

## Research Article

## THE DESIRABLE SCENARIO OF EDUCATIONAL QUALITY ASSURANCE WITH WORLD-CLASS STANDARD IN VOCATIONAL EDUCATION

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### Abstract

This study aimed to 1) estimate the trend of the world-class standard educational quality assurance of schools in vocational education, 2) analyze situations affecting the world-class standard educational quality assurance of schools in the future, and 3) analyze future confirmatory wheel of the world-class standard educational quality assurance of schools. The research procedures were divided into 3 phases. Phase 1 involved the study of 21 key informants' opinions towards the scenario of the world-class standard educational quality assurance of schools using Ethnographic Delphi Futures Research (EDFR). Phase 2 entailed an investigation of the effects on the world-class standard educational quality assurance of schools by creating the future wheel by Structural Equation Modeling Program. Finally, Phase 3 involved drafting the future scenario of the world-class standard educational quality assurance of schools. The research findings revealed that the future scenario of the world-class standard educational quality assurance of schools in vocational education consisted of 4 components: 1) Input, 2) Process, 3) Output, and 4) Environment. It found 16 observed variables, and 182 expected future events covering the quality measurement system of vocational education. According to consistent opinions of the experts, 115 events had probability level at the highest level, 56 events were at a high level, and 1 event was at a moderate level. The experts' opinions were not in the same way for 4 of 6 events about expected future scenarios with Factor Loading at .772-1.109 and the significance level of .001. According to the event generation congruence measurement of the world-class standard educational quality assurance of schools in 2019-2028.

**Keywords:** Scenario, Educational Quality Assurance, Vocational Education

### Introduction

Education is a crucial mechanic which drives people, community and nation to a great development. Education also helps people to stay harmoniously and to keep up with the rapid change of the world. Under the world's economic dynamics, education is one of the vital tools of a nation which builds the nation's strength to compete with other powerful nations. In the present world, education plays a very important role

to develop human resources to reach and understand changes of economy, communities and the world (Office of the Education Council, 2017, p. 23). The objective of education management is preparing potential learners' effective abilities. Education needs to be according to its nation's objective and strategic plans "All Thai people will receive education, have a quality life-time learning, live a happy life regarding self-sufficient economic philosophy and the world dynamics of 21<sup>st</sup> century."

In Thailand, education is seen as a vital drive of the nation as it is stated in National Education Act of B.E. 2542 that the nation needs to provide educational assurance system in order to develop quality and standard of education in every level. This is continuously done by internal quality assurance, as it is part of educational administrative process, and it is required annual reports to an educational office area, or other affiliations, and publics. This will lead to a quality and standard of education development in order to meet with external quality assurance criteria of the office for National Education Standards and Quality Assessment (Public Organization). The office will collaborate developing education system, indicating the frameworks of educational assessment, guaranteeing, controlling and maintaining the standards.

To have desirable characteristics of the learners, the educational settings needs to have quality educational administration, organization development, and quality management by using, for example, the Deming Cycle or Total Quality Management and so on. The main aim of this process is to meet with external and internal quality assessment requirements and educational market trends at the time or, in another word, to reach society needs. An educational setting must emphasize on quality to meet with customers' expectation which in this case is learners and others who are part of educational field (Sallis, 1993, p. 85)

Quality education is resulting in learners' desirable characteristics. This is gained from various processes that is undertaken by those who are involved in education field. The priority is that education settings should emphasize on the learners' abilities. As the result, the learners' abilities reflect on the effectiveness of educational settings' operation. To have quality outcomes which means quality learners and those who are involved with this setting, the process of production needs to be consistently proactive in a pleasant learning environment to produce effective learning and training to all. To carry out such a quality outcome, this also requires a regular improvement which means the learners can complete the curriculum and reach expected characteristics from the community. This is later on develop to Quality Assurance to ensure that learners receive quality education (Hoy & Miskel, 2000, p. 47)

The nation development requires a well-constructed strategy to lead learners to a life-long learning, to understand economic dynamics and to step in ASEAN economic group. As education quality in Thailand is lower than other countries, education reform is needed for this century. The aim of developing and moving the education towards international setting of Office of the Vocational Education Commission means that the educational setting must have a quality process and been accepted as an outstanding outcome. This is very much challenging to manage. However, the researcher needs to also look at the scenario of educational quality assurance in vocational education in comparison to international standards. This can be done by following the criteria of world-class standard and adapting the criteria to develop the highest quality of education management. This is all for practice, outstanding work, controlling and following up outstanding

education management in order to achieve the aim of education reform in this decade. (The office of Quality Award, 2554, p. 53)

Vocational education is an important educational organization to provide a new model of learning in the advent of globalization. It is also an essential indicator to develop the nation because the improvement of the economy, society, politics, dominance, science, and technology relies on the specialized knowledge and skills of the population in the country, especially the workforce groups of semi-skilled, skilled, and technology workers.

The vocational education institution has diverse roles. It is the main organization to provide not only vocational education but also training for the trainers to become a larger group. It is also called 'Vocational Education for All.' Monkolchai (2009, p. 66) stated that the quality of vocation education is essential because the quality means the standard and the satisfaction of the service recipients from the effective outcomes. According to the analyses of the office of the education council (2008, p. 112), it was found that in the development of the workforce in vocational education of the country, there is still a lack of direction and goals for overall production and development. In consequence, the educational management is inconsistent with the needs of personnel and the nation. The trends of a degree graduate among youngsters and people, the image, the attitude, and the value of vocational education are not satisfied. Therefore, the portion of the learners is less and it affects that the middle level of the workforce has decreased dramatically and continuously.

Moreover, the trend of the increasing number of vocational educators has become lower. Thus, private investment as well as the quality and the capacity of the manpower is unable to meet the users and establishment demand as it should be. The educational quality assurance with world-class standard should be adjusted suitably with the actions that focus on student outcomes and competencies. According to the cross border education and transnational mobility, globalization supports the migration of people, culture, thoughts, and knowledge, so technology in the globe is linked and relied on each other. Education can be accepted and comparable internationally.

As above mentioned, the results of educational quality assurance with world-class standard in vocational education indicated that the quality of graduates was low. The capacity of the manpower is unable to meet labor market demand, lack of knowledge and essential skills. Thereby, the quantity and the quality of manpower production dropped. The researcher was interested to study the scenario of educational quality assurance with world-class standard in vocational education by focusing on the situation of the administration, the system of educational quality assurance, and the concept of qualitative research to apply in administrating educational quality assurance in vocational education in order to achieve the objectives in accordance with the mission and quality assurance policy effectively.

## Objective

1. To estimate the trend of the world-class standard educational quality assurance of schools in vocational education.
2. To analyze factors that impact on the scenario of world-class standard in vocational education.
3. To analyze future confirmatory wheel of the world-class standard educational quality assurance of schools.

## Methodology

The study of the desirable scenario of educational quality assurance with world-class standard in vocational education used EDFR technique (Ethnographic Delphi Futures Research). The samples of the study were chosen from the characteristics of the experts from the population and consisted of 9 educators or administrators of the office of the vocational education commission, 6 directors under the office of the vocational education commission, and 6 heads who are responsible for educational quality assurance. The research of the scenario was the results from the perspectives of the experts regarding trends of educational quality assurance with world-class standard in vocational education. The researcher studied the perspectives of the experts regarding trends of educational quality assurance with world-class standard in vocational education. The research was conducted in 3 phases. Phase 1, involved the study of 21 key informants' opinions towards the scenario of the world-class standard educational quality assurance of schools, interviewed with EFR technique by using a structured interview, and analyzed the data in order to design the questionnaire regarding trends of educational quality assurance with world-class standard in vocational education and using Delphi technique through the perspectives of the experts by a questionnaire from the first process to interview the experts, and then the data was analyzed the trends of events by median and interquartile range based on the criteria of Delphi technique. After that, designed the questionnaire regarding trends of educational quality assurance with world-class standard in vocational education and interviewed with Delphi technique through the perspectives of the experts by using a questionnaire from the second process to interview the same group of the experts so that the experts could compare the previous answers with other experts. And added one more column for the detailed reason if the experts agreed with all experts and how. After that, the data was analyzed by median, the difference between mode and median, and interquartile range based on the criteria of Delphi technique to find the agreement among the experts. Phase 2, analysis of futures wheel from the agreement among the experts, trends, concepts, and events of the future educational quality assurance with world-class standard in vocational education were taken to develop futures wheel by using Structural Equation Modeling (SEM) Technique. Phase 3 involved drafting the scenario of educational quality assurance with world-class standard in vocational education, the researcher developed the scenario of educational quality assurance with world-class standard in vocational education based on the agreement among the experts including quality control system of the systematical vocational education management with EDFR in the factors of Input, Process, Output and Environment.

## Result

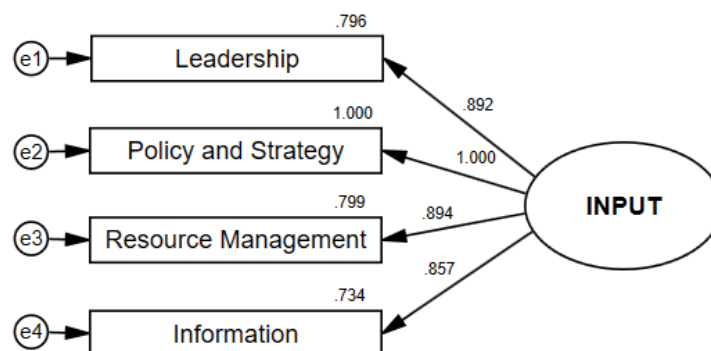
The trends of educational quality assurance with world-class standard in vocational education were analyzed by distinguishing from the quality control system of the systematical vocational education management into 4 factors - Input, Process, Output, and Environment. There were 182 events in the trends from the experts' agreement as follows;

**Table 1** Summary of the trends of the quality control system of the systematical vocational education management

Vocational Education's Systematic Quality Assurance	Desirable Scenario				Undesirable Scenario		Sum
	Consistent			Inconsistent	Consistent	Inconsistent	
	Strongly Possible	Possible	Moderate				
1. Input Factor	57	16					73
2. Process Factor	42	21	-	1	-	2	66
3. Output Factors	20	2		1			23
4. Environment Factor	9	9	-	2	-	-	20
<b>Sum</b>	<b>115</b>	<b>56</b>	<b>1</b>	<b>6</b>	<b>-</b>	<b>4</b>	<b>182</b>

The research findings revealed that the future scenario of the world-class standard educational quality assurance of schools in vocational education consisted of 4 components: 1) Input, 2) Process, 3) Output, and 4) Environment. It found 16 observed variables, and 182 expected future events covering the quality measurement system of vocational education. According to consistent opinions of the experts, 115 events had probability level at the highest level, 56 events were at a high level, and 1 event was at a moderate level.

The analysis results of futures wheel of event in Input factor used the main component by synthesizing concepts and theory about quality and quality management, and content analysis and qualitative data were conducted by interviewing. Totally, there were 4 components of the Input factor which are observed variables comprised of 1) Leadership, 2) Policy and Strategy, 3) Resource Management, and 4) Information. Based on the experts' aspects, there were 73 events that the future scenario was desirable and possible.



**Figure 1** Futures Wheel Analysis of Event in Input

The analysis results of Structural Equation Modeling (SEM) was analyzed by using a statistical data analysis program. After investigating the coherence analysis of Structural Equation Modeling with the empirical evidence, it was found that latent variables, Input factor consisted of 4 observed variables. The factors loading were ranged from .857 – 1.000 in the form of standard scores. Factor loading of Policy and Strategy variable was 1.000, which means that policy and strategy have the most impact on Input Factors.

The Process Factor comprised of 6 observed variables, 1) Students Production, 2) Curriculum Development, 3) Assistance and Support, 4) Networking, 5) Research and Development, and 6) Educational Quality Assurance Process. Based on the experts' aspects, there were 63 out of 66 events that the future scenario was desirable and possible.

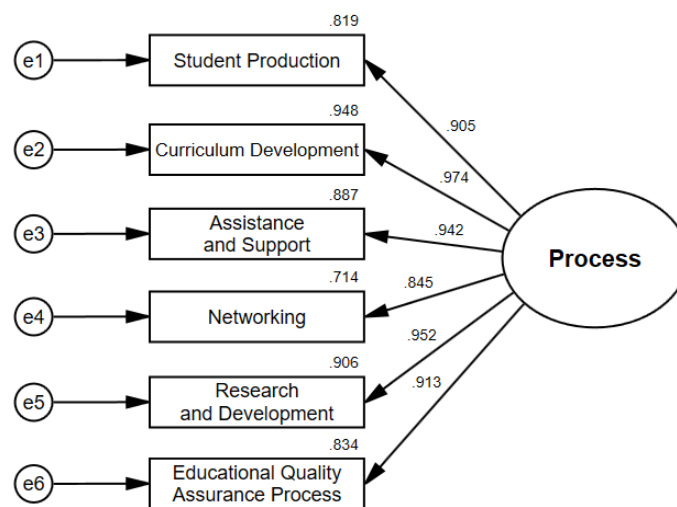


Figure 2 Futures Wheel Analysis of Event in Process

The analysis results of Structural Equation Modeling (SEM) was analyzed by using a statistical data analysis program. After investigating the coherence analysis of Structural Equation Modeling with the empirical evidence, it was found that latent variables, Process factor consisted of 6 observed variables. The factors loading were ranged from .845 - .974 in the form of standard scores. Factor loading of Curriculum Development variable was .974, which means that of Curriculum Development variable have the most impact on Input Factors.

The Output Factor comprised of 2 observed variables, 1) Graduates, and 2) Quality of Educational Institutions. Based on the experts' aspects, there were 22 out of 23 events that the future scenario was desirable and possible.

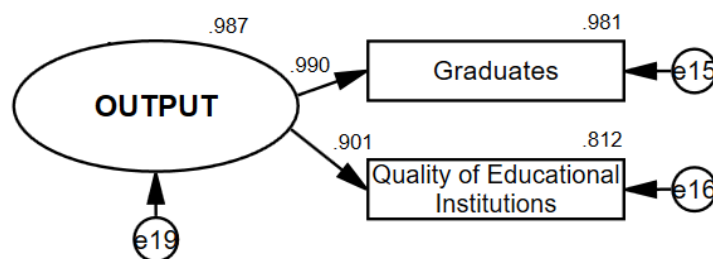
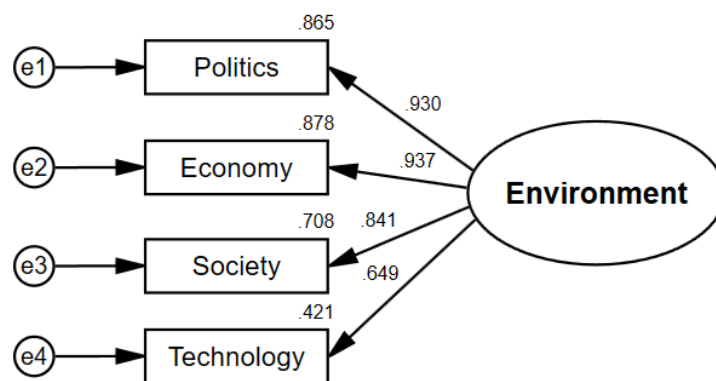


Figure 3 Futures Wheel Analysis of Event in Output

According to the analysis results of Structural Equation Modeling (SEM) with the empirical evidence, it was found that latent variables, Output factor consisted of 2 observed variables. The factors loading were ranged from .939 – .950 in the form of standard scores. The factor loading of Graduates variable was .974, Quality of Educational Institution variable was .939 in the form of standard scores respectively.

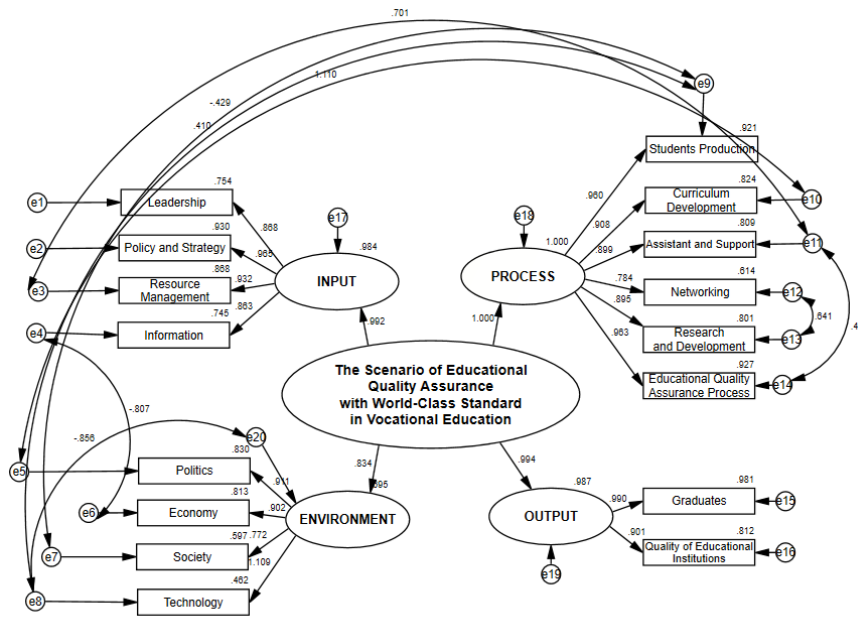
The Environment Factors comprised of 4 observed variables, 1) Politics, 2) Economy, 3) Society, and 4) Technology. Based on the experts' aspects, there were 18 out of 20 events that the future scenario was desirable and possible.



**Figure 4** Futures Wheel Analysis of Event in Environment

The analysis results of Structural Equation Modeling (SEM) was analyzed by using a statistical data analysis program. After investigating the coherence analysis of Structural Equation Modeling with the empirical evidence, it was found that latent variables, Environment factor consisted of 4 observed variables. The factors loading were ranged from .649 – .937 in the form of standard scores. The factors loading of Economy variable was .937, Politics variable was .930, Society variable was .841, and Technology variable was .694 respectively.

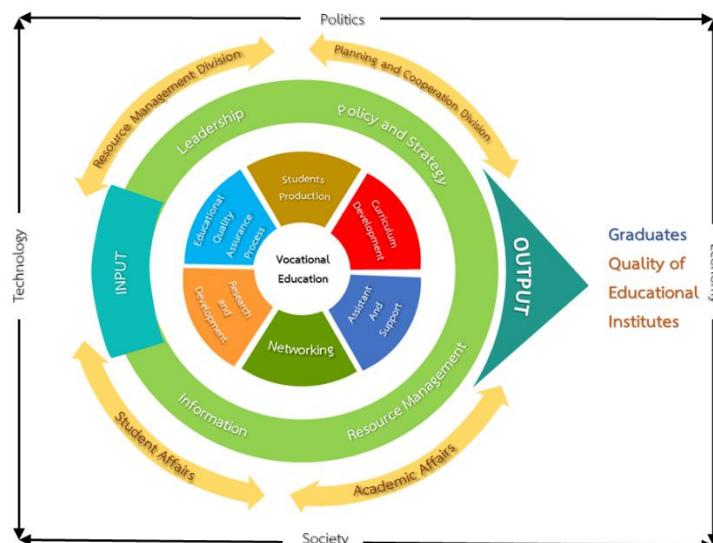
The researcher studied the events that the future scenario was desirable, and the trends were possible based on the experts' aspects covered with the system of educational quality assurance in vocational education, Input, Process, Output, and Environment to analyzes Futures Wheel.



**Figure 5** Confirmatory Factor Analysis of Event: Educational Quality Assurance with World-Class Standard in Vocational Education during 2019-2028

Trends, concepts, and future events that will occur in educational quality assurance with world-class standard in vocational education consisted of 4 factors, 16 observed variables and 182 events covered with the quality check system of systematical vocational education management. In total, the weighted values of the components were ranged from .772 to 1.109 with statistical significance at .001.

The result of this study demonstrated the statistical significance of the goodness of fit indices of the events, the educational quality assurance with world-class standard in vocational education during 2019-2028 chi-square  $\chi^2 = 285.751$ ,  $df = 92$ ,  $\chi^2/df = 3.106$ , goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) = .521, .292 respectively, root mean square residual (RMR) = .032, and root mean square error of approximation (RMSEA) = .324.



**Figure 6** The Scenario of Educational Quality Assurance with World-Class Standard in Vocational Education



## Discussion

The trends of the scenario of educational quality assurance with world-class standard in vocational education distinguished from the quality control of the systematical vocational education management into 4 factors; Input, Process, Output, and Environment using Delphi Technique. The research was conducted in 2 phases. There were 182 events from the experts' agreement covered with the quality control of the systematical vocational education management consisted of 1) 73 events of Input divided into (1) 14 events of Leadership, (2) 13 events of Policy and Strategy of the organization, (3) 40 events of Resource Management, and (4) 6 events of Information, 2) 66 events of Process divided into (1) 14 events of Students Production, (2) 12 events of Curriculum Development, (3) 9 events of Assistance and Support, (4) 11 events of Networking and Participation, (5) 8 events of Research and Development, and (6) 12 events of Educational Quality Assurance Process, 3) 13 events of Output divided into (1) 13 events of Graduates, and (2) 10 events of Quality of Educational Institutions, and 4) 20 events of Environment divided into (1) 3 events of Politics, (2) 4 events of Economy, (3) 9 events of Society, and (4) 4 events of Technology.

The experts' agreement regarding the event trends indicated that Input factor, (1) the events of Leadership that are the most possible are the administrators who have great leadership qualities, are able to use the principles to administrate, develop the participative internal organizational structure and have a vision with world-class leadership. Limprasong (2013, p. 267) stated that administrators support the process or activities integrated the unity, collaboration, and dedication in the organization. Good human relations as well as communication to transfer the policy of the stakeholders to perceive, understand, practice, and achieve goals for all at present and in the future. (2) The events of Policy and Strategy that are the most possible are planning, monitoring, evaluation, and reporting on the results of implementation continuously to improve and develop effectively. In accordance with Mokkaranurak (2011, p. 278), Thai vocational education needs to be changed and adjusted in every concerned part. The producer group means vocational education policymakers have to make a clear policy and strategy. Make a clarification of the policy for vocational education and specify a clear long-term development direction for the country. Monitor and control the policy of vocational education seriously and also encourage private vocational education to be equal to the public. (3) The events of Resource Management that are the most possible are to support teachers and education personnel in training, seminar, practical training, and professional experience. Srisa-an (2007, p. 194) as a keynote speaker on the topic of the tripartite cooperation of higher education in the public, industrial sector, and university noted that the government must have a clear policy and support enough resources. The establishment participates in vocational education management for vocational education institutions in the areas. There is a mechanism and a plan to provide resources from the establishment in the community to use in educational management. (4) The events of Information that are the most possible are to develop information and data systems and integrated communication with instructional management. Noree (2013, p. 364) studied the information in vocational education. The finding showed that the form of the information technology administration in vocational education consists of 3 elements that are 1) information technology board, 2) the scope of information technology administration, and 3) the procedure of information technology administration.

Process factor, (1) the events of Students Production that are the most possible are to enhance their education and career in order to service people, society, and community. According to the ministry of education (2009, p. 119), the ministry prescribed the development of education quality and learning, curriculum, teaching and learning process, assessment and evaluation, and education quality to accommodate learners and develop the quality of vocational education standard to produce knowledgeable and skillful manpower both academic and vocational. (2) The events of Curriculum Development that are the most possible are to develop vocational education curriculum. The curriculum should be focused on the basic skills of the career skills that enable to develop sustainably and to support an entrepreneur mindset. Manfred and Jennifer (2004, p. 85) stated that the quality of learners and vocational skills rely on the quality of teachers and trainers, so teaching and learning process should be changed. (3) The events of Student Assistance and Support that are the most possible are to support the collaboration and to provide the measure in the development of student support. Kojuantaw (2014, p. 258) revealed that the key mechanism is to arrange the guidance for parents and community about the desire of learners so that they can choose their preferable field of the study and meet the demand of Thai and ASEAN workforce markets. Moreover, survey the graduates continuously and survey the satisfaction of service recipients. (4) The events of Networking and Participation that are the most possible are to allow and provide the establishment to collaborate in identifying and evaluating the quality of graduates. There are 5 elements of vocational education management. It comprises of the dual vocational education management, the decentralization of administration and classroom management, the development of personnel, curriculum development based on the standard and the demand of workforce, and the learning management based on good governance (Ruamchomrat, 2015, p. 307). (5) The events of Research and Development that are the most possible are that the institutes support research, innovation, and inventions. Chareonwongsak (2014, p. 116) stated that the key factors affecting Thai education are 1) economy because education enables to improve people to do research and create innovation that is useful for the economy, 2) system – the government system is strict and not flexible to accommodate educational administrators or teachers do not adjust themselves, and 3) culture, it is an obstacle to develop the quality of educational management. And (6) the events of Educational Quality Assurance Process that are the most possible are to regulate prescribing the criteria for institutions administration with a clear quality system. It is consistent with the concept of monitoring and evaluation of vocational education office (2013, p. 84) that is to classify levels of the quality of institutions by encouraging teachers to be aware of appropriate classroom management and course syllabus completely. Moreover, arrange career preparation courses to support students, set the learning environment, motivate positive reinforcement, develop student care system, and develop internal educational quality assurance.

Output factor, (1) the events of the Graduates that are the most possible are that desired characteristics of the graduates are consistent with the demands of establishment and labor market. Daoruang (2017, p. 256) identified the characteristics of vocational graduates that the fields of the study meet the demand in the jobs market, the professional competence meets the demand of the establishment, work habits meet the demand of the establishment, and the graduates have morality, ethics and have professional qualifications

with the standard. (2) The events of Quality of Educational Institutions that are the most possible are to have the activities and the successful modeling projects (Best Practice). Using the results of the annual performance evaluation as the data for the quality assurance planning of educational institutions, preparing project plans, and approving world-class standard education such as APACC are to manage educational quality assurance relating to the strategic planning of the institutions (Kojuantiaiw, 2014, p. 127).

Environment factor, (1) the events of the Politics that are the most possible are to study and analyze the government policy in order to link with the institutes and drive the concrete policy. According to the Office of the Vocational Education Commission (2012, p. 58), it was prescribed that the mission to drive the production policy and the development of the vocational workforce to world-class 2012-2026 relating to technical colleges are to enhance the quality of vocational education management, cooperate with the international organization, build the strength of quality assurance, and prepare for international assessment. (2) The events of Economy that are the most possible are to publish sufficiency economy philosophy and integrate it with the administration productively. Chareonwongsak (2014, p. 139) claimed that the factor affecting Thai educational management is the economic factor because education enables to develop people in research skills in order to create innovation that is valuable for the economic system. (3) The events of Society that are the most possible are that the external institutes realize the importance of the educational quality and support the instruction in vocational education. Mokkaranurak (2011, p.227) stated that Thai vocational education in the next 10 years will encounter many significant trends such as globalization, international trade competition, and free trade area. The most important thing is ASEAN Community by transferring the workforce freely in the member nations, so Thailand should be ready for vocational education. (4) The events of Technology that are the most possible are to apply technological innovation, process systems in the instruction effectively. According to the vocational education committee (2017, p. 120), the production and development of workforce in vocational education should be effective and standard and meet the demand of the market and the country as well as ASEAN. Accelerate the development of quality and learner competency, have strategies, support morality, gain experiences, do volunteer work, have a service mind, support information technology and innovation to use in the classroom, and enhance establishment skills.

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