thorough approach, these possible formula-defined competencies could describe or, in a manner, generally represent various demands mainly from the later business / industrial world and becomes standard competence in graduate school. Policy in field energy, related to effort increasing teacher professionalism, both related to his expertise nor in the mastery of foreign language. Policy quality must be supported by teachers who have reliable ability, commitment, and dedication to high work, with supported by sources reliable humans who expected the effectiveness of the learner program can materialize. Support good facilities and infrastructure, accompanied by orderly governance, possible carry out the educational process in schools.

Guidelines quality is a guide for every school in implementing and achieving the expected quality. Broadly speaking, guidelines quality it includes terms and definitions used school, regulations, laws, standards accreditation, certification programs, and services support, or could say as something system management quality. Policy quality exists as stated quality commitment in a formal statement indicating a determination to always give the best to customers/stakeholder's interests. Policy formulation quality refers to the Vision, Mission of education set by Schools and Goals education in a manner national for every school. School need to make sure policy quality is understood by

all personnel and be a reference in target setting, preparation planning, and evaluation. In effort realizing policies quality head _ school request to all parties, such as : the head of the study program / expertise, deputy head schools, teachers, BP officers, managers of BKK (Special Job Exchanges) for developing programs and goals quality to be achieved. Target achievement quality This will be an indicator of success from established policies.   To reach the target stated quality in guidelines, quality needed control quality by all stakeholder schools. Guidelines quality, policy, objectives, and control quality will set some strategies in increase source power human, increase management, manpower, facilities infrastructure, financing, student affairs, relationships industry as well environment/culture school. Policy in field curriculum.

The third Step guarantees more quality focus on quality audits. Guarantee SMK quality is implemented through two approaches that are System Guarantee SPMI Internal Quality and System Guarantee Quality External (SPME). In SPMI implementation of parties unit education form working for ad hock team under control head school assisted by deputy heads school along chairman majors and guardians class. Main task team conducts quality audits in a manner periodic and ongoing. Implementation of quality audits guided to policy quality issued by the Ministry of Education and Culture. Internal quality audit results usually make ingredients implementation of quality audits external. At the same time, SPME implementation is carried out periodically by the assessor team assigned by the Accreditation Body School / Madrasah BAN S/M level province through activity accreditation school/madrasah, and or by supervisor's builder unit assigned education handling department field government education province through monitoring and evaluation activities or supervision.

Accreditation school as one SPME form is quality audit activities with purpose main for photograph condition real unit education. Quality audit results made ingredients in maker policy by the taker decision. Policy quality exists a commitment to the quality conveyed in a formal statement indicating determination for always give the best to customers/stakeholders' interests. Preparation policy unit quality education, referring to Vision, Mission education set by Schools and Goals education in a manner national for every school. Schools need to ensure policy quality is understood by all personnel and be a reference in target setting, drafting planning, and evaluation. In an effort to realize policy quality head the school request to all parties, such as the head of study program/expertise, deputy head schools, teachers, BP officers, BKK managers (Job Exchange Special) for development programs and goals quality to be achieved. Achievement target quality This will be an indicator of success from the existing policy set.

For each target stated quality in guidelines quality so needed control quality by all stakeholder schools. Guidelines quality, policy, objectives, and control quality will set a number of strategies in increasing quality source power man, increase effectiveness and efficiency use of facilities and infrastructure education.

The fourth step is to control quality based on industry 4.0, which is more focused on achievement standard quality. At stage this at least, there is two Thing main thing to do that is determination standard quality and competency test expertise. Standard quality is usually formulated with guided to standard competence graduates (SKL) issued Ministry education and culture, also refers to SKKNI and oriented to standard competence

and qualifications power work outlined by DUDI. This nothing-but-wrong-moment ef-fort build relevance in order to competent equivalent SMK graduates or fulfill compe-tent work required by DUDI. Standard competencies set in SMK do not only refer to SKKNI and demand one industry or company but consider Input from a number of business / industrial worlds in field skill kind with various characteristics and condi-tions. For it, in particular in set standard competence for field productive party school usually inviting various world of business/industry, as well as organizations profes-sions, such as: IAI (Association Indonesian Accounting) ISI (Association Indonesian Secretary) ASITA (Association of Indonesian Tour and Travel Agency), as well ele-ment college who has a study program or relevant majors with the expertise program in SMK. With a thorough approach, these possible formula-defined competencies could describe or in a manner, generally represent various demands mainly from the later business / industrial world, Becomes standard competence graduate school. Policy in field energy, related to effort increasing teacher professionalism, both related to his expertise nor in mastery of language foreign. Policy quality must be supported by teach-ers who have the reliable ability, commitment, and dedication to high work, with sup-ported by sources power reliable human expected the effectiveness of the learner pro-gram can materialize. Supporting good facilities and infrastructure, accompanied by orderly governance, allows this to happen because, at the time of street vendors, there were a number of students who didn't correspond with the proper field to be the focus of development Skills corresponding with majors that he chose. Besides that, policy quality and implementation strategy in applying guarantee quality new looked at as a slogan or only for fulfill need accreditation course, not yet fully the school concerned refers to policy quality that has set in operate operational education that can increase education quality. While Competency Test Expertise (UKK), since the beginning of the course, was designed with refers to DUDI needs. So that in practice no regardless of practitioner involvement from DODI. one its form is to do agreement work same with association entrepreneurs and organizations workers as shown above.

4   Conclusion

Based on the description above could conclude that the majority of SMK already carry out management quality education with certain models, as exists an implementation of the ISO 9001:2008 system in several unit education. However, in development, trig-gered happening industrial revolution 4.0, then management quality education in gen-eral also refers to the required competencies power work in the industrial era 4.0 as a quality benchmark, so build a management model quality education based industrial technology 4.0 at SMK. Characteristic main from the management model quality makes Industry 4.0 technology a reference quality field academic and managerial in each stage start planning quality, improving quality, guaranteeing quality, and controlling quality. First, planning quality education based on industry 4.0 focuses on the formation of commitment quality in drafting strategic plans and operational plans through the in-volvement of DUDI and academics. Second, increase quality education based on in-

dustry 4.0, which focuses on the development culture quality in SMK is good in developing academic or even managerial through work same partnership with DUDI and the professionals. Third, guarantee quality education based on industry 4.0, which focuses on conducting quality audits through SPMI and SPME. Fourth, control quality education more based on industry 4.0 focuses on the achievement standard quality through the determination standard quality graduates and the implementation of the Competency Test Expertise that involves academics at tertiary institutions and practitioners and professionals from DUDI.

References

1. U. R. Wahyudin, H. Permana, and E. Nurlailasari, "SOSIALISASI MODEL MANAJEMEN PENDIDIKAN BERBASIS KABUPATEN KARAWANG," vol. 5, no. 2, 2021.
2. H. Permana, U. S. Karawang, I. Abdillah, H. Fauzi, A. Hasanah, and B. S. Arifin, "Pengembangan Model Manajemen Pendidikan Karakter di Sekolah," vol. 02, no. 1, pp. 41–55, 2021.
3. M. Maryati, T. K. Suhandi, and H. Permana, "Character Education Program for Student in Islamic Boarding School," *KnE Soc. Sci.*, vol. 2020, pp. 638–647, 2020, doi: 10.18502/kss.v4i14.7921.
4. S. Y. Benharoon, "Building a Culture of Peace in Muslim Community in Southern Thailand through Family Communication," *Procedia - Soc. Behav. Sci.*, vol. 91, pp. 522–531, 2013, doi: 10.1016/j.sbspro.2013.08.450.
5. K. Yousapronpaiboon, "SERVQUAL: Measuring Higher Education Service Quality in Thailand," *Procedia - Soc. Behav. Sci.*, vol. 116, pp. 1088–1095, 2014, doi: 10.1016/j.sbspro.2014.01.350.
6. sugiyono, "metode penelitian pendidikan (kuantitatif kualitatif dan R & D)," *Bandung Alf.*, 2016, doi: 10.1164/rccm.200409-1267OC.
7. S. Greenland, M. Saleem, R. Misra, and J. Mason, "Sustainable management education and an empirical five-pillar model of sustainability," *Int. J. Manag. Educ.*, vol. 20, no. 3, p. 100658, 2022, doi: 10.1016/j.ijme.2022.100658.
8. A. Katilmiş, H. Ekşi, and C. Öztürk, "Efficiency of social studies integrated character education program," *Kuram ve Uygulamada Egit. Bilim.*, vol. 11, no. 2, pp. 854–859, 2011.
9. L. Nurmiyanti and B. Y. Candra, "Kepemimpinan Transformasional Dalam Peningkatan Mutu Pendidikan Anak Usia Dini," *Al-Tanzim J. Manaj. Pendidik. Islam*, vol. 3, no. 2, pp. 13–24, 2019, doi: 10.33650/al-tanzim.v3i2.646.
10. U. Ruslan Wahyudin and H. Permana, "Education Quality Assurance Management in the Faculty of Health Science, Singaperbangsa Karawang University," *KnE Soc. Sci.*, vol. 2020, pp. 505–512, 2020, doi: 10.18502/kss.v4i14.7909.
11. Y. Dwikurnaningsih, "Implementasi Supervisi Akademik di Lembaga Pendidikan Anak Usia Dini," *J. Manaj. dan Supervisi Pendidik.*, vol. 4, no. 3, pp. 182–190, 2020, doi: 10.17977/um025v4i32020p182.

12. Amirudin, "Kepemimpinan kepala Madrasah dalam meningkatkan kedisiplinan guru," *Al-Idarah J. Kependidikan Islam*, vol. 7, no. 2, pp. 23–37, 2017, [Online]. Available: http://ejournal.radenintan.ac.id/index.php/idaroh/article/view/2261.

13. Suyadi, Z. Nuryana, Sutrisno, and Baidi, "Academic reform and sustainability of Islamic higher education in Indonesia," *Int. J. Educ. Dev.*, vol. 89, p. 102534, 2022, doi: 10.1016/j.ijedudev.2021.102534.