

AQRF Referencing Report Of Thailand

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AQRF Referencing Report Of Thailand



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Abbreviations

AMS	ASEAN Member States
APACC	Asia Pacific Accreditation and Certification Commission
AQA	Automated Quality Assurance
AQAF	ASEAN Quality Assurance Framework
AQRF	ASEAN Qualifications Reference Framework
CHE QA	Commission on Higher Education Quality Assurance
DSD	Department of Skill Development
EAS TVET QAF	East Asia Summit Technical and Vocational Education and Training Quality Assurance Framework
EQA	External Quality Assurance
EQAA	External Quality Assurance Agencies
EU	European Union
GAT	General Aptitude Test
LAOs	Local Administration Organizations
IQA	Internal Quality Assurance
MHESI	Ministry of Higher Education, Science, Research and Innovation
MOE	Ministry of Education
MOL	Ministry of Labour
MRA on TP	Mutual Recognition Arrangement on Tourism Professionals
MRAs	Mutual Recognition Arrangements
NIETS	National Institute of Educational Testing Service (Public Organization)
NQF	National Qualifications Framework
NSS	National Skill Standard
OBEC	Office of the Basic Education Commission
OCSC	Office of the Civil Service Commission
OEC	Office of the Education Council
ONESQA	Office for National Education Standards and Quality Assessment (Public Organization)

Abbreviations

ONET	Ordinary National Education Test
ONIE	Office of the Non-Formal and Informal Education
OPEC	Office of the Private Education Commission
OPS	Office of the Permanent Secretary
OS	Occupational Standards
OVEC	Office of the Vocational Education Commission
OHEC	Office of the Higher Education Commission
PAT	Professional Aptitude Test
PQ	Professional Qualification
PQF	Professional Qualification Framework
QA	Quality Assurance
SAR	Self-Assessment Report
TPQI	Thailand Professional Qualification Institute (Public Organization)
TQF: HEd	Thai Qualifications Framework for Higher Education
TVET	Technical and Vocational Education and Training
V-NET	Vocational National Education Test

Introduction

Thailand joined the ASEAN Member States in 2010 and has participated in a scheme on Referencing National Qualifications Framework (NQF) to the ASEAN Qualifications Reference Framework (AQRF) in Phases I – III, from 2010 to 2015. At present the implementation, according to the ASEAN Secretariat's Work Plan on Referencing NQF to AQRF Phase IV, from 2016 to 2019, is being carried out by the AQRF Committee and the Secretary-General of the Education Council is one of Thai members.

Thailand proposed to pilot the referencing process between NQF and AQRF from 2015 to 2019. The main objectives of the referencing process were not only developing linkages between levels of qualifications, descriptors or learning outcomes at each level of the NQF and AQRF, but it was also a process of NQF improvement and learning experiences for all concerned agencies in order to be ready for full implementation.

Thailand had developed and implemented NQF since 2013. Five qualification sub-frameworks are comprised of three sub-qualification frameworks in education: Basic Education, Technical and Vocational Education and Training, and Higher Education, with two qualifications sub-frameworks from Occupational Standards which were Thailand Professional Qualification Standards, and National Skill Standards, both of which were included in NQF. There were nine levels of NQF learning outcomes which provided linkages between the qualifications of the five sub-frameworks in order to facilitate lifelong learning and workforce development in Thailand.

In 2016, after implementing NQF for two years, it was found that there were some duplications and unclear meanings of the descriptors in the higher levels, especially, levels six, seven, eight and nine, which were not carried out. Therefore, policy people and all of the concerned agencies were responsible for five qualification sub-frameworks and agreed to revise the NQF by working together in improving the framework for revision. After that,

each responsible agency for the qualification sub-framework worked with stakeholders in order to review and revise the level descriptors of their qualifications in NQF.

In terms of all five qualification sub-frameworks, the relevant agencies were actively working on the referencing process by organizing a qualifications sub-framework referencing committee comprised of their stakeholders. Several workshops and meetings were conducted and the referencing outcomes were finalized. The results of referencing qualification descriptors and levels from each qualification sub-framework were submitted to the Sub-Committee on Referencing NQF to AQRF for scrutiny, consolidation and integration through a number of workshops and meetings before being submitted to the National NQF Committee for approval.

Finally, the NQF was revised from nine levels to eight, in line with the AQRF and received approval from the National Qualifications Framework Committee, chaired by Deputy Prime Minister, and endorsed by the Cabinet on the 18 April 2017. The impact of the revised NQF slightly affected the level descriptors for six, seven, eight and nine, which were integrated and consolidated into the revised levels of six, seven and eight. Accordingly, all concerned agencies worked with stakeholders to review and adjust both level descriptors and learning outcomes in accordance with revised NQF levels, changing technologies and the need for the required manpower.

Criterion 1 :

Structure of Education and Training System

The structure of the education and training system is described

As stipulated in the Constitution of the Kingdom of Thailand 2017, Section 54, the State has to ensure that every child receives quality education for 12 years from pre-primary to the completion of compulsory education, free of charge. The State shall undertake to provide people with education as needed in various systems, including promoting lifelong learning, and to enable cooperation among the State, local administrative organizations and the private sector in providing every level of education. The State has the duty to carry out, supervise, promote and support the provision of education to be of quality and to meet international standards.

There are three types of education in Thailand: formal education, non-formal education, and informal education, which were provided by educational and training institutions. As stipulated in the National Education Act B.E. 2542 (1999) and Amendments (Second National Education Act B.E. 2545 (2002)). The accumulated credit transfer system is also used to facilitate those who are outside of formal school system to achieve recognition. The Thailand Qualifications Framework consists eight levels. Primary education and lower secondary education were classified as compulsory education and provided for children between seven to fifteen years of age for a duration of nine years for Primary Educational Qualification and Lower Secondary Education Qualification. However, the formal education in Thailand begins with entry into pre-primary school at the age of three until the age of six for preparing to enter primary school.

In terms of basic education, graduates of Lower and Upper Secondary are recognized as levels one and two of NQF, respectively. As graduates of the Upper Secondary level or Grade Twelve had the possibility of qualification up to level three, if they have additional vocational training and testing, as well as completed a Vocational Education Certificate. The graduates of Technical Education Diploma had qualifications up to levels four and five, depending on the field of study, while graduates with a Bachelor's Degree, a Master's

Degree, and a Doctoral Degree would obtain qualifications for levels six, seven, and eight. Formal Education, Non-Formal Education, Informal Education and training, as well as the validation of experience are provided for those who need qualifications.

1.1 Thailand's National Qualifications Framework

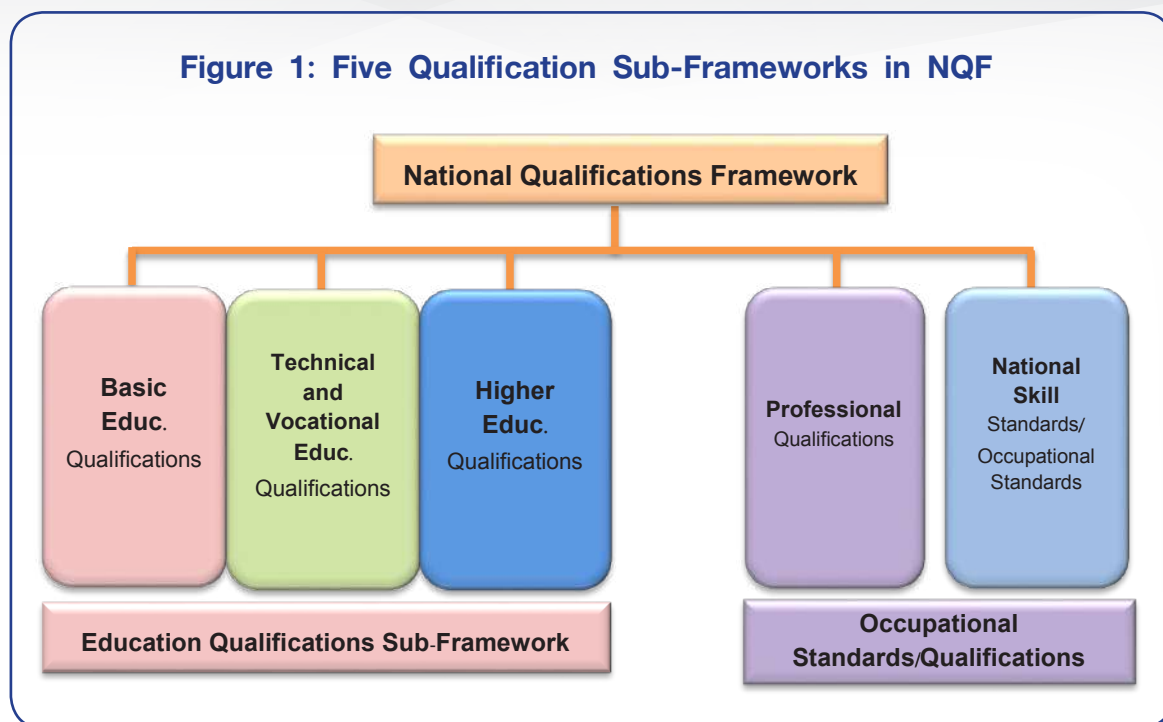
Thailand needs to strengthen its manpower development to meet the standards of both the ASEAN and the international community. The Office of the Education Council (OEC) is a policy organization, responsible for the quality of national education, realized the importance of education reform for manpower development. Therefore, several international meetings and workshops on NQF were carried out in cooperation with UNESCO Paris Office, UNESCO Bangkok Regional Office, with representatives from the European Qualifications Framework, German International Cooperation (GIZ) and other regional related agencies. Finally, the National Qualifications Framework (NQF) was established and approved by the Cabinet in 2013.

After three years of implementation, the NQF was reviewed and revised in 2016. The reasons for reviewing NQF of 2013 was that there were some duplications and unclear meanings of descriptors at the higher levels, especially, levels seven, eight and nine which were not extensively implemented. Furthermore, it was the policy of the National NQF Committee to review NQF in order to comply with AQRF.

Every agency concerned agreed to revise the NQF levels descriptors and it was approved by the National NQF Committee, chaired by Deputy Prime Minister. The NQF was revised from nine to eight levels to be in line with AQRF and received approval from the Cabinet on 18 April 2017. The change from nine to eight levels of NQF had no impact on learning outcome levels one to three. However, for levels four to eight, there are a few adjustments on learning outcomes which were considered for revision by the agencies concerned. The NQF was slightly affected on levels seven, eight and nine as potentials and the learning outcomes were integrated and consolidated into the revised levels six, seven and eight.

The main objectives of NQF are to consolidate all qualifications into the same framework in order to provide lifelong learning and reform education for employment. The NQF in Thailand provides linkages between education qualifications and occupational standards. Therefore, the learning outcomes of each education qualification is relevant to the level of competency required by each

occupation. The NQF consists of five qualification sub-sector frameworks which include three educational sub-frameworks and two occupational standards or qualifications sub-frameworks, as shown in Figure 1.



The five qualifications sub-frameworks listed in Figure 1 include Basic Education Qualifications, TVET Qualifications, Higher Education Qualifications, Professional Qualifications, and National Skill Standards, which reference the NQF.

There are three agencies responsible for developing and monitoring qualifications framework and standards, the learning outcomes and the related rules and regulations. NQF links education qualifications with levels of occupational standards to ensure employment of graduates, as well as to provide a learning pathway for those with occupational qualifications. The three main agencies in the Ministry of Education responsible for Education qualifications include the following:

- Office of the Basic Education Commission for Basic Education Qualifications
- Office of the Vocational Education Commission for Technical and Vocational Education Qualifications
- Office of the Higher Education Commission for Higher Education Qualifications

In terms of occupational standards, the Thailand Professional Qualification Institute (Public Organization) is responsible for Professional Qualifications and the Department of Skill Development, the Ministry of Labour is responsible for National Skill Standards.

Principles

The National Qualifications Framework (NQF) was developed according to the following principles:

- Consolidate all qualifications issued under the five qualifications sub-framework into a single framework.
- Establish linkages between learning outcomes of graduates from each educational qualification and level of occupational qualifications or skill standards.
- Provide a learning pathway through training, non-formal and informal learning, as well as open learning mechanisms for fulfilling, transferring, recognizing, and further education and training.
- Strengthen lifelong learning and validation of experience for widening participation in higher education or higher qualifications.

Therefore, the NQF provides guidelines for linking all levels and types of qualifications in the country, as well as the competency levels of individuals whose learning outcomes are based on either education, training or experience. In other words, NQF provides linkage between education qualifications, occupational standards or qualifications.

Objectives

- To serve as mechanism for education reform and quality improvement by linking it with occupational qualifications.
- To strengthen lifelong learning for manpower capacity building in order to contribute to socio-economic development.
- To develop linkage with NQF of other countries and serve as mechanism for manpower competitiveness and mobilization.
- To extend the system of validation of experience or Recognition of Prior Learning (RPL) including the linkage of the learning pathway.

Definition of Key Terms

- NQF is a framework which provides linkages between the learning outcomes of each level of education qualifications, as stipulated by the levels and the types of education, and each level of competencies in occupational standards and qualifications.
 1. Education Qualifications are evaluated by a formal certificate, diploma or degree for each level and type of education such as basic education, vocational education and higher education.
 2. Occupational Standards and qualifications are guidelines for identifying levels of performances or competency levels of different complexity levels, comprising professional qualifications of TPQI and skill standards of DSD.
- Learning Outcomes are an indicative criteria of learning characteristics and the results derived from the learning process at each level or type of education and experiences of work and practical training. Learning outcomes are divided into three dimensions, as follows:
 1. Knowledge, theoretical and factual, concerned with facts, principles, theories and guidelines related to learning or working.
 2. Skills are abilities in work performance assigned to an individual to manage, solve problems with the cognitive skills related to logical, intuitive, creative thinking or practical skills in using tools and equipment effectively.
 3. Application of knowledge, skills and responsibilities. Ability of an individual; resulting from learning processes, knowledge, social skills, work experience, education and training, that would facilitate professional development. Ability in communication, leadership, responsibility, and autonomy, such as decision making and responsibility for others and oneself, is also included.

Structure

There are eight levels of qualification description in the NQF which provides three parts of learning outcomes: knowledge, skills, application and responsibilities.

• Levels

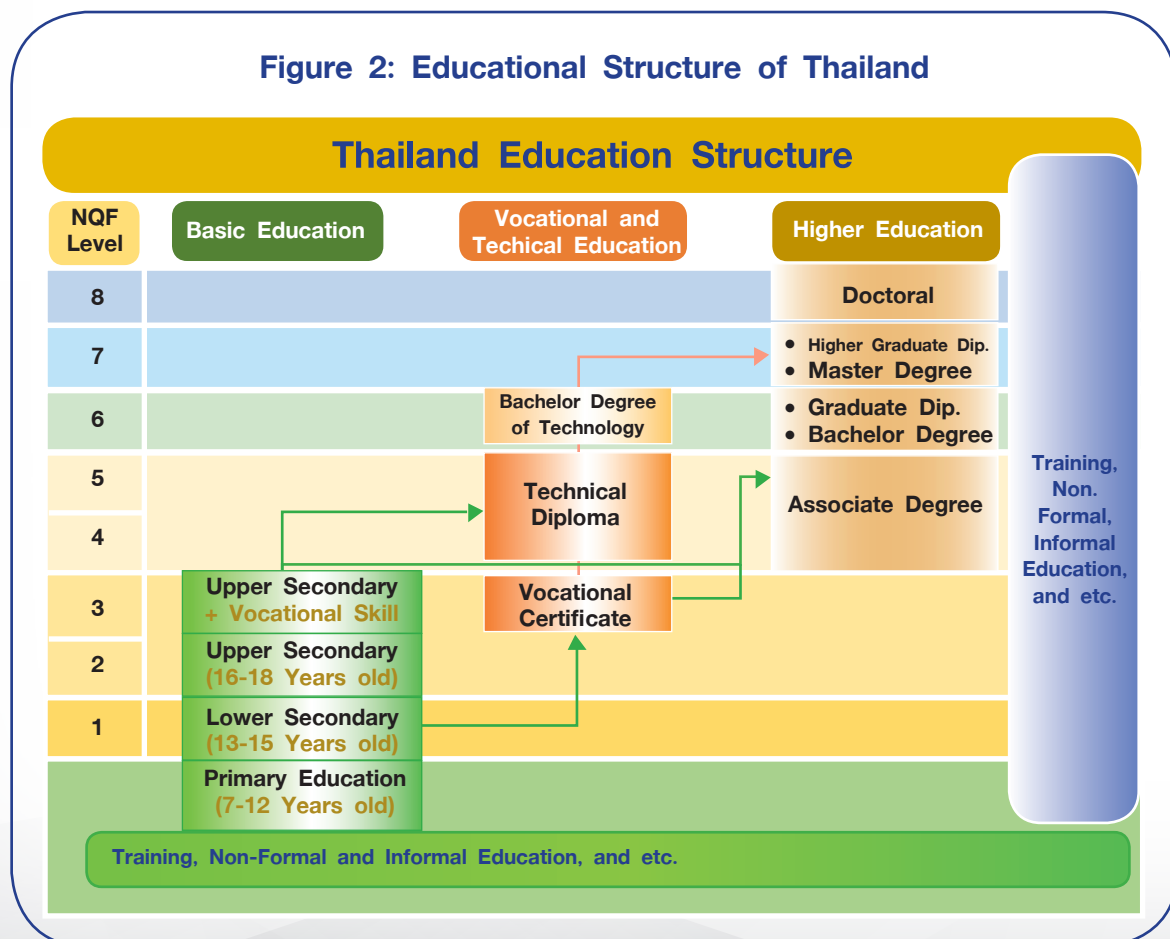
Levels of abilities have been identified in the NQF according to the scope of knowledge, skills and abilities in terms of application and responsibilities which contain learning outcomes and different scopes from basic to advanced levels of 1 to 8. Those level descriptions are common and can be applied for qualifications of manpower in every occupational field.

• Learning Outcomes

There are three parts of learning outcomes: (1) knowledge which covers academic competencies, i.e. concepts, theories, and facts; (2) skills which include critical thinking, introspection, initiation and practice; and (3) ability in application of knowledge, skills, and responsibilities.

1.2 Structure of Education System

Figure 2: Educational Structure of Thailand



The education structure in Thailand is presented in Figure 2. The structure of education contains three sub-sectors of education, as follows: (1) Basic Education; (2) Technical and Vocational Education and Training, and (3) Higher Education. Non-formal education, informal education, and training are also provided for three qualification sub-sector pathways as alternatives for those who are out of the school system or in the labour market. There are eight levels of NQF, which cover the three qualification sub-sector frameworks.

The National Education Act B.E. 2542 (1999) required nine years of compulsory education for seven-year-old children. It covers six years of primary and three years of lower secondary education. In general, upper secondary education and the vocational stream of education are provided free of charge, but are not compulsory. Normally, students are expected to complete nine years of education by the age of 15, followed by another three years for the upper secondary level. They are required to select a general or vocational education stream. Higher education is provided in various fields and for both academic and technology streams.

The structure of education in Thailand, comprised of basic education, technical and vocational education, and higher education are represented as sub-framework under the NQF. Therefore, the learning outcomes of each education qualification comply with the learning outcomes of each NQF level. For those out of schooling system, if they want to obtain education qualifications, they can use their occupational qualifications or skill standards for recognition as a part of learning experiences. In other words, the NQF has provided an opportunity for both students in the schooling system to qualify for occupational qualifications and those out of the schooling system to qualify for educational qualifications through the validation of experiences as well as for non-formal education and lifelong learning at each NQF level. Non-formal and informal education, as well as training are also provided with learning pathways and widening participation in qualification systems.

Moreover, according to the National Education Act B.E.2542 (1999), the credit transfer system for education qualifications must be implemented for formal education, non-formal and informal education by authorized agencies for Basic Education, TVET, and Higher Education. For Basic Education, credit transfer can be arranged for non-formal and informal learning and among institutions for qualifications. The credit transfer system for TVET is provided by TVET institutions. In addition, credits could be earned by recognizing or validating prior learning and experiences,

as well as occupational standards or professional qualifications. For Higher Education, the credit transfer system is also organized among higher education institutions and from non-formal and informal education. Recognition of Prior Learning (RPL) is also implemented.

The details of three qualifications sub-frameworks are as follows:

Basic Education

• Qualifications

1. **Primary Education** is classified as compulsory education, provided for children between 7 to 12 years old for a duration of six years for Primary Education Qualification. However, the formal education in Thailand begins with entry into pre-primary school from the ages of three to six in preparation to enter primary school.
2. **Secondary Education** is divided into lower and upper secondary education.
 - **Lower Secondary Education** requires three years of study by students from the ages of 13 to 15. This Lower Secondary Education Qualification aligns with level 1 of NQF.
 - **Upper Secondary Education** requires three years of study of students from the ages of 16 to 18. Students who completed Upper Secondary Education Qualifications are in level 2 of NQF, and if they completed with one specialized basic skill, they will be qualified for level 3 of the NQF. They are required to pass the General Aptitude Test (GAT) and the Professional Aptitude Test (PAT) for continuing their study in higher education.
 - **Number of Schools and Students in Basic Education**
The number of Basic Education schools and students in the 2016–2018 academic years are shown, in Table 1, including both public and private schools under the supervision of the Ministry of Education (MOE) and other agencies.

Table 1: Number of Schools in Basic Education (Academic Years 2016 - 2018)

Numbers of School	Academic Year		
	2016	2017	2018
- Primary	21,300	21,279	20,239
- Lower secondary	6,965	6,960	6,934
- Upper secondary	2,551	2,478	2,529
Total	30,816	30,717	29,702

Source: Education Statistics, 2019, Information Unit, Bureau of Basic Education Policy and Plan, Office of the Basic Education Commission

Table 1 presents the number of basic education schools from 2016 to 2018. Pre-primary education is mainly provided in primary schools and some secondary schools.

The number of schools in 2016 was 30,816 and declined to 30,717 in 2017 and 29,702 in 2018.

Table 2: Number of Students in Basic Education (Academic Years 2016 - 2018)

Level of Education	Academic Year		
	2016	2017	2018
Primary	3,204,176	3,414,689	3,121,256
• Lower secondary	1,737,508	1,736,030	1,726,825
• Upper secondary	1,017,025	985,956	972,657
Total	5,958,709	6,136,675	5,820,738

Source: Education Statistics, 2019, Information Unit, Bureau of Basic Education Policy and Plan, Office of the Basic Education Commission

Table 2 presents the number of students in Basic Education in the 2016 to 2018 academic year. There were 5,958,709 students in 2016, 6,136,675 in 2017, and 5,820,738 in 2018. The number of students in 2018 is obviously lower than previous years at all levels.

Moreover, according to the National Education Act B.E.2542 (1999), a credit transfer system is required to be set for formal education, non-formal and informal education. The concerned authorized agencies are required to develop their own rules and regulations to support the credit transfer system.

- **Learning Pathway of Basic Education**

Students who may not complete qualifications in the same school or in formal education are able to transfer their credits, as follows: (1) credit transfer of formal schools, or (2) credit transfer of non-formal education and informal education and training.

- 1. Credit transfer of Formal Schools**

Learners could ask to transfer credits of their learning outcomes for various reasons: moving to another school, changing type of education, changing curricula or transferring courses, dropping out and then coming back to continue education, studying from abroad then continuing their education in the country. Moreover, credit transfer could be accumulated from prior knowledge, skills, experiences and other learning sources; for example, work experience, religious institutions, occupational training providers, and education provision by families.

- 2. Credit transfer of Non-formal/Informal Education and Training**

The learning outcomes from diverse learning procedures including formal, non-formal and informal education can be linked to fulfilled education qualifications. According to the criteria, the transfer could be made by both learning outcomes and experience, using compulsory and elective subjects, not exceeding 75% of the curriculum structure at each level of basic education. Additional training would be provided to make an individual qualify for qualifications.

Technical and Vocational Education and Training

- **Qualifications**

Technical and Vocational Education and Training (TVET) in Thailand offers three qualifications: Vocational Education Certificate, Technical Diploma, and Bachelor Degree of Technology.

- 1. Vocational Education Certificate** is a three year programme at upper secondary level (grades 10 to 12) for those who have completed nine years of education or lower secondary education. The validation of experience and prior learning, as well as additional training for those out of the schooling system, who would like to obtain this qualification. In order to fulfill requirements for completion of the Vocational Education Certificate, every learner has to pass the Vocational Education Standard Testing of each occupational area. The Vocational National Education Test (V-NET) is also provided by National Institute of Educational Testing Service (Public Organization) (NIETS) to ensure the quality of students for further TVET programme at higher level. The Vocational Education Certificate

programme is provided free of charge, as that of general upper secondary education for students in the schooling system. The learning outcomes of the programme complied with the occupational standard level 3 of the NQF.

2. **Technical Diploma** is provided for those who have completed Vocational Education Certificate or general upper secondary education (grade 12). It is a two-year programme (grade 13 and 14) with more specialized areas of occupation. For those out of the schooling system or adults who would like to obtain this qualification, the validation of experience or prior learning and additional training is provided.

All learners are required to pass the Vocational Education Test in each area of occupation in order to complete the programme. In addition, V-NET is also conducted by NIETS to ensure the quality of graduates, mainly focusing on generic skills, such as communication and problem-solving. The learning outcomes of levels 4 and 5 of NQF are also integrated into this programme.

3. **Bachelor Degree of Technology** is offered by Vocational Education Institutions under the supervision of the Office of the Vocational Education Commission (OVEC). It is a two-year programme that follows completion of the Technical Diploma. This programme is mainly designed for those who are employed in enterprises and want further education at a higher level or level 6 in the NQF. At present, this programme is 50% classroom experience or one year in college and one year in the workplace. The validation of experience is also carried out in this programme.

- **Number of Institutes and Students in Technical and Vocational Education and Training**

Table 3: Number of Technical and Vocational Institutes (Academic Years 2017 - 2018)

Type of Institute	Number of Institute	
	2017	2018
Public institutes	428	429
Private institutes	484	478
Total	912	917

Source: Education Statistics, 2018, Office of the Education Council

Table 4: Number of Students in Technical and Vocational Education and Training (Academic Years 2017-2018)

Type of Institute	Academic Year 2017			Academic Year 2018		
	Vocational Education Certificate	Technical Diploma	Bachelor Degree	Vocational Education Certificate	Technical Diploma	Bachelor Degree
Public	447,850	238,271	8,926	505,000	241,500	9,500
Private	209,708	98,888	-	205,600	53,700	-
Total	657,558	337,159	8,926	710,600	295,200	9,500

Source: Education Statistics, 2018, Office of the Education Council

Table 3 and 4 show the number of TVET institutes and students in 2017 and 2018. The number of private TVET institutes was higher than those of public institutes but the number of students was lower at every level of qualification.

Regarding the number of TVET students at diploma level in 2017, there were 337,159 students, which declined to 295,200 in 2018. The number of students in every level of public institutes decreased. This was due to the expansion of TVET programs in public institutes with the requirements of the industry sector were more responsive for economic development and there was more investment in terms of equipment and materials.

• Learning Pathway of TVET

For Technical and Vocational Education and Training, learning pathways are provided in various ways. The validation of experiences and recognition of prior learning are included. The examination and evaluation of the portfolio may be included for the assessment. Transferring of experiences can be obtained up to two-thirds of required technical subjects. The following table illustrates the number of trainees who obtained qualifications through the validation of experiences and additional training in 2017 and 2018.

Table 5: Number of Trainees Obtaining TVET Qualifications

Year	Number of Trainees
2017	16,679
2018	10,008
2019 (as of July)	10,003

Source: OVEC Report, 2019 Ministry of Education

Table 5 shows the number of trainees who obtained TVET qualifications in 2017 and 2018 through the validation of experience and additional training. In 2017, there were 16,679 trainees, which declined to 10,008 in 2018. The number of trainees in July 2019 was 10,003 and about 80% of them applied for further Technical Diploma Qualifications.

Higher Education

• Qualifications

Higher Education in Thailand covers Associate's degrees, Bachelor's degrees, Graduate Diplomas, Master's degrees, Higher Graduate Diplomas and Doctoral degrees.

- 1. Associate's degrees** require three years of study and learning outcomes of the programme complies with level 4 or 5 of NQF (depending on fields and complexity of programme).
- 2. Bachelor's degrees** require four to six years of study or another two years after an Associate's Degree. After a student has obtained a Bachelor's degree, they may continue to study for a Graduate Diploma. The learning outcomes of the programme comply with level 6 of the NQF.
- 3. Graduate Diplomas** require at least one year of study after a Bachelor's degree and the learning outcomes comply with level 6 of the NQF.
- 4. Master's degrees** require at least two years of study, but not in excess of five years. After a student has obtained a master degree, they may continue to study for a Higher Graduate Diploma. The learning outcomes of the programme comply with level 7 of the NQF.
- 5. Higher Graduate Diploma** requires at least one year of study after Master Degree and the learning outcomes in compliance with level 7 of the NQF.
- 6. Doctoral degrees** require no more than eight years of study. The learning outcomes of the programme comply with level 8 of the NQF.

- Number of Institutions and Students in Higher Education

Table 6: Number of Higher Education Institutes (Academic Year 2017)

Higher Education Institutions	Number	Percent
Public	83	40
Private	72	34
Others (outside the Ministry of Education)	55	26
Total	210	100

Source: Education Statistics, 2018, Office of the Education Council

Table 6 shows the total number of higher education institutes in 2017. There are 83 public higher education institutions (40 percent) and 72 private higher education institutions (34 percent). Since April 2019, universities and higher education institutes have been transformed into the Ministry of Higher Education, Science, Research and Innovation (MHESRI). Other ministries also provide higher education in specialized areas and for specific purposes, such as the Ministry of Health, Ministry of Defence, and Ministry of Tourism and Sports; however, the curriculum must conform to the rules, regulations, and Higher Educational Qualifications Framework of the Higher Education Commission.

Table 7: Number of Higher Education Students (Academic Years 2015-2017)

Level of Education	Academic Year		
	2015	2016	2017
1. Associate degree	12,643	12,341	12,718
2. Bachelor's degree and Graduate diploma	1,835,900	1,746,861	1,699,000
• Bachelor's degree	1,827,924	1,738,847	1,688,313
• Graduate diploma	7,976	8,014	10,687
3. Master's degree and Higher graduate diploma	180,895	148,169	133,316
• Master's degree	179,578	147,144	131,555
• Higher graduate diploma	1,317	1,025	1,761
4. Doctoral degree	24,824	23,995	24,530
Total	2,054,262	1,923,743	1,869,564

Source: Education Statistics, 2018, Office of the Education Council

Table 7 presents a decreasing number of higher education students from 2,054,262 students in 2015 to 1,923,743 in 2016, and then to 1,869,564 in 2017. However, the number of students in doctoral degree programmes increased from 23,995 in 2016 to 24,530 in 2017 and students in graduate diploma programmes (after Bachelor's degree) increased from 7,978 students in 2015 to 8,014 in 2016 and to 10,687 in 2017. Furthermore, the number of students in higher graduate diploma (after Master's degree) increased from 1,025 in 2016 to 1,761 in 2017. These may result in the declining number of Bachelor's degree students, enabling higher education institutions to offer specialized programmes or continuing education to those who already have a degree.

• Learning Pathway of Higher Education

The Thai Qualifications Framework for Higher Education (TQF: HEd), which is relevant to NQF and provides a pathway to higher education through open-learning system, distance learning, recognition of knowledge gained from formal, informal and non-formal learning such as schools, life experience, workplace, knowledge, social life, hobbies, ways of life, culture and others. The guidelines are set in the Proclamation of the Ministry of University Affairs Concerning Principles for Recognition of Prior Learning and Transfer of Course Credits on Entry to the Formal Education Sector.

Students seeking credit transfers for higher education qualifications must have at least upper secondary education qualifications and knowledge requirements, as set in the criteria of the Higher Education Commission with additional criteria set by higher education institutions. For example, those who would like to transfer learning outcomes from non-formal or informal education are required to pass an examination conducted by the faculty requested for transferring. The maximum requirement of credit transfers in each higher education institution and programme varies from 15% to 25% depending on its policy.

Non-Formal and Informal Education

Non-formal and Informal Education are provided through Continuing Education Programme. It is the provision of education to establish knowledge and skills for life, work, and self-development of learners, comprised of the following activities:

- 1. Education for vocational development** aims to provide vocational knowledge and skills training for the current or a new job. Moreover, technology is used to support work performances, leading to the smooth way to do a job, develop work skills, reduce expenses, in turn, and increase revenue.

2. Education for life skill development is provided in different methods of education, depending on the needs of learners; corresponding to current situations and beneficial for both way of life and the community. It is provided in the form of short-course training.

3. Education for social and community development is provided to improve knowledge and skills that people already had or obtained from participating in formal and non-formal education activities, and can be applied to develop society and the community. The programme focuses on social and community development, such as democracy, environment, community enterprise, security in life and property, and current situations affecting family and community.

Non-formal and Informal Education Programmes are offered to those out of the schooling system can lead to Basic Education Qualifications at Primary, and Secondary levels and Vocational Education Qualifications. The open-learning, self-directed learning, distance learning and work experience are also offered for Higher Education Qualifications by Universities and Technical Colleges.

Responsible Agencies in Education

In Thailand, the Ministry of Education (MOE) is the main agency responsible for education, promoting and overseeing all levels and types of education except Higher Education, which was then transformed into the Ministry of Higher Education, Science, Research and Innovation under the administration of both the state and the private sectors.

In addition, the Local Administration Organizations (LAOs) under the supervision of the Ministry of Interior also plays an important role in providing education in local areas; while other ministries undertake the management of education in specialized fields or for specific purposes. However, their qualifications must comply with the qualifications sub-framework, as well as the NQF and receive approval from the MOE.

Figure 3: Organizational Chart of the Ministry of Education

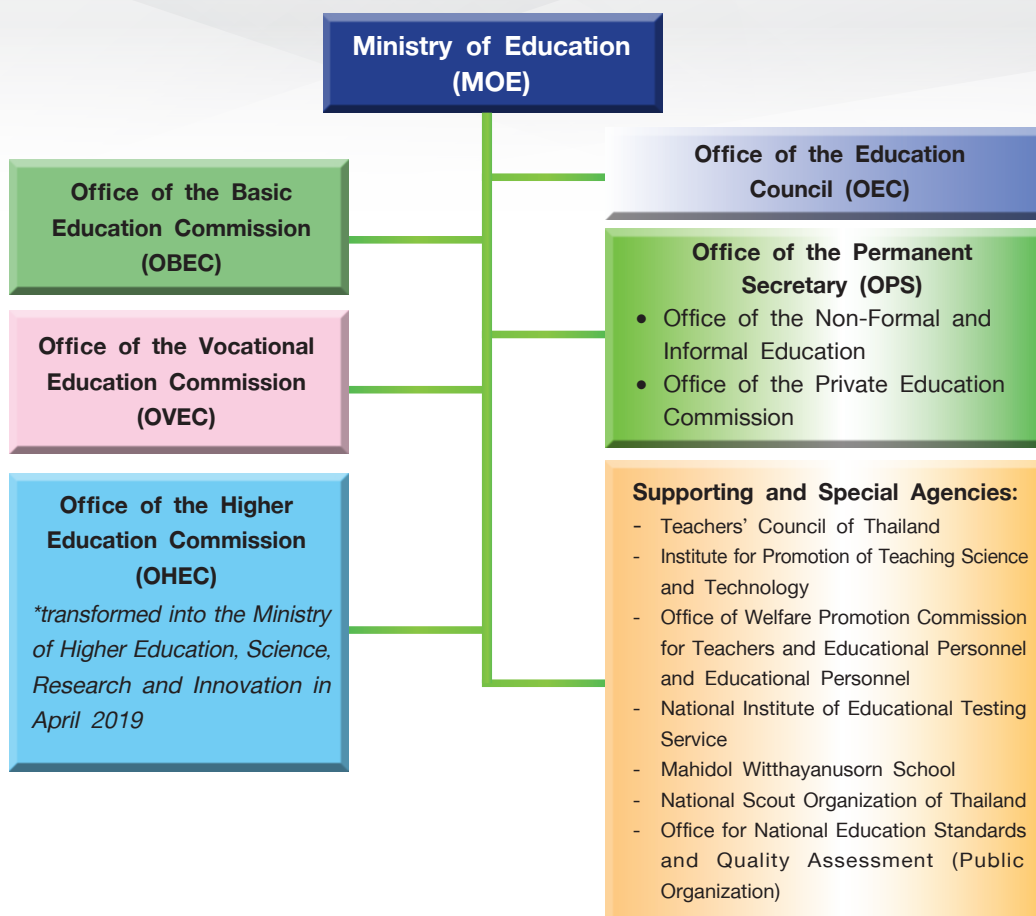


Figure 3 shows the Organization Chart of MOE. The education administration and management system of the MOE are under the responsibility of the five main bodies: (1) the Office of the Education Council; (2) the Office of the Permanent Secretary; (3) the Office of the Basic Education Commission; (4) the Office of the Vocational Education Commission; (5) the Office of the Higher Education Commission (OHEC) and Supporting and Special Agencies.

- 1. Office of the Education Council (OEC)** serves as the lead agency responsible for: formulating the policies, plans and standards of national education; evaluating the provision of education; conducting research for further development of the provision of education and strengthening capacity for competitiveness; developing and refining education laws.

2. Office of the Permanent Secretary (OPS) is responsible for: managing general administrative work; coordinating activities within the MOE, performing other official functions mandated by law; preparing the budget for the Ministry; planning as well as monitoring, inspecting and evaluating results in the discharge of functions in accordance with the policies, guidelines and work plans of the Ministry; and carrying out other work stipulated by ministerial regulations regarding official responsibility division. There are two main agencies under supervision of OPS providing education:

- **Office of the Non-Formal and Informal Education (ONIE)** has authority and duties to promote and provide education services, mainly focusing on general, non-formal education for various groups of learners, for example, out-of-school children; and informal education services for interested people, as well as special target groups, such as the disabled, elderly, minority, etc.
 - **Office of the Private Education Commission (OPEC)** has authority and duties as indicated in the Private School Act B.E. 2550 (2007). The agency is responsible for promoting and coordinating the tasks regarding private education; encouraging the implementation in line with private education laws; and supporting training organized by private agencies. However, OPEC has main responsibility on basic education only. Private Vocational and Technical Education is under the supervision of the Vocational Education Commission, while private Higher Education is under supervision of the Higher Education Commission.
- 3. Office of the Basic Education Commission (OBEC)** is responsible for: formulating policies, development plans, standards, and core curricula for basic education; mobilizing resources; developing administration systems, promoting and coordinating information networks for learning and teaching; developing education innovation; supervising the monitoring, inspection, and evaluation of the provision of basic education; and conducting the secretarial work of the Basic Education Commission.
- 4. Office of the Vocational Education Commission (OVEC)** is the main organization responsible for setting vocational education and training to meet the needs of labour markets and national economic growth in accordance with the manpower production policy and the National Economic and Social Development Plan. OVEC has vocational institutions throughout the country and each college has its own education programmes under National Vocational Qualification Framework within the NQF.

5. Office of the Higher Education Commission (OHEC) has authority to propose policies, development plans, and standards for higher education qualifications in NQF. OHEC carries out the Higher Education Development Plan, which is in line with the National Economic and Social Development Plan and the National Scheme of Education. As for the mobilization of education resources for higher education, OHEC takes charge of analyzing the principles and guidelines for supporting education resources, such as proposing and allocating budget for subsidizing higher education institutions and community colleges as indicated in the principles and guidelines. The OHEC can propose the establishment, dissolution, amalgamation, discontinuity and improvement of higher education institutions and community colleges. The Thai Qualifications Framework for Higher Education under the NQF is also developed and monitored by OHEC.

In April 2019, OHEC and the Ministry of Science and Technology have been amalgamated and transformed into a new ministry, called the Ministry of Higher Education, Science, Research and Innovation (MHESRI), which also carries out the sub-sector of higher education in the NQF. The reason for such amalgamation is the policy of the government in enhancing higher education to better serve the rapid change of technology and innovation. However, the transition period will take at least one year.

6. Supporting and Special Agencies

Besides the five main agencies responsible for education of various levels and types, there are seven supporting and special agencies which are independent from the MOE and are as follows:

- Teachers' Council of Thailand
- Institute for the Promotion of Teaching Science and Technology
- Office of Welfare Promotion Commission for Teachers and Educational Personnel and Educational Personnel
- National Institute of Educational Testing Service
- Mahidol Witthayanusorn School (Public Organization) (Science-based school)
- National Scout Organization of Thailand
- Office for National Education Standards and Quality Assessment (Public Organization)

1.3 Training Systems and Learning Pathways

In order to ensure lifelong learning, training is offered not only by MOE providers, but also by almost every organization related to workforce development. Such organizations offer pre-service, in-service and on-the-job training for their staff. Furthermore, MOE was established Public and Private Committee for Education in order to provide guidelines for competency-based curriculum development, teacher training, and the teaching and learning process. Additional training through the Education to Employment (E to E) Programme is also provided for graduates of TVET in order to up-skill them in relevant fields and provide them with a possible career path. Various training programmes are also provided for those who are already in the workplace and need re-skills and up-skills programmes as well as further qualifications.

Training System

The training system in Thailand was mainly established for those out of the schooling system (15 years old and over) by the Ministry of Education (MOE). The learning pathways for those who completed training programmes are provided through non-formal and informal education, as well as open learning, up to Higher Education Qualifications.

Ministry of Labour (MOL) is also the main governmental agency responsible for vocational training and the National Skill Standards Certificate and recognized as a part of vocational and technical education qualifications.

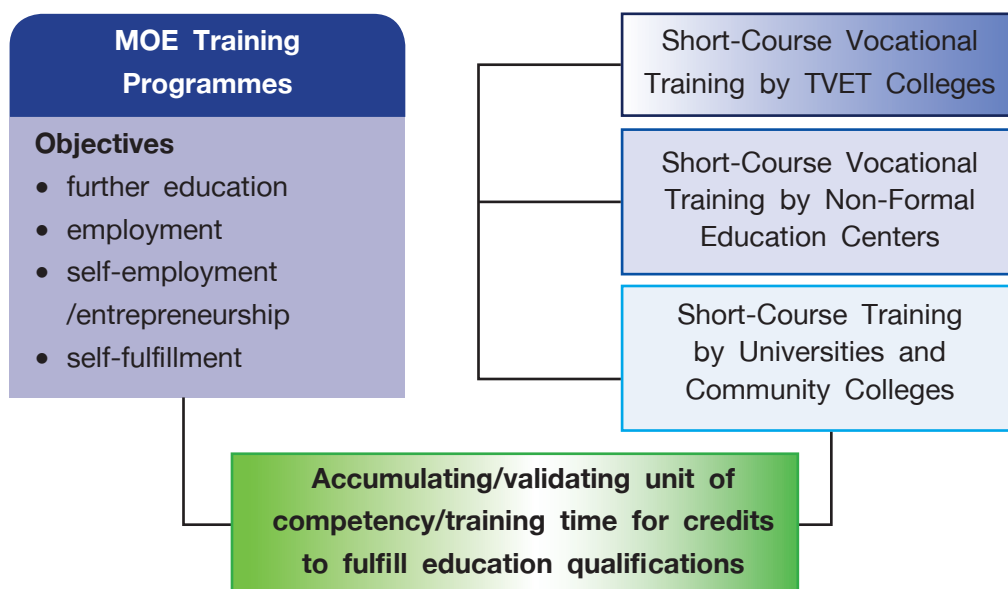
The Thailand Professional Qualification Institute (Public Organization) (TPQI), under the revised Royal Decree of 2019, plans to support and enhance the competency-based training courses against its occupational standards. TPQI encourages training providers to receive training before going for a competency assessment by an assessment center.

However, other government ministries, such as the Ministry of Industry, the Ministry of Agriculture and Cooperative, the Ministry of Tourism and Sports, the Ministry of Social Development and Human Security, the Ministry of Interior, the Ministry of Public Health and others also provide training in related areas. The specialized training programmes are also conducted for the public for up-skills or re-skills for the private sector and other public agencies. Those who completed training programmes can transfer units of competency in related fields for education qualifications.

Training Programmes by Education Institutes

For education institutes, the training courses are offered mainly by TVET colleges under the supervision of the Office of the Vocational Education Commission (OVEC), the Non-Formal Education Centers under the Office of the Non-Formal and Informal Education, universities and community colleges.

Figure 4: Training Programmes by Ministry of Education



• Short Course Vocational Training by TVET Colleges

The short courses in vocational training offered by TVET colleges under the Office of the Vocational Education Commission (OVEC) is flexible in terms of aspects such as models, duration and delivery system, but need to be aligned with the objectives of national standard, measurements, and evaluation for training achievement. The content and curriculum must be appropriate and respond to the problems and needs of the individuals in each group and community. The short courses in vocational training programmes have four objectives, based on the needs of trainees: further education, employment, self-employment or entrepreneurship, and self-fulfillment. Some credits of the training programmes can be accumulated for education qualifications in order to provide a learning pathway for trainees who wish to study at a higher level.

The education institutions are independent in designing and authorizing the training programmes according to National Vocational Education and Training Qualifications Framework through cooperation in the workplace and the community. The design of the programmes take into consideration the benefits of developing quality of life, having supplementary careers, changing careers, developing careers, attending professional qualification standard tests, attending labour skill standard tests, and continuing education at the level of a vocational certificate, technical diploma, and bachelor of technology programmes. The short courses of vocational programmes are required to contain at least one unit of competency with at least six hours of training, and issue specialized vocational certificates to graduates. Each unit of competency from a training programme can be accumulated for credits of related qualifications.

- **Short Course Vocational Training by Non-Formal Education Centers**

Non-Formal Education centers, under the Office of Non-Formal and Informal Education are located in every province and district, especially in rural areas, providing vocational training programmes for adults or youngsters who would like to develop life skills for self-fulfillment, self-employment and education qualifications.

The short courses of vocational training programmes are also offered as part of accumulative credits to fulfill requirements for education qualifications to level 3 of NQF or a vocational education certificate.

- **Short Course Training by Universities and Community Colleges**

Academic service is a mission of every university and community college. Therefore, training courses in related fields or needs of the community are offered by universities. For example, technology universities mainly offer new industrial technology training programmes while universities specializing in agriculture deliver training programmes in related field. The community colleges also offer short-course of vocational training to the community, especially in rural areas.

Table 8: Number of Trainees Attending Educational Institutes Training Programmes (2016 – 2017)

Institution/Agency	Number of Trainees	
	2016	2017
TVET Colleges	219,007	282,991
Community Colleges	19,350	27,019
Non-Formal Education Centers	1,886,823	3,072,538
Total	2,125,180	3,382,548

Source: Education Statistics, 2018, Office of the Education Council

Table 8 shows the number of trainees classified by Educational Institutes during 2016 – 2017. For TVET and Community Colleges, training programmes mainly focused on level 1 to 3 of NQF, which can be counted for further education qualifications. For Non-Formal Education Centers, there are not only a lot of programmes on life quality improvement, but also opportunities for learners to further their education for secondary and vocational qualifications.

Training Programmes by the Department of Skill Development, Ministry of Labour

The functions of the Department of Skill Development (DSD) are to develop the skills of workforce as well as coordinate and encourage their capacity development to meet standards and be recognized at international level and competitive at global stage. DSD has three main responsibilities: organizing skill training programmes; setting skill standards and testing; and promoting skill development in the workplaces. The National Skill Standards Framework from level 1-8 are under the umbrella of NQF. Those with skill standards at any level are able to validate and transfer to education qualifications (details in Annex 8).

• Labour Force Skill Training

Labour force skill trainings are conducted for newly-employed staff to upgrade their working skills in correspond with the changing technology and market needs. The trainings are also conducted for employees who are getting laid off, unemployed, and persons changing jobs. The objectives of trainings are to resolve shortage of skill and quality workforce to meet the market needs. There are three types of training courses: Pre-employment Training, Upgrade Training, and Re-training.

- 1. Pre-employment Training:** The training is for the trainees who want to have a job; boosting performances of workforce in line with standards of each occupational field; training and producing new skilled labour which is highly demanded by labour market and industry or service sector of the country; improving knowledge, ability, and attitude toward the career; and finally cultivate work appreciation and required characteristics for basic work performance.
- 2. Skill Upgrade Training:** It is a skill training to increase knowledge, ability, and skill of workforce leading to higher work competency. The objectives of this kind of training are to upgrade skills of workforce in any occupational fields in order to respond to the market needs and technological progress; boost knowledge, ability, and skills for work; and promote and support regularly self-development of workers. The training, with the fixed time duration, is conducted for employed or unemployed persons having work experiences. The trainees must have basic knowledge, ability, and skills in relation to occupation fields.
- 3. Re-training:** It is a skill training to increase knowledge and ability in occupational fields other than the current job of the trainees. The objectives of the training are to give workers an opportunity to get other jobs in accordance with their abilities and interests. The trainees can do other jobs in parallel with their current job or change their job. The unemployed persons have a better chance for a new job. The training enhances self-development of employed and unemployed persons for getting new jobs.

- **Skill Standards and Testing**

The skill standards are academic rules for measuring the level of skills, knowledge, ability, and work attitude of the workers. The standards are used for testing the competencies. The skill standards, in line with the Skill Development Promotion Act B.E. 2545 (2002), are divided into 2 following types:

- 1. National Skill Standards and Testing Method** (as indicated in Section 22 of the Skill Development Promotion Act B.E. 2545 (2002)) was prepared by the Sub-Committees on the National Skill Standards of different occupation fields. The Sub-Committees comprises key stakeholders, professional associations, education institutes, experts, representatives of employers and employees. The Committee on Promotion of Skill Development approves the appointment

of each Sub-Committee and prepares the National Skill Standards and testing methods which are promulgated in the Government Gazette. At present, the Skill Standards are adjusted to be in line with 8 levels of NQF.

2. Skill Standards of Workers (as indicated in Section 26 of the Skill Development Promotion Act B.E. 2545 (2002)) encourage companies or professional associations to set skill standards in response to their needs. These standards can be used to test specialized target groups of companies or professional associations. As a result, the companies or professional associations would be certified by the Committee on Promotion of Skill Development. After getting certified, they could receive a subsidy from the Skill Development Fund supervised by the Department of Skill Development. At present, 245 occupations are indicated skill standards.

- **Promotion of Skill Development in Workplace in line with the Skill Development Promotion Act B.E. 2545 (2002)**

This Act is the law encouraging private sector to develop workforce skills in response to market needs. There are tax incentives for companies that conduct training for new employees, laid-off employees as well as allowing apprenticeship for students in workplace. The workplace can get 100% deduction for their training expenses before tax calculation. This encourages private companies to develop their employees. The companies employing more than 100 workers must organize annual trainings for at least 50% of their total employees. If not, they must return the subsidy to the Skill Development Fund according to the proportion of subsidy rates and the number of employees, who did not attend skill development trainings. The operation result of DSD is displayed in Table 9.

Table 9: Number of Trainees Attending DSD Training Programmes (2014 – 2017)

Year	Number of people		
	People passing labour skill training	People passing the test	People promoted for labour skill development
2014	193,195	42,990	4,220,799
2015	200,739	36,910	4,456,177
2016	214,176	72,025	3,809,648
2017	209,982	77,344	3,978,493
Total	818,092	229,269	16,465,117

Source: Plan and Information Division, 2018, Department of Skill Development

Table 9 presents the number of people attending the programmes of the Department of Skill Development from 2014 to 2017. There were increasing number of people passing labour skill training from 193,195 in 2014 to 209,982 in 2017, and people passing the test from 42,990 in 2014 to 77,344 in 2017. The people who passed the test were different from those with passing skill training. Those who underwent training in the company were not be required to take the DSD test. However, the total number of people who received a promotion in labour skill development from DSD decreased from 4,220,799 in 2014 to 3,978,433 in 2017. This was a results of the needs and requirements of the industry.

Training Programmes by Thailand Professional Qualification Institute Public Organization)

The Thailand Professional Qualification Institute (Public Organization) or TPQI is a public organization working under the supervision of the Prime Minister, established under the Royal Decree on the establishment of the Thailand Professional Qualification Institute and published in the Royal Thai Government Gazette on 30 March 2011. TPQI has the mandate and the mission to develop the national professional qualifications system, set internationally comparable occupational standards, certifying the assessment centers responsible for individuals in accordance with occupational standards and maintaining a data base system of professional qualifications.

TPQI has developed more than 700 occupational standards, representing 1,900 professional qualifications in 55 sectors to respond to government policies on economy, society and quality of life in the aspect of educational policies. In order to ensure that these professional and occupational standards are implemented, a revised Royal Decree was issued in May 2019 which allowed TPQI to support and offer training programs or competency-based curriculum mapped to occupational standards in order to train the workforce to acquire the competencies sought by employers and industry or to re-skill or up-skill learners or workers. With this new mission, TPQI will enhance and strengthen the whole cycle and mechanism of workforce development.

Recognition of Prior Learning/Training and Experience

In transferring knowledge and experiences for Vocational and Technical Education qualifications, Office of the Vocational Education Commission (OVEC) has developed a system of validating or recognizing knowledge and experiences by subjects for the workers who would like to acquire formal education qualifications. After the validation process is completed, additional training programmes will be developed for every individual, different and shorter than those with extensive work experience and to obtain qualifications without undergoing formal education. This is to certify their knowledge and skills; and this is an encouraging mechanism of continuing self-development for career advancement. The transfer could be credit transfer, or recognition of prior learning.

There are many formalities of transfers between education qualifications and occupation qualifications, as follows:

- (1) Referencing between education qualifications and occupational qualifications.
- (2) Referencing occupation qualifications with subjects or subject clusters in the curricula of education institutions for faster graduation.
- (3) Referencing prior learning derived from informal education or non-formal education with occupation qualifications.
- (4) Referencing occupation qualifications with those of ASEAN and international.

In other words, within the NQF umbrella, occupational qualifications can be validated or transferred to education qualifications. At the same time, education qualifications can be referenced to occupational standards for employment and further vocational study.

Learning Pathways of Education and Training

In terms of learning pathways, there is a linking mechanism of the three qualification sub-sector systems and training of various agencies responsible for education and training provision. The implementation was conducted through the system of learning outcome accumulation and transfer (credit transfer) as well as the system of experience accumulation and validation (prior learning) as follows:

Figure 5: NQF Levels and Qualifications Sub-Framework

NQF Levels	Education (Formal Education)			Training		Lifelong Learning (Non-Formal and Informal Learning and Training)
	Sub-Qualifications Framework			Sub-Qualifications Framework		
	Basic Education	TVET	Higher Education	Occupational Standards Levels	National Skill Standards Levels	
8			Doctoral + Post Degree	8	8	<ul style="list-style-type: none"> • Credit Transfer System • Recognition of Prior Learning (RPL) • Recognition of Current Competency (RCC) • Accreditation of Training
7			Higher Graduate Dip. / Master Degree	7	7	
6		Bachelor Degree of Technology	Graduate Dip. / Bachelor Degree	6	6	
5		Technical Diploma	Associate Degree	5	5	
4				4	4	
3	Upper Secondary +Voc. Skill	Vocational Certificates		3	3	
2	Upper Secondary			2	2	
1	Lower Secondary			1	1	
Linkages Mechanism	<ul style="list-style-type: none"> - Comparing, Transferring and Accrediting of Credits or Qualifications - Testing and Assessing Skills or Competencies - Additional education and training modules 					

Figure 5 presents the overview of NQF levels and its qualifications sub-frameworks which includes education (responsibility of the Ministry of Education), occupational standards (responsibility of the Thailand Professional Qualification Institute), and national skill standards (responsibility of the Department of Skill Development).

At present, the credit transfer system from training, non-formal and informal education, as well as Recognition of Prior Learning (RPL) are actively provided up to level 6 or a Bachelor's degree qualification. Furthermore, DSD is responsible for NSS, which is actively implemented from levels 1 to 5. Levels 6 to 8 are developed for implementation in some occupational areas needed in the future. The details and their linkage mechanism are elaborated in criterion 3. Additional education and training are

required for those who need to fulfill educational or occupational qualifications. This is to ensure quality of education, training relevant to manpower demands and the facilitation of lifelong learning.

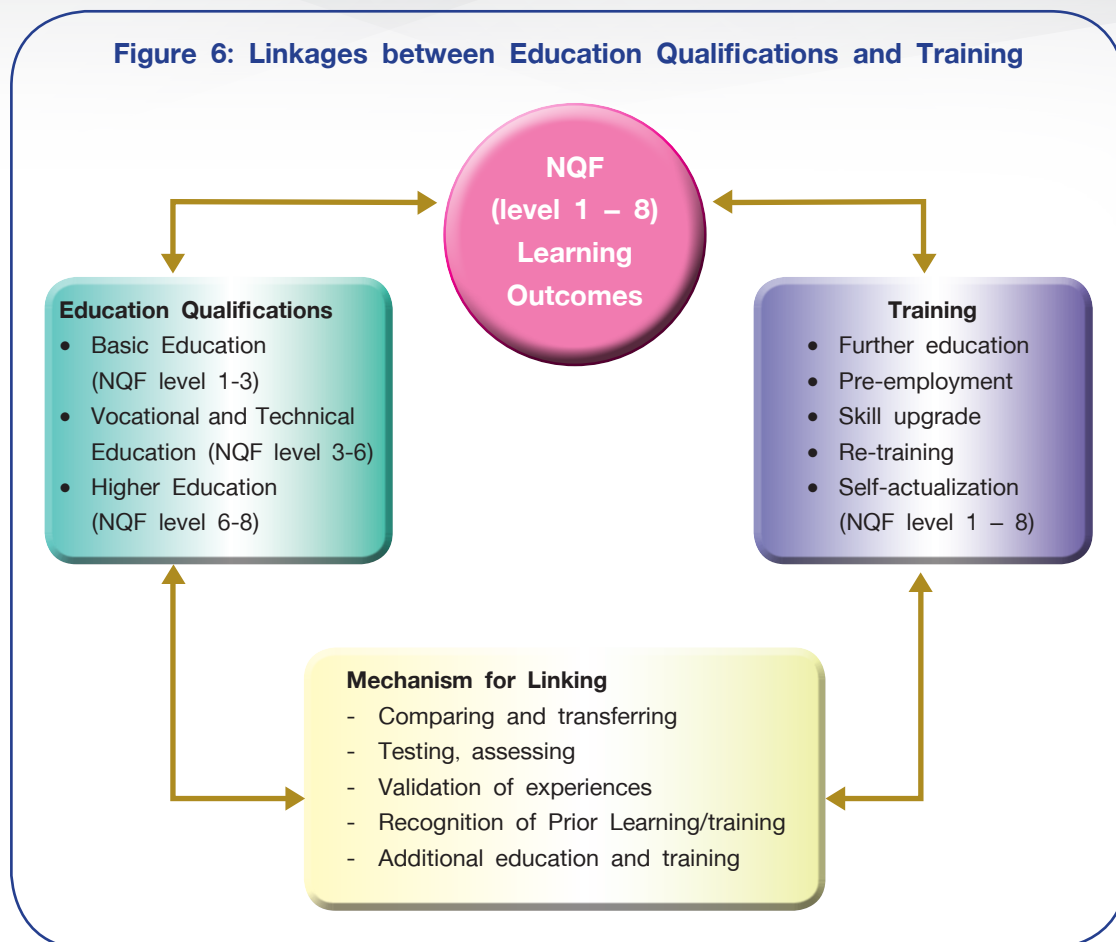


Figure 6 shows details of the linkages between education qualifications and training which include further education, pre-employment, skill upgrade training, re-training, and self-actualization. At each institution, a committee is established for assessment purposes and to provide learning pathways for learners. If an individual gains competencies from training programmes or experiences aligned with learning outcomes at a certain level of education qualifications, they will be assessed and facilitated with additional education or training for qualifications. Actually, this process has been put in place in same program of study for long time but needed to be expanded and strengthened.

On the other hand, those who have education qualifications which partly cover competencies aligned with occupational standards, they will be recognized for occupational qualifications after additional training and assessment.

It is clear that the education and training systems are linked under NQF learning outcomes according to the mechanism presented in Figure 6, and include comparing, transferring, testing, assessing, validation of experience, recognizing of prior learning, and additional education and training.

1.4 Current and Future Reforms

Thailand has developed education reform process according to the Thailand's 20 Year National Strategy B.E. 2561 – 2580 (2018 – 2037) and Education Reform Plan (2019 – 2022). The focus of this plan is human resource development related to education, training, NQF, and AQRF, as follows.

- Strengthen qualification design and the learning process according to NQF to facilitate 21st century skills with improvement of the curriculum, learning and assessment processes through competency-based and learning outcomes approach.
- Capacity building of teachers to be come “facilitators or coaches” to ensure quality in implementing the revised curriculum with various methods of learning, such as STEM Education, Project-Based Learning, Blended Learning, Constructionist Learning, Work-based Learning, etc.
- Improve education management at every level, especially in terms of an organized partnership for education quality improvement and learning delivery system with all stakeholders in order to achieve NQF learning outcomes.
- Enhance lifelong learning in order to prepare new graduates and the existing workforce for global competitiveness and disruptive technologies and to re-organize recognition of experience and training systems to facilitate lifelong learning.
- Develop digital platform for learning process to widen participation of those out of schooling system who need qualifications and enhancement of skills and knowledge.
- Focus on competency-based education and training according to NQF for quality improvement of the education and training system.
- Internationalize education and training by promoting the use of international standards for qualifications development in order to promote the mobility of education and workforce in the region smoothly through AQRF.
- Plan for the development of the Digital Learning Platform and database on qualifications among ASEAN member countries.

Criterion 2 :

National Bodies Involved in Referencing

The responsibilities and legal basis of all relevant national bodies involved in the referencing process are clearly determined and published by the main public authority responsible for the referencing process

Presently, Thailand is in the process of implementing the National Qualifications Framework (NQF) and AQRF referencing process. The NQF is considered to be an important tool for education reform and human resource development. The Ministry of Education by the Office of the Education Council is the main agency responsible for mobilizing the NQF and AQRF referencing process under the National NQF Committee. There were five Sub-Committees established in order to facilitate referencing from NQF to AQRF. The details of the NQF Committee and Sub-Committee responsible for NQF and AQRF are provided in the following sections:

2.1 The National Qualifications Framework Committee

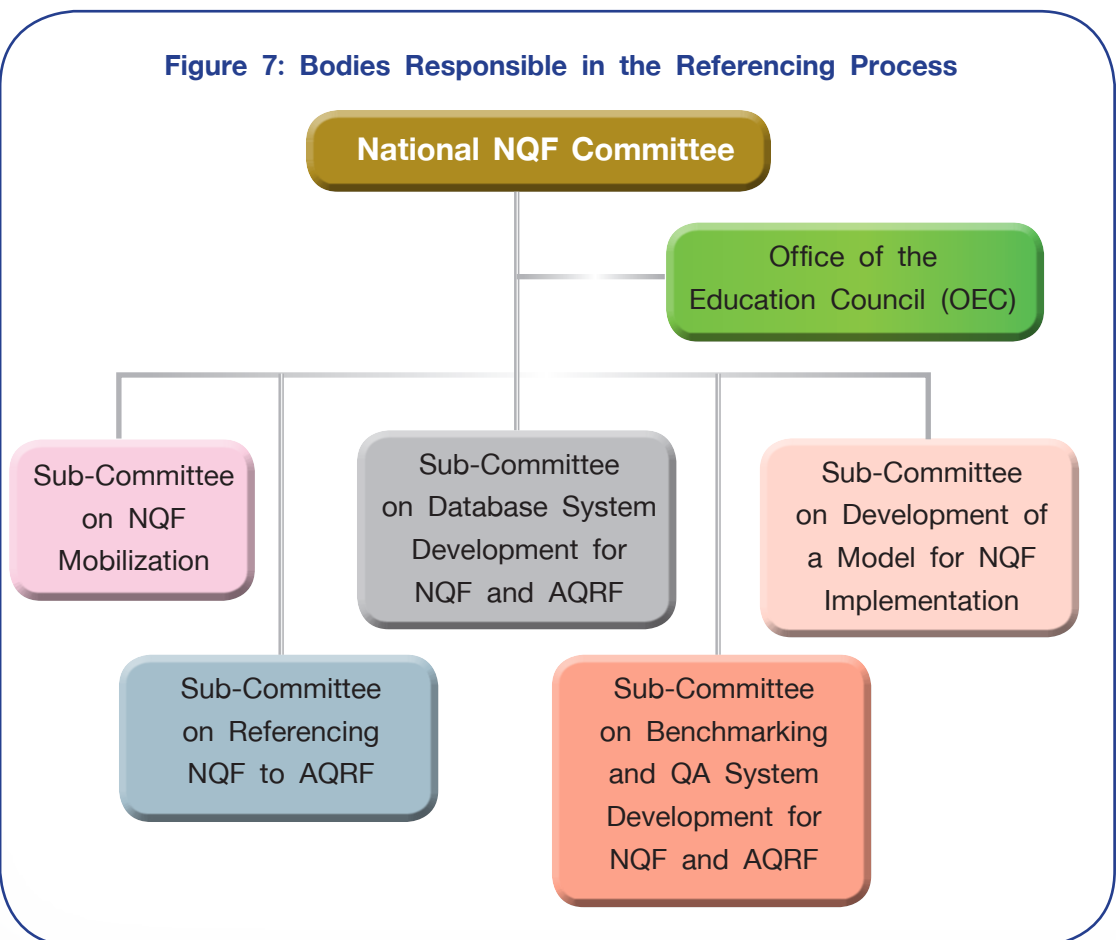
In order to enhance the implementation of Thailand NQF, the Committee on the National Qualifications Framework (NQF Committee) was appointed according to a cabinet resolution on 2 August 2016, and the Deputy Prime Minister served as Chairperson.

The NQF Committee is comprised of 33 members from both the public and private sectors (industrial and business sectors), and the Office of the Education Council (OEC) serves as the Secretary of the Committee. The details of the National NQF Committee are shown in Annex 1 and the mission of other sub-committee is in Annex 2.

For the purpose of mobilizing the NQF and AQRF referencing process, the National NQF Committee has appointed five sub-committees responsible for different tasks and mandates as follows:

1. Sub-Committee on NQF Mobilization
2. Sub-Committee on Referencing NQF to AQRF
3. Sub-Committee on Database System Development for NQF and AQRF
4. Sub-Committee on Benchmarking and Quality Assurance System Development for NQF and AQRF
5. Sub-Committee on Development of a Model for NQF Implementation

Figure 7: Bodies Responsible in the Referencing Process



The NQF Committee acts as a national committee with the authority to encourage cooperation among agencies from inside and outside the Ministry of Education and the private sector. The Committee has the following duties:

1. Formulate policies and measures to enhance NQF implementation
2. Strengthen the use of occupational and skill standards in the education system
3. Promote lifelong learning through various methods such as credit bank, validation of experience, and open-entry/open-exit education system, etc.
4. Develop information system on the implementation of NQF
5. Develop linkages between NQF and AQRF and other international standards
6. Make decision on the AQRF referencing process in Thailand
7. Scrutinize and approve an AQRF referencing report before submitting to the Cabinet for endorsement

2.2 Sub-Committee on Referencing NQF to AQRF

The Sub-Committee on Referencing NQF to AQRF was appointed on 22 May 2017 by the Deputy Prime Minister, comprised of 21 members, and mainly from five qualification sub-sector authorities. The Sub-Committee had the following mission:

- To develop strategies and plans for referencing NQF to AQRF, according to the policies and guidelines of the National NQF Committee
- To implement the process of referencing NQF to AQRF
- To draft a AQRF referencing report for submission to the NQF Committee and AQRF Committee
- To perform other tasks assigned by the NQF Committee

The composition of the Sub-Committee on Referencing NQF to AQRF is shown in Annex 3.

2.3 Office of the Education Council

The Office of the Education Council (OEC) serves as the main secretariat of the National NQF Committee for supporting, promoting and coordinating with related agencies. The responsibilities of the OEC are as follows:

- To serve as a central authority for coordinating with all agencies involved in the NQF and AQRF referencing process

- To act as the secretariat of the National NQF Committee and Chair of AQRF Sub-Committee on Referencing NQF to AQRF
- To serve as Thailand's representative on the AQRF Committee
- To organize meetings, seminars, and workshops for the National NQF Committee and Sub-Committee on Referencing NQF to AQRF
- To formulate policies and implementation plans to enhance linkages between educational qualifications and occupational standards according to NQF
- To develop a referencing system between NQF and AQRF for consideration of the National Committee
- To raise public awareness about NQF and AQRF
- To develop and enhance the quality assurance system of NQF referencing to AQRF
- To develop a database relevant for NQF and AQRF
- To monitor and evaluate NQF and AQRF implementation

2.4 Five Qualifications Sub-Sector Authorities

The AQRF referencing process involves the five following qualification sub-sector agencies:

1. Office of the Basic Education Commission (OBEC)
2. Office of the Vocational Education Commission (OVEC)
3. Office of the Higher Education Commission (OHEC)
4. Department of Skill Development (DSD), Ministry of Labour
5. Thailand Professional Qualification Institute (Public Organization) (TPQI)

The representatives from the five sub-sectors participated in AQRF referencing process through several workshops and meetings in order to enhance their understanding of referencing of NQF to AQRF. Finally, they can bring back what they learned to develop learning outcomes for their qualifications and in alignment with the NQF and the AQRF. The roles of five qualification sub-sector authorities and their main related laws and regulations are shown in Annex 4.

2.5 Other Related Agencies

As previously mentioned, in Thailand, in addition to the five qualification sub-sector authorities, there are other relevant agencies, which includes the Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA) and the Industrial/Business Sector involved in NQF and AQRF referencing process.

Office for National Education Standards and Quality Assessment (Public Organization)

The Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA) is an agency responsible for external quality assurance; with a main responsibility on the development of the system in terms of procedures, standards and criteria of effective and aligned external quality assessment.

In the AQRF referencing process, the representatives of ONESQA assist in providing guidelines, comments, and related issues regarding a quality system for the referencing process and to ensure the existing qualifications and quality assurance system in the country. The details of the Thailand education quality assurance system are described in Criteria 6.

Industrial and Business Sector

The representatives of Federation of Thai Industry, Chamber of Commerce, and Tourism Council of Thailand are involved in the AQRF referencing process through the National NQF Committee and Sub-Committees. However, representatives from various industrial and business sectors are also involved, including digital technology, logistics, food and agriculture, petroleum and petrochemicals, electricity and electronics, automotive, mold and die, automation, and robotics are also involved in the process of referencing and public hearing. They are responsible for providing advice and guidelines in the implementation of NQF and the referencing process of AQRF. They also actively engaged in the following activities:

- Identify manpower requirements, competency and education qualifications in each educational sub-framework
- Link levels of competency with education qualifications and proposed levels descriptors of NQF and referencing to AQRF level
- Provide alternatives for decision-making on core descriptors of each level of the NQF and AQRF
- Locate the NQF level learning outcomes in AQRF



Criterion 3 :

Inclusion of Qualifications in the National Qualifications Framework

The procedures for inclusion of qualifications in the national qualifications framework or for describing the place of qualifications in the national qualifications system are transparent

The main objectives of the NQF are to consolidate five qualification sub-frameworks, made up of three education qualifications sub-sectors and two occupational standards and qualifications sub-sectors. In the NQF, education qualifications are linked with occupational standards and qualifications in order to reform education for employment and to expand the learning pathway for those who are outside the school system. Training, non-formal and informal learning for lifelong learning are also extended through NQF. Therefore, the learning outcomes of each qualification are an integral component for inclusion in NQF.

3.1 Process of NQF Development

The process of developing NQF was undertaken by the NQF Working Committee, made up of the OEC and representatives from five agencies of qualifications sub-sectors: ONESQA, the Federation of Thai Industries, the Thai Chamber of Commerce, and the Tourism Council of Thailand. The Working Committee on the NQF that was previously mentioned was appointed for the purposes of the review, revision, and development of the NQF. It took about one year and the process of NQF development is as follows:

Phase 1: Preparation

- Study articles and research concerning the development of NQF at both the national and international level
- Organize international seminars on NQF to learn the experiences of other countries
- Participate in international conferences and study visits
- Collect information on education qualifications, occupational standards and concerned agencies in Thailand

Phase 2: Planning

- Organize meetings with all concerned agencies to share knowledge and experience with NQF and seek agreement on NQF development
- Work with all concerned agencies in drafting a plan for NQF development and implementation

Phase 3: Development and Social Involvement

- Several meetings were organized with leaders and members of the main 13 occupational groups from the private sector in order to review the levels of workforce competencies and qualifications needed and submit the information to the Working Committee
- Working Committee on NQF analyzed information on the required levels of workforce competencies, compared and linked with learning outcomes at each level of education qualifications
- The linkages between all levels of the workforce needed competencies and levels of education qualifications, which were summarized in the first draft of NQF
- The first draft of NQF was reconfirmed with 13 occupational groups and all stakeholders, including teachers, administrators, employers, and employees at the second meeting and the content of linkages was adjusted to a base on the feedback
- DSD and TPQI adjusted their levels of skill standards and occupational standards in relation to the learning outcomes at each level of NQF
- NQF Working Committee provided feedback, comments, and consideration of DSD and TPQI levels, and the descriptors in the NQF
- Draft Thailand NQF through linking all education qualifications and occupational and skill standards was made by the NQF Working Committee. Its approval was sought by the National NQF Committee

- Public hearings and general assembly were held with all stakeholders throughout the country in four regions to provide feedback on the impact of NQF, as well as opinions and suggestions to revise the draft NQF
- Working Committee on NQF considered the draft NQF and provided feedback on how to revise the draft NQF after a public hearing
- The final draft NQF was submitted to the National NQF Committee for consideration before seeking approval from the Cabinet. On 18 April 2017, the Cabinet approved the revised edition of NQF

Phase 4: Implementation and Evaluation

- Publish “National Qualifications Framework” document and disseminate to all related stakeholders for knowledge and understanding of NQF
- Develop NQF Mobilizing Plan and seek approval from the National NQF Committee
- Designate NQF Sub-Committees to drive NQF Mobilizing Plan
- Encourage educational and occupational agencies to drive NQF in accordance with the NQF Mobilizing Plan
- Follow up the education agencies and occupational agencies in driving NQF
- Develop a model of NQF implementation in seven areas of occupation by working in cooperation with all stakeholders
- Disseminate developed model of NQF implementation to the public for better understanding and operation
- Monitoring and evaluation

3.2 Locating Qualifications in NQF

There are two steps in locating qualifications in the NQF, as mentioned below:

Step 1: Process of Aligning the Sub-Framework to NQF

The NQF was organized to ensure that the five qualifications sub-frameworks were different in terms of purposes and qualifications. Their respective level descriptors and learning outcomes are comparable, linked or similar. The details are shown in Annex 5 and Annex 6. As previously mentioned, Thailand has a sub-framework with levels of five qualifications. Therefore, each responsible agency would map its qualifications against the NQF learning outcomes.

Figure 8: Thailand NQF

Educational Qualifications			NQF Levels	Occupational Standards/Qualifications	
Basic Education	Vocational Education	Higher Education		Professional Qualification Level	National Skill Standards/Occupational Standardards
		Doctoral Degree	Level 8	PQ 8	NSS 6
		Higher Graduate Dip./Master Degree	Level 7	PQ 7	NSS 5
	Bachelor Degree of Technology	Graduate Dip./ Bachelor Degree	Level 6	PQ 6	NSS 4
	Diploma in Technical Education	Associate Degree	Level 5	PQ 5	NSS 3
			Level 4	PQ 4	NSS 2
Upper Secondary + Vocational Skill	Vocational Education Certificate		Level 3	PQ 3	NSS 1
Upper secondary			Level 2	PQ 2	OS 2
Lower secondary			Level 1	PQ 1	OS 1

Figure 8 shows the relationship between the five qualifications sub-frameworks to NQF. Since Thailand has nine years of compulsory education, it is expected that everyone would receive at least nine years of basic or lower secondary education before entering the world of work. Therefore, Thailand NQF starts at lower secondary education or level one. The Basic Education Qualification Framework includes 3 levels; 1, 2, and 3. It is worth noting that for those who completed upper secondary education or 12 years of education, their qualifications are at level 2. If they are trained and competent in one vocational skill in TVET system, they qualify for level 3 of NQF. Vocational Education Qualifications are in levels 3, 4, 5, and 6 of NQF while Higher Education Qualifications have learning outcomes in levels 4, 5, 6, 7, and 8 of NQF.

Linking occupational standards and qualifications with each level of education qualification is comprehensive because the learning outcomes of occupational standards or qualifications have been already identified at each level and aligned with the NQF. However, when a learner acquires a professional qualification, it does not mean that they automatically receive an education qualification. There are

mechanisms for testing, recognizing, validating, and filling-up with additional training or education for qualifications. In other words, learning pathways are available to those who have attained occupational standards and qualifications.

TPQI and DSD have developed qualifications and skill standards up to level 8 in consultation with employers and stakeholders. Occupational qualifications and skill standards levels are varied and rely on the nature of each occupation. However, for DSD qualifications sub-framework, there are active delivery from levels 1 to 5. Levels 6 to 8 are currently in development for future implementation. It is worth noting that education qualifications have fixed levels in NQF. For example, TVET qualifications are in Levels 3, 4, 5, and 6 of the NQF, while higher education qualifications are in Levels 4, 5, 6, 7 and 8. They differ from Professional Qualification (PQ) and National Skill Standards (NSS) which may cover levels 1 to 8.

Methodology

There are two approaches used in comparing and locating sub-sector qualification learning outcomes in NQF.

1. **Linguistic analysis** is the process of language technical analysis or descriptor text analysis.
2. **Social analysis** is the process of providing common understanding among all stakeholders and partners in referencing process and collect feedback and information on comparing and locating the learning outcome levels of each sub-sector qualifications in NQF.

Both linguistic analysis and social analysis were implemented and information was integrated in order to locate the learning outcomes.

Rules and Process

The rules and processes for locating qualifications in NQF are set by the NQF National Committee, as follows:

1. Each level of domain descriptors and the learning outcomes of qualification sub-sectors should comply with a minimum of 80% with NQF learning outcomes levels by linguistic and social analysis.
2. Five qualification sub-sector committees analyse and locate their domain descriptors and learning outcomes in each level of qualifications and are aligned with NQF levels, descriptors, and learning outcomes. The adjustment of learning outcomes can be made, if necessary.

3. The results of locating qualification levels in NQF must be approved by their authorized agencies or bodies, such as National Skills Development Board, Vocational Education Commission, Higher Education Commission, TPQI Governing Board, etc.
4. The National NQF Working Committee aligned the five qualifications sub-sector in NQF and sought approval from the National NQF Committee.
5. Each authorized agency responsible for the qualifications sub-framework developed a quality assurance system for the implementation and monitoring of qualifications, according to NQF.

Education Qualifications

Basic Education Qualifications

The learning outcomes of basic education qualifications were compared and linked to the learning outcomes of level 1 and 2 in NQF, as follows:

- Lower Secondary Qualification: level 1 in NQF
- Upper Secondary Qualification: level 2 or level 3 (plus vocational skill) in NQF

Technical and Vocational Education Qualifications

Technical and Vocational Education Qualifications are divided into three levels in NQF and the learning outcomes of each qualification are linked with level descriptors in NQF, as follows:

- Vocational Education Certificate (three-year programme after lower secondary education qualification): level 3 in NQF.
- Technical Education Diploma (two-year programme after vocational certificate or upper secondary education qualification): level 4 or 5 in NQF (depending on areas of study which require different learning outcomes, for example; the aircraft maintenance technician qualification requires learning outcomes at level 5 because it is more complicated than that of the automotive maintenance technician qualification, which requires level 4. So, different learning times and experiences are required for level 4 and 5).
- Bachelor's Degree of Technology (two-year programme after completion of Technical Education Diploma): level 6 in NQF.

In order to fully comply with NQF, OVEC, which is responsible for technical and vocational education and training, implemented the new National Vocational Education Framework in early 2019. This framework was endorsed by the Minister of Education, which includes qualifications, related rules and regulations and a quality assurance system.

The process of referencing TVET learning outcomes into NQF was undertaken through several meetings and workshops. Learning outcomes of TVET qualifications are divided into four domains which included: (1) ethics, morals, and designed characteristics; (2) knowledge; (3) skills; and (4) application and responsibility. These four domains of learning outcomes are aligned with NQF learning outcomes.

Higher Education Qualifications

Higher Education Qualifications are divided into four levels, after linking and in comparison with the learning outcomes in NQF, as follows:

- Associate's Degree: level 4 and 5 in NQF (depending on the programme and the complexity of the programme)
- Bachelor's Degree and Graduate Diploma: level 6 in NQF
- Master's Degree and Higher Graduate Diploma: level 7 in NQF
- Doctoral Degree: level 8 in NQF

The Thai Qualifications Framework for Higher Education (TQF: HEd) was implemented in 2009 and has been continuously enhanced. In the process of referencing TQF : HEd to NQF, it was found that the three domains of learning outcomes of NQF covered five domains of learning outcomes of TQF: HEd. The five domains of TQF: HEd include the following: (1) ethics and morality; (2) knowledge; (3) cognitive skills; (4) interpersonal skills and responsibility; and (5) numerical analysis, communication, and information technology skills.

The TQF: HEd was developed with assistance of Australian Government and could be referenced to the international standards. The details on locating TQF: HEd in NQF is presented in Table 10. The Professional Bodies also play important roles in the identification of needed competency and accreditation.

Occupational Standards and Qualifications

The Professional Qualification Framework

The Professional Qualification Framework (PQF) was established by the Thailand Professional Qualification Institute (Public Organization) (TPQI). It is used as the main tool for assessing and certifying the performance of professional standards in order to meet the demands of the business and industrial sectors and industry, as well as a mechanism to link comparable qualifications in both the country and the international community.

The levels of the Professional Qualification Framework describes the rules of knowledge, skills responsibilities earned from the performance and level of innovation, depending on the difficulty level of the work in question. With regard to the change of the NQF from 9 to 8 levels, after several consultations with the stakeholders, public and the private sector, TPQI proceeded to review the framework step-by-step in order to assure that all stakeholders understand and acknowledge the importance of the benchmarking of the PQF to the NQF. The process has been implemented as follows:

1. Collaborated and worked with the New Zealand Qualification Authority (NZQA) and organized an expert workshop from 16-20 January 2017, with the main stakeholders to exchange ideas on the reviewed descriptors.
2. Studied and researched the referencing process and methodology to identify and analyse the NQF and the AQRF.
3. Analyse possible comparisons by using the linguistic analysis approach methodology between the NQF and the PQF and to analyse the domains of competency, key words and all significant descriptors.
4. Organized a public hearing among the main stakeholders represented by the related ministries, associations, employers and employees and other significant private stakeholders. The draft of 8 levels of the PQF has been proposed to the meeting on 30 May 2017, the feedback from the meeting allowed TPQI to have a fruitful and productive revision of the PQF.
5. The second draft has been proposed to the public on 12 June 2017 and the stakeholders agreed on the domains and descriptors as well as the learning and performance outcomes of the PQF.
6. The draft of PQF has been tabled to the TPQI Sub-Committee on Policy and Planning on 15 August 2017 and then to the TPQI Governing Board on 25 August 2017.

7. The PQF has been reported to the NQF committee by the Office of the Education Council on 8 December 2017.
8. The TPQI Board agreed to set the working group for the purpose of PQF pilot implementation with the industry and to disseminate understanding of the PQF.

The working group was officially set in November 2017 by TPQI consisting of representatives at the policy level from the following bodies:

- Office of the Vocational Education Commission, Ministry of Education
- Office of the Education Council, Ministry of Education
- Office of the National Economic and Social Development Council
- Department of Skill Development, Ministry of Labour
- The Federation of Thai Industries
- Mold and Die Association
- Thai-German Institute
- Language Institute, Chulalongkorn University
- IT Faculty, Ratchamangkala Thunyaburi University
- 2 Experts in the benchmarking and credit transfer
- TPQI Board Consultant
- TPQI Staff

The PQF was adjusted to be aligned with the descriptors of the NQF. The Linguistic Analysis approach has been applied to compare the descriptors at each level and then the Professional Qualification Framework was benchmarked with the NQF whereby; the meaning of core competencies or learning and performance outcomes has been considered. The harmonization at 80% is regarded best-fit (Annex 6). The study and analysis have been performed through all domains and not only with the NQF, but the AQRF as well as the Logistics and Mold and Die occupational standards. The results of the implementation was satisfactory to the industry.

TPQI has then tabled the successful outcomes of the pilot implementation with the industry to TPQI Governing Board in February 2018 and the Board agreed to implement the PQF with all of the occupational standards set by TPQI.

The harmonization is relatively high in percentage. Each level is comparable and regarded as best-fit. Therefore, the PQF is comparable with NQF on a level-to-level basis.

It is considered that the impact of relocating levels is low because there is nothing dramatically changed between levels. This is because the preliminary professional qualification framework levels (level 1 to 6) are focused on the basis of operating. On the other hand, high-level (level 7 to 8) qualification will be able to create new innovation, new ways to work or to invent new technologies in their career.

National Skill Standards

The Occupational Standards of the Ministry of Labour were divided into 8 levels to be in line with the NQF. There are two types of Occupational Standards of the Ministry of Labour: Occupational Standards (OS1 and OS2) are provided with basic occupational skills for those who would like to enter the world of work. OS1 and OS2 are referenced in NQF level 1 and level 2. The other six levels included the following: National Skills Standard (NSS1 – NSS6). They are more specialized skills in each occupation and their level descriptors are referenced in NQF levels 3 to level 8.

The level descriptors included knowledge, skills, and attitudes are covered in the level descriptors of the NQF (details in Annex 6). It was set up under the cooperation of the industrial sector and vocational education. After creating the overall framework to be in line with NQF, formal promulgation of the application of each level in each work field will be made law.

In formulation of definition in the referencing of the Ministry of Labour, the definition and levels of Occupational Standards (OS) and National Skill Standards (NSS) are made through the cooperation among the public, private, employer and employee organizations, as well as the educational sector, to jointly formulate definitions and skill levels according to the employment situation in the labour market and the NQF level descriptors. The revision and improvement of the NSS in various fields of occupation are also carried out in line with the NQF.

In formulation of the NSS in every field, the criteria and all definitions set by the Ministry of Labour through the referencing with NQF have been utilized in the identification, formulation, and implementation of national skill standards, as well as identification of qualification of applicants for skill testing, testing the contents of knowledge and capability of the testing procedures.

The Department of Skill Development in the Ministry of Labour submitted the definition of Referencing the NSS descriptors for approval by the National NQF Committee on 8 December 2017. This definition would be used for improvement of existing National Skills Standards and the new ones that were developed after 2018.

Step 2: Processes and Procedures by the Agencies Responsible for Five Qualification Sub-Frameworks

The processes and procedures to determine qualifications or standard levels within qualification sub-frameworks are described in the life cycle of NQF qualifications. Each qualification sub-framework authority will review and revise its qualification sub-framework according to NQF.

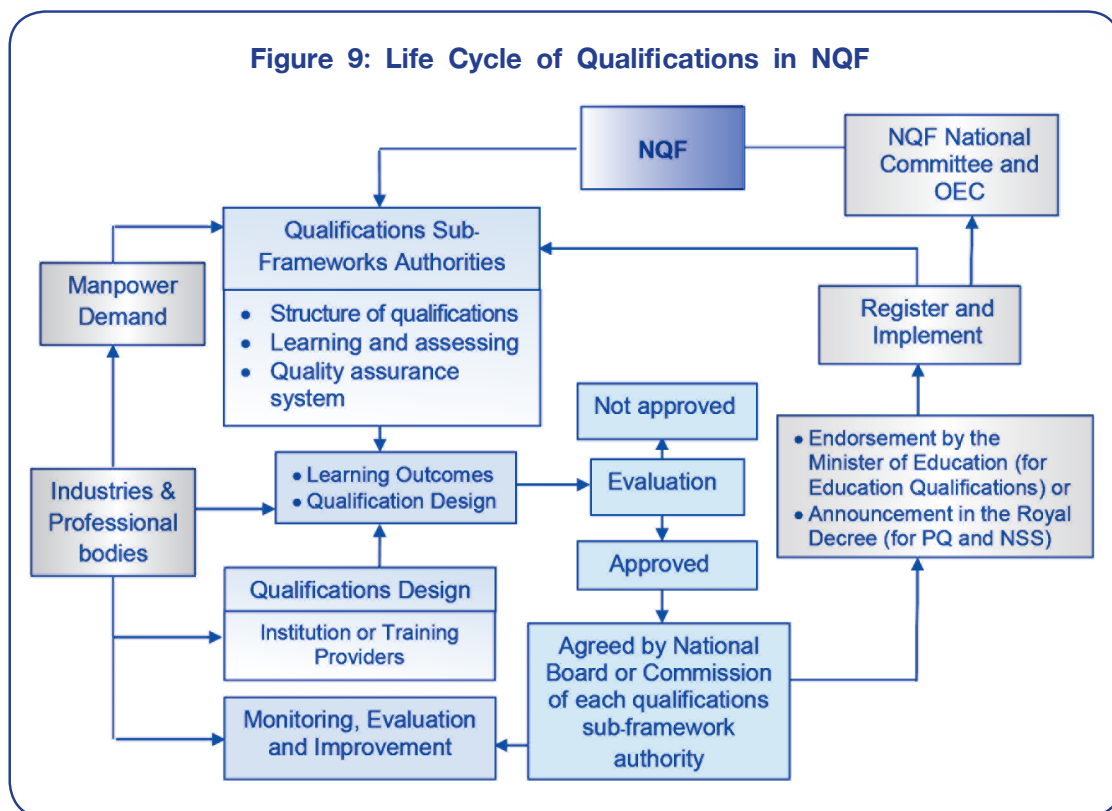


Figure 9 shows the Life Cycle of Qualifications under NQF, the qualifications framework are actually enforced by the Five Qualification Sub-Frameworks Authorities according to manpower demand, input from industries, professional bodies and occupational standards. The institutions or training providers work with their partners and design qualifications by benchmarking the learning outcomes of the related qualifications sub-framework. Each Qualifications Sub-Framework Committee consists of stakeholders who are responsible for evaluating the qualifications proposed by institutions or training providers, according to learning outcomes of qualifications before seeking approval from the National Board or Commission of each qualification sub-framework. Each qualification or standard is judged against the qualification sub-framework, which includes the structure of qualifications, learning and assessing, quality systems, manpower demand and industries and professional bodies, as shown in Figures 10, 11 and 12.

The approved education qualifications are endorsed by Minister of Education. The TVET and Higher Education Qualifications must be submitted to the Civil Service Commission for recognition. The occupational standards of TPQI (PQ) and DSD (NSS) are announced in the Royal Decree. The sub-sector qualification authorities monitor and evaluate these qualifications. The NQF Committee and OEC follow up and mobilize the implementation of learning outcome-based qualifications and other related issues for NQF in order to ensure quality of education and lifelong learning. According to the law, all qualifications must be reviewed, revised every five years or sooner if manpower, social and economic requirements warrant it.

Figure 10, 11, and 12 describe details of the life cycle of Basic Education Qualification, TVET Qualification, Higher Education Qualification, Professional Qualification and National Skill Standard.

Figure 10: Life Cycle of Basic Education Qualification in NQF

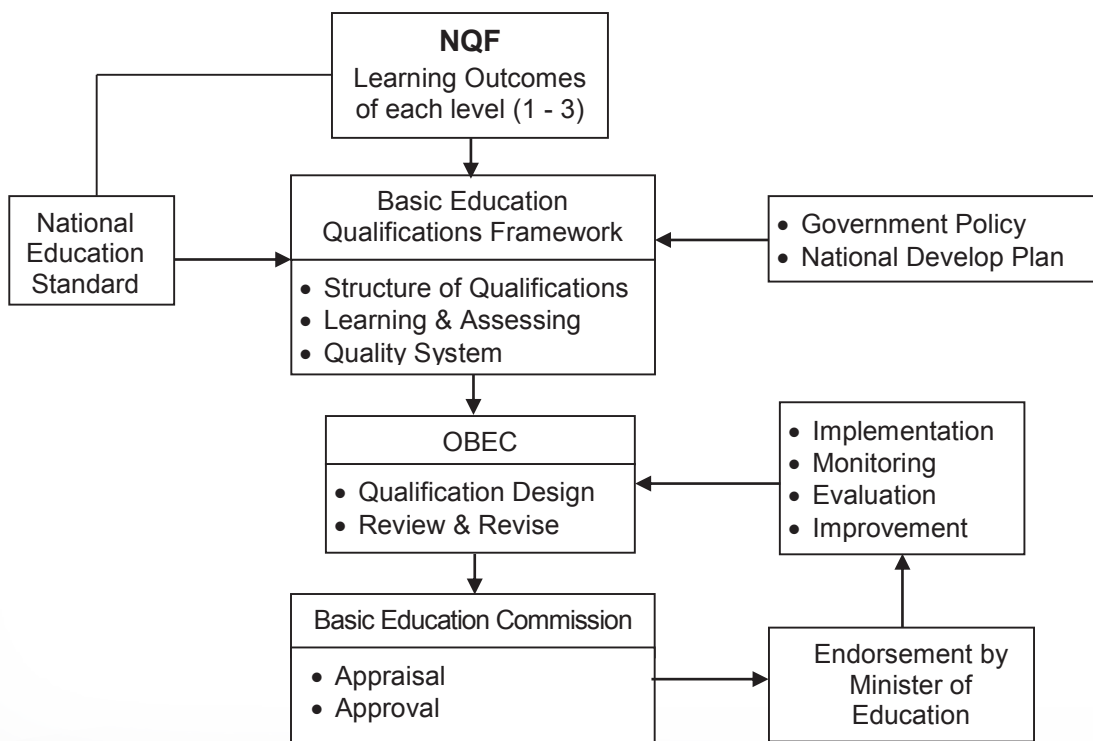


Figure 10 presents the Life Cycle of Basic Education Qualification in NQF. The Basic Education Framework was derived from the National Education Standard, government policy, and the National Development Plan, providing guidelines for the structure of qualifications, learning and assessing, and developing a quality system for curriculum or qualification design according to learning outcomes in NQF. Once OBEC designs, reviews, and revises qualifications in cooperation with all concerned agencies and stakeholders, qualifications is submitted to Basic Education Commission for appraisal and approval. Following this, the Minister of Education announced qualifications for implementation in schools. OBEC is responsible for the implementation i.e. monitoring, evaluation, and improvement of the qualification in schools under its purview.

Figure 11: Life Cycle of TVET and Higher Education Qualifications in NQF

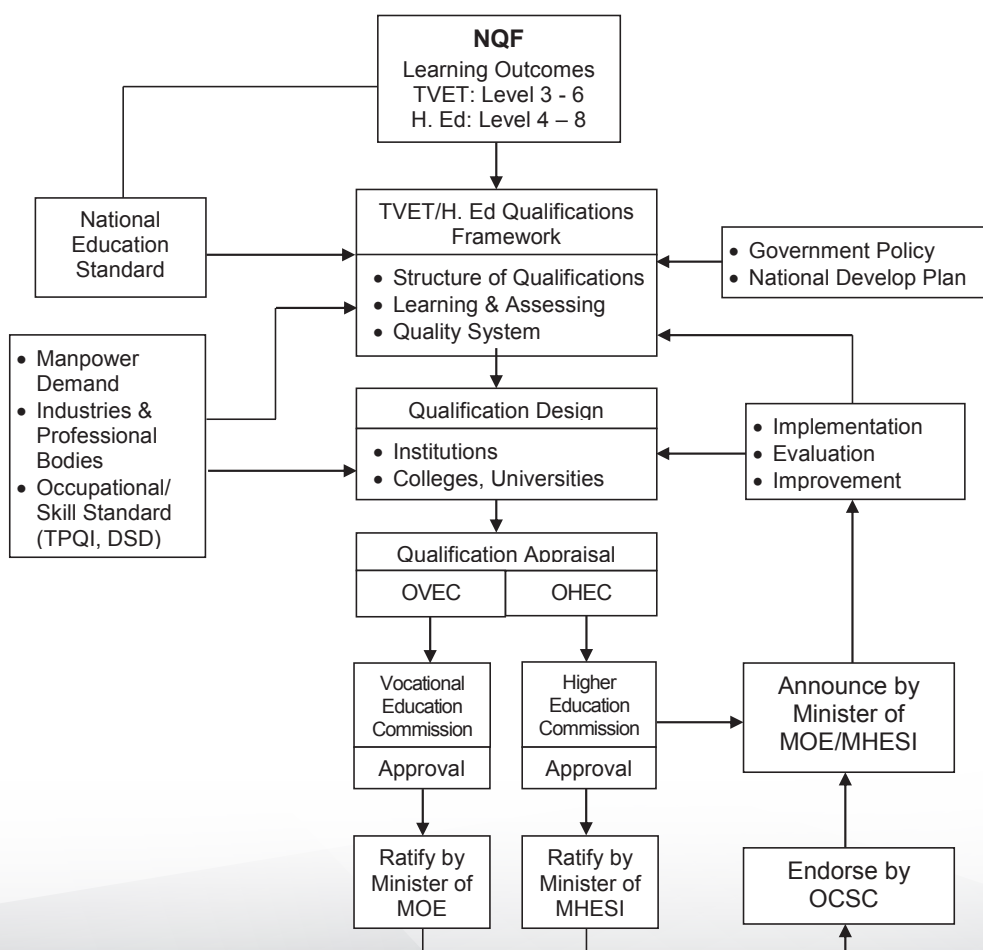


Figure 11 shows Life Cycle of TVET and Higher Education Qualifications which are very similar. Both TVET and Higher Education Qualification Framework comply with learning outcomes in NQF, as well as National Education Standards, Government Policy, and the National Development Plan. The input from manpower demand, industrial and business sectors, professional bodies are considered to be important parts of TVET and Higher Education Qualifications Framework and design. For TVET, occupational and skill standards are an integral part of qualification framework and qualification design. After TVET and Higher Education Qualifications are developed by institutions according to qualification frameworks, they are appraised by authorized bodies (OVEC or OHEC) and approved by the Vocational Education Commission or Higher Education Commission. The MOE or MHESI ratify qualifications and send them to the Office of Civil Service Commission for endorsement. The list of qualifications are registered and displayed on OVEC (www.vec.go.th) and MHESI websites (www.checo.mhesi.go.th).

Finally, the implementation of the announcement is made by the MOE and the MHESI. The TVET or Higher Education institutions are responsible for implementation, evaluation, and improvement of qualifications under the guidelines of OVEC or OHEC. Industrial and business partners, as well as professional bodies, also played important roles in the delivery, evaluation and improvement of qualifications.

Figure 12: Life Cycle of Professional Qualifications and Skill Standard in NQF

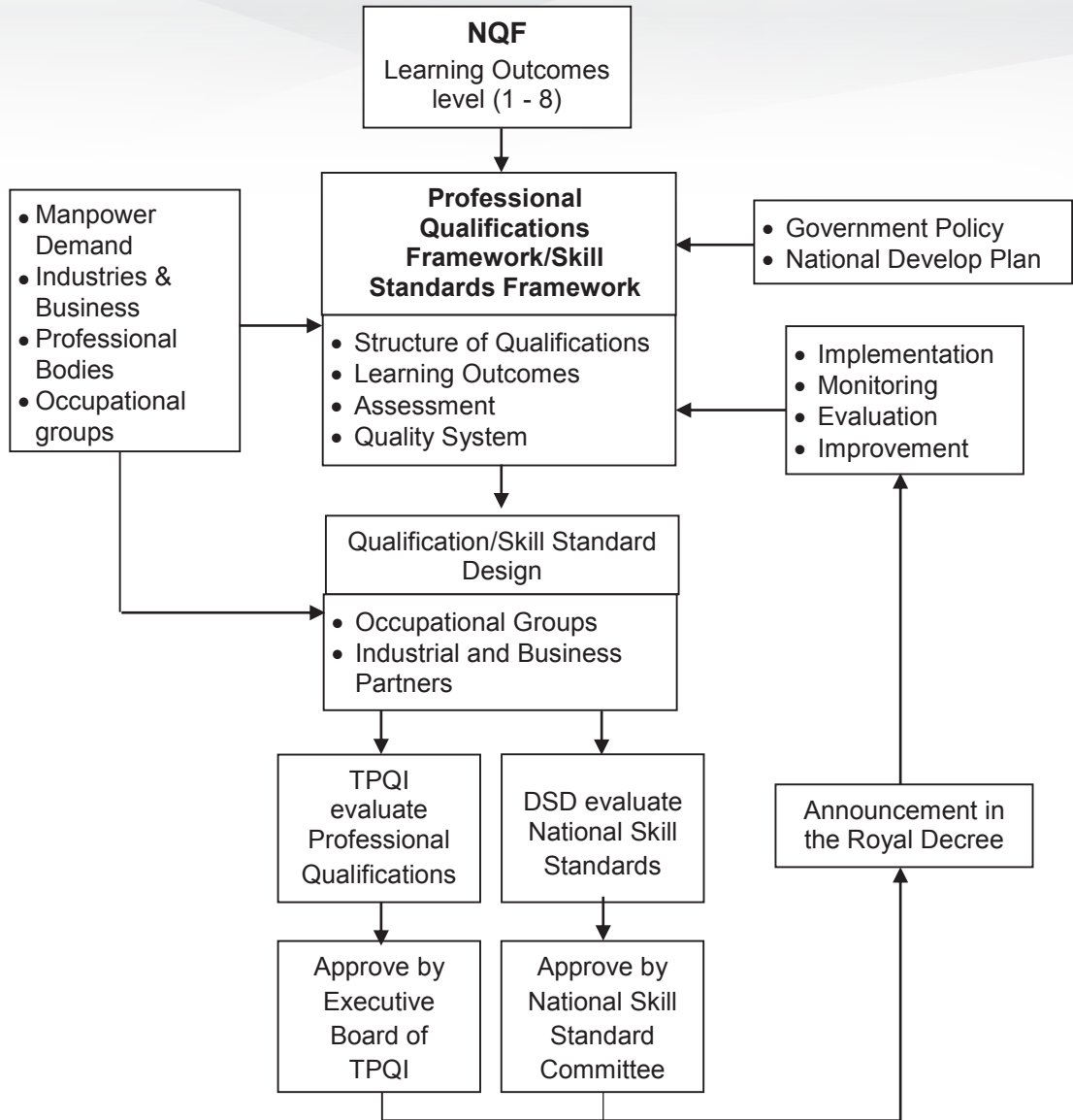


Figure 12 presents Life Cycle of Professional Qualifications of TPQI and National Skill Standards of DSD. The difference between PQ and NSS is that PQ of TPQI are mainly designed to cover various levels of competency required by clusters of each occupation while NSS are single skills. At present, TPQI and DSD are linking and integrating PQ and NSS under the same NQF level and occupational groups in order to ensure the quality of qualifications and national skill standards. The similarities of PQ and NSS are the process of designing PQ and NSS which is carried out through collaboration and input from manpower demand, industries and businesses, professional bodies, and occupational groups. The TPQI and DSD have drafted a PQ and the NSS and the Executive Board of TPQI and the National Skill Standard Committee approved the PQ and NSS. This was announced in a Royal Decree for implementation. Each authorized body, TPQI and DSD implement, monitor, evaluate, and improve PQ or NSS.

Locating Qualifications Learning Outcomes in NQF

Figure 13: Example of Linkages of TVET Qualification and PQ Qualification

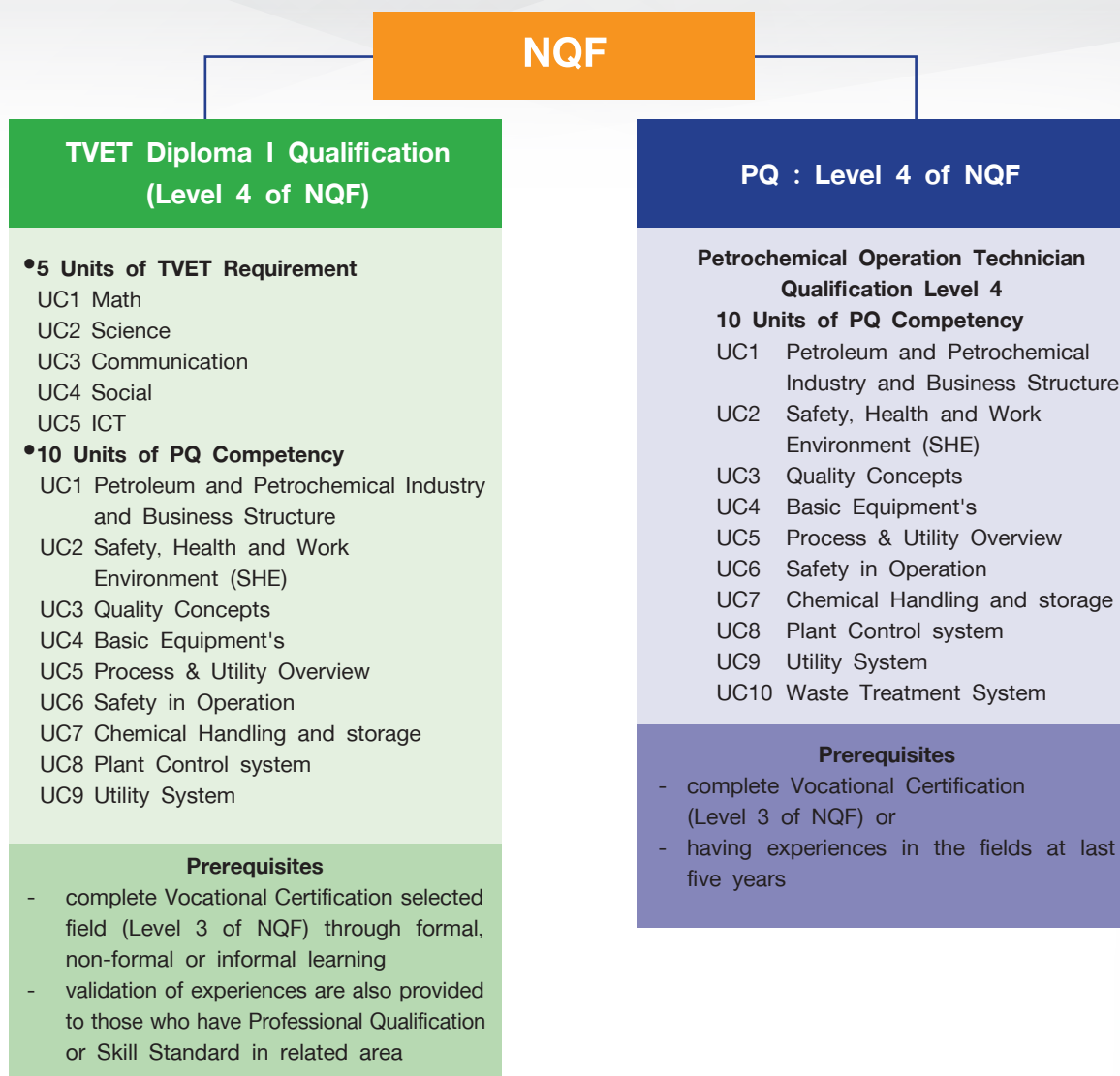


Figure 13 presents the example of linkages of TVET Qualification and PQ Qualifications in the Petrochemical Operation Technician Qualification. OVEC provided the Petrochemical Technician Qualification at level 4 or the Diploma level by using the 5 units of competency required by the TVET sub-qualification framework and 10 units of Petrochemical Operation Technician Qualification of TPQI. The Petrochemical Industries and Petroleum Institute of Thailand identified and organized Petrochemical Operation Technician competency for TPQI by benchmarking with international standards. The TVET Diploma at level 4 of NQF will be received by learners when they completed all 15 units of competency and passing the required test.

Figure 14: Examples of Learning Outcomes Comparisons in Petrochemical Operation Technician Qualification

NQF			
TVET Diploma I Qualification (Level 4 of NQF)	TVET Diploma I Learning Outcomes	NQF Level 4 Learning Outcomes	PQF Level 4 Learning Outcomes
<ul style="list-style-type: none"> • 5 Units of TVET Requirement UC1 Math UC2 Science UC3 Communication UC4 Social UC5 ICT • 10 Units of PQ Competency UC1 Petroleum and Petrochemical Industry and Business Structure UC2 Safety, Health and Work Environment (SHE) UC3 Quality Concepts UC4 Basic Equipment's UC5 Process & Utility Overview UC6 Safety in Operation UC7 Chemical Handling and storage UC8 Plant Control system UC9 Utility System UC10 Waste Treatment System 	<p>Knowledge:</p> <ul style="list-style-type: none"> • Theoretical and technical, covering an occupation field. English & ICT related to work <p>Skills:</p> <ul style="list-style-type: none"> • Skills in adapting suitable Operation process and related to safety issues <p>Application and Responsibility:</p> <ul style="list-style-type: none"> • Ability to operate as planned and adjust to changes • Ability in problem solving with unfamiliar issues 	<p>Knowledge:</p> <ul style="list-style-type: none"> • Theoretical and technical covering an occupation field. English & ICT related to work <p>Skills:</p> <ul style="list-style-type: none"> • Skills in adapting suitable Operation process and related to safety issues <p>Application and Responsibility:</p> <ul style="list-style-type: none"> • Ability to operate as planned and adjust to changes • Ability in problem solving by oneself and coordinate for problem solving with unfamiliar issues 	<p>Knowledge:</p> <ul style="list-style-type: none"> • Technical or theoretical knowledge in a field of work <p>Skills:</p> <ul style="list-style-type: none"> • Apply working skills in problem solving and safety in a field of work <p>Application:</p> <ul style="list-style-type: none"> • Competence for revision of quality or continuous works by oneself <p>Responsibility:</p> <ul style="list-style-type: none"> • Responsibility for work supervision and continuous work • Responsibility for their own and others' occupational health and safety (OHS)
<p>Prerequisites</p> <ul style="list-style-type: none"> - complete Vocational Certification selected field (Level 3 of NQF) through formal-non-formal or informal learning - validation of experiences are also provided to those who have Professional Qualification or Skill Standard in related area 	Best Fit		<p style="text-align: center;">PQ : Level 4 of NQF</p> <p style="text-align: center;">Petrochemical Operation Technician Qualification Level 4</p> <ul style="list-style-type: none"> 10 Units of PQ Competency UC1 Petroleum and Petrochemical Industry and Business Structure UC2 Safety, Health and Work Environment (SHE) UC3 Quality Concepts UC4 Basic Equipment's UC5 Process & Utility Overview UC6 Safety in Operation UC7 Chemical Handling and storage UC8 Plant Control system UC9 Utility System UC10 Waste Treatment System
<p>Prerequisites</p> <ul style="list-style-type: none"> - complete Vocational Certification (Level 3 of NQF) or - having experiences in the fields at last five years 			

Figure 14 presents an example and the details of learning outcomes comparison in Petrochemical Operation Technician Qualification at level 4 of the NQF. Learning outcomes of level 4 in NQF, TVET Diploma Qualification, and PQ level 4 are compared and appeared in matching the learning outcomes. TVET qualifications are offered at levels 3, 4, and 5 of PQ under NQF. The location of all qualifications in NQF assists the education qualifications to be relevant to labour market requirements, as well as better provision of learning pathways for those who have experience and need to acquire higher qualifications. The learning outcomes for each qualification in basic education, Technical and Vocational Education and Training, and higher education are located in NQF, as presented in Annex 5.

Education Qualifications and Locating in NQF

In locating Education Qualification in NQF, learning outcomes of each qualification sub-frameworks are mainly focused on learning outcomes conforming to each level in NQF. Education qualifications are divided into three sub-frameworks: Basic Education Qualification Framework, Technical and Vocational Education and Training Qualification Framework, and Higher Education Qualification Framework. These three qualification sub-frameworks were established before the NQF. However, after the NQF was established, these frameworks were reviewed and adjusted to comply with the NQF.

There were comparisons and an analysis of learning outcome compliance level of each qualification sub-framework by the Sub-Committee on NQF Implementation through several meetings and workshops before submitted for approval and endorsement by the National NQF Committee and the Cabinet.

The compliance of learning outcomes of domains for each qualification sub-frameworks with the levels of NQF, it is found that the compliance is more than 80%, so the referencing is at the best-fit level.

In 2018, the Technical and Vocational Education and Training Qualification Framework has already been adjusted according to NQF and the new qualifications were organized and implemented, while other sub-framework adjustment and qualification development were also carried out. The details of locating Education Qualification learning outcomes in NQF are provided in Annex 5.

Occupational Standards/Qualifications and Location in the NQF

In developing linkages and alignment between PQF, OS, and, NSS, TPQI has organized referencing process between PQF and NQF by analyzing the core competencies of learning outcomes or work outcomes in four domains, namely: knowledge, skills, application and responsibility, while the DSD formulated the definition of OS and NSS with learning outcomes in three domains: knowledge, skills, and attitudes as mentioned before. The learning outcomes and work outcomes located in the NQF of occupational standards that appeared in Annex 6.

The alignment of the Education Qualifications and Occupational Standards with the NQF has been completed. The agencies responsible for occupational standards adjusted their level descriptors to be in line with the NQF and learning outcomes. The agencies responsible for education actively encouraged the integration of occupational standards or work performance standards into education qualifications in order to improve the job opportunities of the graduates, focusing on individuals, preparing themselves for work or developing their work skills. The agencies concerned have worked cooperatively to ensure that the occupational or skill standards in NQF are applied to qualifications, teaching, learning, and assessment. At present, the clear linkages among five qualification sub-frameworks in NQF are recognized. The strong and continuing cooperation among the agencies concerned are the key to the success of NQF implementation in all sectors.



Criterion 4 :

Link of Thailand National Qualifications Framework Levels to the AQRF Levels Descriptors

There is a clear and demonstrable link between the qualification levels in the national qualification framework or system and level descriptors of the AQRF

Thailand has expressed its intent to join Phase IV of Referencing NQF to AQRF from 2016 to 2019. The scheme has been administered by the ASEAN Secretariat, aiming to referencing reports according to the eleven criteria set by ASEAN Member States.

The process of linking the NQF to AQRF was undertaken through the following activities:

1. Set up a National Sub-Committee on Referencing NQF to AQRF are mainly comprised of members from five qualification sub-sector authorities and representatives from the private sector with the following missions:
 - Develop strategies and plan for referencing NQF to AQRF, according to the policy and guidelines of the National NQF Committee
 - Implement the process of referencing NQF to AQRF
 - Draft a report on Referencing AQRF for submission to the NQF and AQRF committees
2. Carry out referencing process through several meetings and workshops for feedback and improvement
3. Summarize the referencing report and submit for approval

Once the Sub-Committee on Referencing NQF to AQRF was been established, the following activities were carried out:

- Structures of NQF and AQRF were mapping and analyzing
- Overview of the similarities and differences between AQRF and NQF are made
- Methodology, rules, and process in referencing AQRF and NQF are developed
- Learning outcomes of AQRF and NQF in details of eight levels in each domain are analyzed
- AQRF and NQF learning outcomes in each level are linked
- The draft of referencing report was developed and disseminated to all concerned agencies for feedback and improvement
- Submit the final referencing results for approval by the National NQF Committee

This part of the report shows the objectives and structures, similarities, differences of NQF and AQRF. The methodology, criteria and processes in reference to NQF and AQRF are also described.

4.1 Objectives and Structure of NQF and AQRF

The main objectives of NQF are to consolidate all qualifications into the same framework according to a strategy to reform education for employment as well as to widen opportunities for lifelong learning. Therefore, occupational standards or qualifications are also included in the NQF in order to ensure that educational qualifications linked to manpower requirement. As a result, NQF consists of three education qualification sub-frameworks and two qualifications sub-framework of occupational standards as follows:

- Basic Education Qualification
- Vocational Education Qualification
- Higher Education Qualification
- Professional Qualification
- National Skills Standard

(The details are presented in Criterion 1, 2 and 3)

All of the five qualification sub-frameworks are linked to education qualifications by levels and learning outcomes. There are mechanisms for linking and fulfilling learning outcomes through accumulating credits, the validation of experience and providing additional education and training. NQF is provided with qualifications at every level. There are 8 levels of NQF and the learning outcomes of each level is divided into three domains, as follows:

- Knowledge
- Skills
- Application and responsibility

Each level of learning outcomes indicates a level of knowledge, skills, application and responsibility. The differences of learning outcomes in each level depending on the depth of knowledge, complexity of skills, and the degree of application and responsibility. The number of credits is required for education qualifications in the NQF. For those out of the school system, they can obtain credit hours for education qualifications by validating experiences, non-formal, informal learning as well as additional training. Learning pathways are provided for every qualification, as shown in Criterion 5.

For AQRF, the main objectives are to facilitate the mobility of students and the workforce in the region. Therefore, AQRF supports integration and harmonization of education and training in ASEAN member countries with a common quality assurance system. AQRF serves as a guideline for improvement and internationalized qualifications for each member.

AQRF features 8 levels of learning outcomes without referencing types or levels of education qualifications. AQRF is comprised of two domains, as follows:

- Knowledge and skills
- Application and responsibility

There are similarities of AQRF domains as those of NQF. However, AQRF does not provide qualification titles and credits in the way that the NQF does.

4.2 Overview of the Similarities and Differences between NQF and AQRF

There are similarities and differences between the NQF and AQRF as follows:

Similarities

1. The objectives are similar in terms of serving as core principle for comparing qualifications, providing lifelong learning and guidelines for the enhancement of education qualifications.
2. Both NQF and AQRF contain 8 levels of learning outcomes that clearly describe different levels of similar complexity.
3. The three domains of NQF are comprised of knowledge, skills, application and responsibility are the same as those of two domains of AQRF which cover knowledge and skills, and application and responsibility.
4. The main learning outcome descriptors of both AQRF and NQF are very similar through NQF contains more details.

Differences

1. NQF has combination of five qualification sub-frameworks and a mechanism for linking, recognizing and fulfilling qualifications.
2. There are five qualification sub-sector authorities which are responsible for education and occupational qualifications or standards under NQF.
3. NQF provides education qualifications and requires credits.
4. NQF involves life skills and ethics whereas the AQRF does not.
5. AQRF does not provide education qualifications and titles.
6. AQRF does not show linkages with other qualification sub-frameworks.

4.3 Methodology, Rules and Process

Methodology

In referencing NQF to AQRF, the two approaches included linguistic and social analysis are used to compare and locate qualification learning outcomes in the NQF and the AQRF.

Rules and Processes in Referencing NQF with AQRF

1. Set the criteria for the best-fit of learning outcomes between AQRF and NQF, at least 80%.
2. Involve the industrial sector, international experts and all stakeholders in the process of referencing NQF to AQRF through the Sub-Committee on Referencing NQF to AQRF and several meetings and workshops.
3. To organize workshops and seminars with qualification sub-sector authorities and concerned agencies for the following tasks:
 - To analyse and compare the similarities and differences of domain descriptors and learning outcomes at each level of AQRF with NQF through linguistic analysis and social analysis
 - To map the domain descriptors in NQF with AQRF
 - To draft the results of linking AQRF to NQF
4. To disseminate draft referencing reports for feedback from concerned agencies and social partners.
5. To revise draft referencing report by a Sub-Committee on Referencing NQF to AQRF.
6. To submit the results of linking AQRF to NQF for approval by the National NQF Committee.

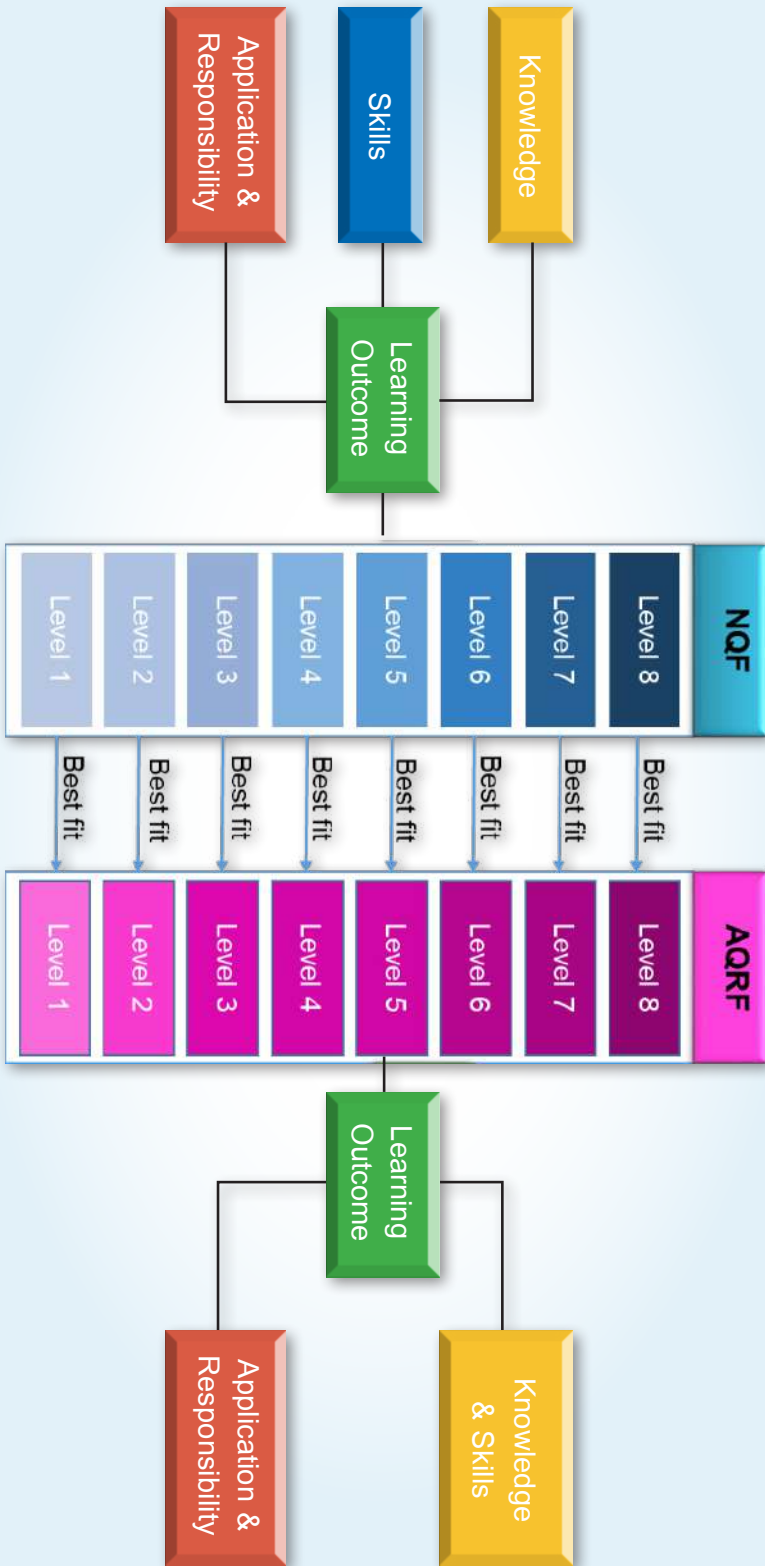


Figure 15: Linkages between NQF and AQRF

Figure 15 shows the linkages between levels of NQF and AQRF. For NQF, descriptors of learning outcomes are divided into three domains, knowledge, skills, and application and responsibility while the AQRF are divided into two domains, knowledge and skills, and application and responsibility, which are similar and comparable. By using both linguistic and social analysis in referencing NQF to AQRF, it was found that all levels of descriptor learning outcomes of NQF are best-fit with AQRF level by level by at least 80%. The details can be found in Table 10 which shows the details of referencing process, learning outcome comparison, analysis, and locating NQF in AQRF.

Table 10: Comparison and Analysis of NQF and AQRF Learning Outcomes

Learning Outcomes	AQRF	Thailand NQF
Level 1		
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>basic and general</u> • involve <u>simple, straightforward and routine actions</u> 	<ul style="list-style-type: none"> • <u>basic, general, about occupation</u> communicate with the world of work
<ul style="list-style-type: none"> • Skills 		<ul style="list-style-type: none"> • basic occupation skills • skills in communication, life skills, and <u>skills in routine operation</u> without complexity
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • involve structured <u>routine processes</u> • involve <u>close levels of support and supervision</u> 	<ul style="list-style-type: none"> • ability in <u>routine operation</u> according to the required steps • ability to <u>operate under close supervision</u>
<p>Analysis</p> <p>Similarity: Both the NQF and the AQRF learning outcomes have the same key words: basic and general, routine operations and actions, and close supervision.</p> <p>Differences: NQF descriptors cover ‘communication’ in both knowledge and skills but not in AQRF. There are more details on NQF descriptors than the AQRF.</p> <p>It is concluded that AQRF descriptors in level 1 are best-fit with those at the NQF level 1.</p>		
Level 2		
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>general and factual</u> • involve use of <u>standard actions</u> 	<ul style="list-style-type: none"> • ICT communication, <u>general and factual</u> knowledge of the field
<ul style="list-style-type: none"> • Skills 		<ul style="list-style-type: none"> • skills in operation according to the required steps and <u>standards</u> • thinking skills, life skills and communication skills with initiatives

Learning Outcomes	AQRF	Thailand NQF
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • <u>involve structured processes</u> • <u>involve supervision and some discretion for judgment on resolving familiar issues</u> 	<ul style="list-style-type: none"> • ability in <u>operation according to principles and standards</u> • ability in operation, <u>looking after and making basic decisions and problem-solving</u>
<p>Analysis</p> <p>Similarity: AQRF learning outcomes in three domains as underlined and covered in the NQF learning outcomes.</p> <p>Differences: There are more details of learning outcomes in NQF using different wording. However, they are covered by AQRF.</p> <p>Therefore, it is concluded that NQF level 2 is best-fit with AQRF level 2.</p>		
Level 3		
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • includes general principles and <u>some conceptual aspects</u> 	<ul style="list-style-type: none"> • principles of specialized fields and <u>basic analysis</u>
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • <u>involves selecting and applying basic methods, tools, materials and information</u> 	<ul style="list-style-type: none"> • <u>skills in selection and application of basic tools and materials</u> • communicative ICT and skills related to safety issues
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • stable with some aspects, but subject to change • <u>involve general guidance and require judgment and planning to independently resolve some issues</u> 	<ul style="list-style-type: none"> • ability to operate as planned and adjust oneself without complex changes • ability in independently <u>providing the basic advice needed for decision-making and planning for problem-solving in some issues</u> • application of knowledge skills in the field, ICT, communication in problem-solving, and work in a new context including responsibility for oneself and others
<p>Analysis</p> <p>Similarity: AQRF learning outcomes cover the three domains NQF as underlined.</p> <p>Differences: NQF has more details and reflects the needs of Thai qualifications. The wordings used in AQRF are different from those of NQF, however, the objectives are comparable.</p> <p>Therefore, it is concluded that NQF level 3 is best-fit with AQRF level 3.</p>		

Learning Outcomes	AQRF	Thailand NQF
Level 4		
• Knowledge	• <u>technical and theoretical with general coverage of a field</u>	• <u>theoretical and technical, covering an occupation field.</u> English + ICT related to work
• Skills	• <u>involves adaption processes</u>	• skills in adapting a suitable <u>operation process</u> and related to safety issues
• Application and Responsibility	• <u>generally predictable but subject to change</u> • involves broad guidance requiring some self-direction and coordination to <u>resolve unfamiliar issues</u>	• ability to operate as planned and <u>adjust to changes</u> • ability in problem-solving by oneself and coordinate for <u>problem-solving on unfamiliar issues</u>

Analysis

Similarity: AQRF learning outcomes of level 4 cover the NQF level 4 as underlined.

Differences: There are differences in terms of using the terms or wording, but the objectives are the same. NQF also includes English, ICT, and safety issues, but is not in AQRF.

Therefore, it is concluded that the level 4 NQF learning outcome is best-fit with AQRF level 4.

Level 5		
• Knowledge	• <u>detailed technical and theoretical knowledge of a general field</u>	• theoretical and in-depth technical, covering an occupation field
• Skills	• <u>involves analytical thinking</u>	• skills in <u>thinking, analyzing, and problem-solving</u> • skills in planning, managing and evaluating operations
• Application and Responsibility	• <u>often subject to change</u> • <u>involves independent evaluation of activities to resolve complex and sometimes abstract issues</u>	• <u>ability in operation under changing situations at all times</u> • <u>ability of evaluation of operation byoneself for complex problem-solving and abstract issues</u>

Analysis

Similarity: AQRF learning outcomes covered that of NQF, as underlined.

Differences: There are different wordings and statements between AQRF learning outcomes and those of the NQF. However, the objectives of those learning outcomes are not different. Therefore, it is concluded that NQF level 5 is best-fit with AQRF level 5.

Learning Outcomes	AQRF	Thailand NQF
Level 6		
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>specialized technical and theoretical skills in a specific field</u> • <u>involve critical and analytical thinking</u> 	<ul style="list-style-type: none"> • <u>theory and detailed specific occupation field</u>
<ul style="list-style-type: none"> • Skills 		<ul style="list-style-type: none"> • <u>skills in thinking, analyzing, reviewing, and comparing problems</u>
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • <u>complex and changing</u> • <u>requires initiative and adaptability, as well as strategies to improve activities and to solve complex and abstract issues</u> 	<ul style="list-style-type: none"> • <u>complex problem-solving and changing</u> • <u>initiate and improve, strategic complex planning, abstract problem-solving and management in the field</u>
<p>Analysis: Similarity: AQRF learning outcomes cover those of the NQF, as underlined. Differences: There are different wordings and statements between AQRF learning outcomes and those of the NQF. However, the objectives of these learning outcomes are not different. Therefore, it is concluded that NQF level 6 is best-fit with AQRF level 6.</p>		
Level 7		
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>at the forefront of a field and showing mastery of a body of knowledge</u> • <u>involve critical and independent thinking as the basis for research to extend or redefine knowledge or practice</u> 	<ul style="list-style-type: none"> • <u>in-depth forefront of the field</u>
<ul style="list-style-type: none"> • Skills 		<ul style="list-style-type: none"> • <u>skills in thinking, analyzing, initiating research, expanding knowledge, practice and academic English usage</u>
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • <u>complex, unpredictable, involves the development and testing of innovative solutions to resolve issues</u> • <u>require expert judgment and significant responsibility for professional knowledge, practice and management</u> 	<ul style="list-style-type: none"> • <u>solve complex and unpredictable problems, develop and try out new methods, search for innovative solutions</u> • <u>provide judgment and be as responsible as an expert with knowledge of operations and management</u> • <u>expert with theoretical and practical knowledge and management</u>

Learning Outcomes	AQRF	Thailand NQF
<p>Analysis: Similarity: AQRF learning outcomes cover those of the NQF, as underlined. Differences: There are different wordings and statements between AQRF learning outcomes and those of NQF. However, the objectives of those learning outcomes are not different. Therefore, it is concluded that NQF level 7 is best-fit with AQRF level 7.</p>		
Level 8		
<ul style="list-style-type: none"> • Knowledge • Skills 	<ul style="list-style-type: none"> • <u>at the most advanced and specialized level</u>, at the frontier of a field • <u>involves independent and original thinking and research</u>, resulting in the <u>creation of new knowledge or practice</u> 	<ul style="list-style-type: none"> • <u>the most advanced and highest specialized level</u> • <u>initiate research, creating knowledge or practice</u> • use English in an academic presentation • conduct research, published and accepted internationally
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • <u>highly specialized and complex, involving the development, the testing of new theories and solutions to resolve complex and abstract issues</u> • <u>require authoritative and expert judgment in the management of research on an organization and significant responsibility in extending professional knowledge and the practice and creation of new ideas and processes</u> 	<ul style="list-style-type: none"> • <u>have expertise in complex problem solving, develop and test new theories or search new solutions with complex and abstract issues</u> • <u>authorized to provide knowledge in the field for management research and responsible for enhancing knowledge and practices, creating new ideas and process in the field</u>
<p>Analysis: Similarity: AQRF learning outcomes cover those of the NQF as underlined. Differences: There are more details for the NQF learning outcomes than those of AQRF. The wording and the statements used in AQRF learning outcomes and those of the NQF are also different, but the objectives of the learning outcomes are not different. Therefore, it was concluded that the NQF level 8 is best-fit with AQRF level 8.</p>		

Table 10 provides details on learning outcomes in terms of comparison, analysis, and similarities and differences between each level of NQF and AQRF. The underlined statements or words in Table 10 presented similar learning outcomes of AQRF and NQF which may be different in terms of the wording, but the objectives are comparable. All of the level descriptors in NQF are comparable and best-fit in linking with AQRF level by level.

4.4 Impacts of AQRF Referencing

Thailand is a pilot country to undertake referencing the NQF to AQRF. This may result in enhancing implementation of the NQF and internationalized qualifications through AQRF. However, the details of referencing qualifications with member countries through AQRF must be carried out by each occupational sectors or fields and qualifications. The following are the expected impact of AQRF referencing:

1. Enhance extensive implementation of learning outcomes-based qualifications
2. Enhance education qualification quality through NQF and AQRF
3. Recognition of the competencies of learners and manpower who received certificates from five qualifications authorities
4. Extend lifelong learning
5. Increase the participation of the workforce in education and professional qualification systems
6. Reform occupational standards qualifications in line with the NQF and the AQRF
7. Promote internationalized qualifications according to the NQF and the AQRF
8. Develop an online learning platform and qualifications catalogue among ASEAN member countries
9. Encourage learners and workforce mobility in the region

Criterion 5 :

Basis Agreed Standards of NQF

The basis of the agreed standards of the national framework or qualifications system and its qualifications is described

The basis of the agreed standards of NQF or qualification system covers education and occupational standards in the five qualification sub-sectors, which include:

1. Education Standards
 - Basic Education Standards
 - Vocational Education Standards
 - Higher Education Standards
2. Occupational Standards
 - National Skill Standards
 - Professional Standards

The agreed standards of NQF are the learning outcomes of those five qualification sub-frameworks, which are already located in the NQF. In this part of the paper, NQF qualification standards control are described and the details of standards for each qualification sub-framework are explained.

5.1 NQF Standards Control

The learning outcomes in NQF are agreed standards which every qualification sub-sector needs to ensure quality of all qualifications under the NQF. The following activities were implemented:

1. The improvement and implementation of qualification sub-frameworks according to NQF learning outcomes were carried out by five responsible agencies.
2. The NQF qualification quality assurance system of the programme are focused, especially TVET, and higher education qualifications linked to professional qualifications and recognized by the industrial and business sectors and professional bodies.

3. The credit bank systems for education qualifications under NQF has been strengthened by each educational institution in order to provide learning pathways and qualification progress to those out of the school system.
4. The database on NQF qualifications which is under the authority of the qualification sub-sector authorities is linked and disseminated to the public by both those five sub-sector authorities and the OEC.
5. There has been an increasing expansion of co-qualifications with international institutions or agencies by benchmarking learning outcomes.
6. TPQI has been authorized to provide training according to occupational qualification standards. The process of developing a system of validation of experiences or prior learning for occupational qualifications is carried out. Therefore, additional training for qualifications can be provided and a credit transfer system can be used for educational qualifications.
7. The involvement of industrial and business sectors, as well as professional bodies, is essential for designing and monitoring qualification standards.
8. Accreditation and register of TVET and Higher Education Qualifications under NQF are provided by the Office of the Civil Service Commission.

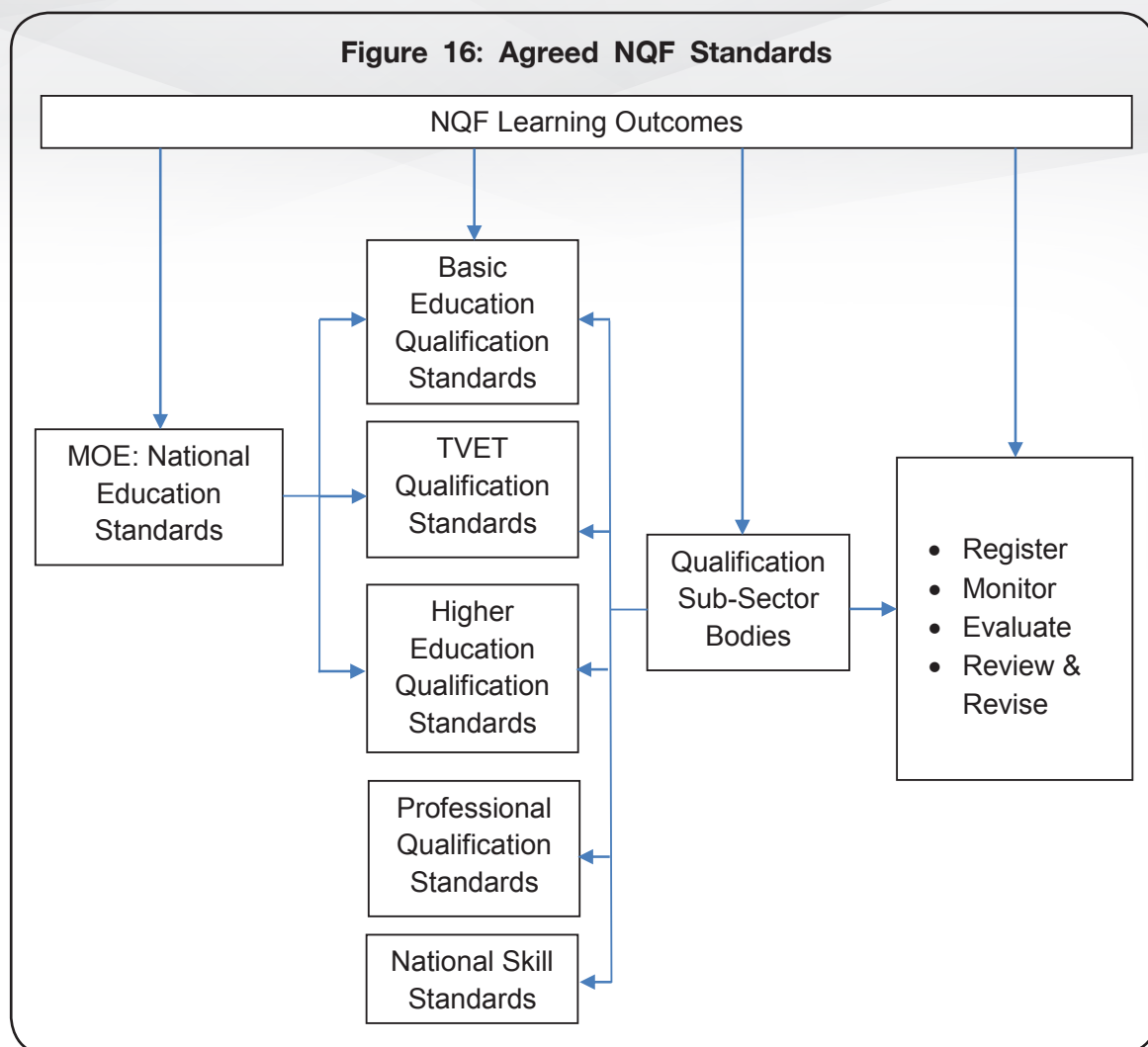


Figure 16 presents the agreed NQF standards, which were based on the learning outcomes. In designing the qualifications, the five qualification sub-sector bodies complied with NQF learning outcomes according to their qualification frameworks that are already located in the NQF. The control system of agreed standards in NQF is operated by reporting registered qualifications to OEC and National NQF Committee. Therefore, policies and issues for mobilization of NQF implementation would be enhanced. Furthermore, linkages of education qualifications learning outcomes and professional qualifications or skill standards are focused in order to enable the relevance of qualifications to the labour market demand. At the same time, those who have experiences or professional qualifications or skills standards would be provided with the validation of experiences or prior learning for accumulated credits. So lifelong learning through additional training, non-formal, and informal learning is provided for education qualifications.

5.2 Education Standards

Thailand has declared the new National Education Standards B.E. 2561 (2018) in the form of desired learning outcomes to be in line with the learning outcomes of the NQF, which was approved by the Cabinet on 2 October 2018 for implementation of every level of education. There are three categories of National Education Standards, which include the following: (1) learners; (2) innovative co-creators; and (3) active citizens. The desired outcomes of education set in the National Education Standards are the minimum requirements for Thai people and linked closely with the learning outcomes of NQF. In order to ensure qualification standards, Figure 17 shows the endorsement process of educational qualifications.

Figure 17: Endorsement Process of Education Qualifications

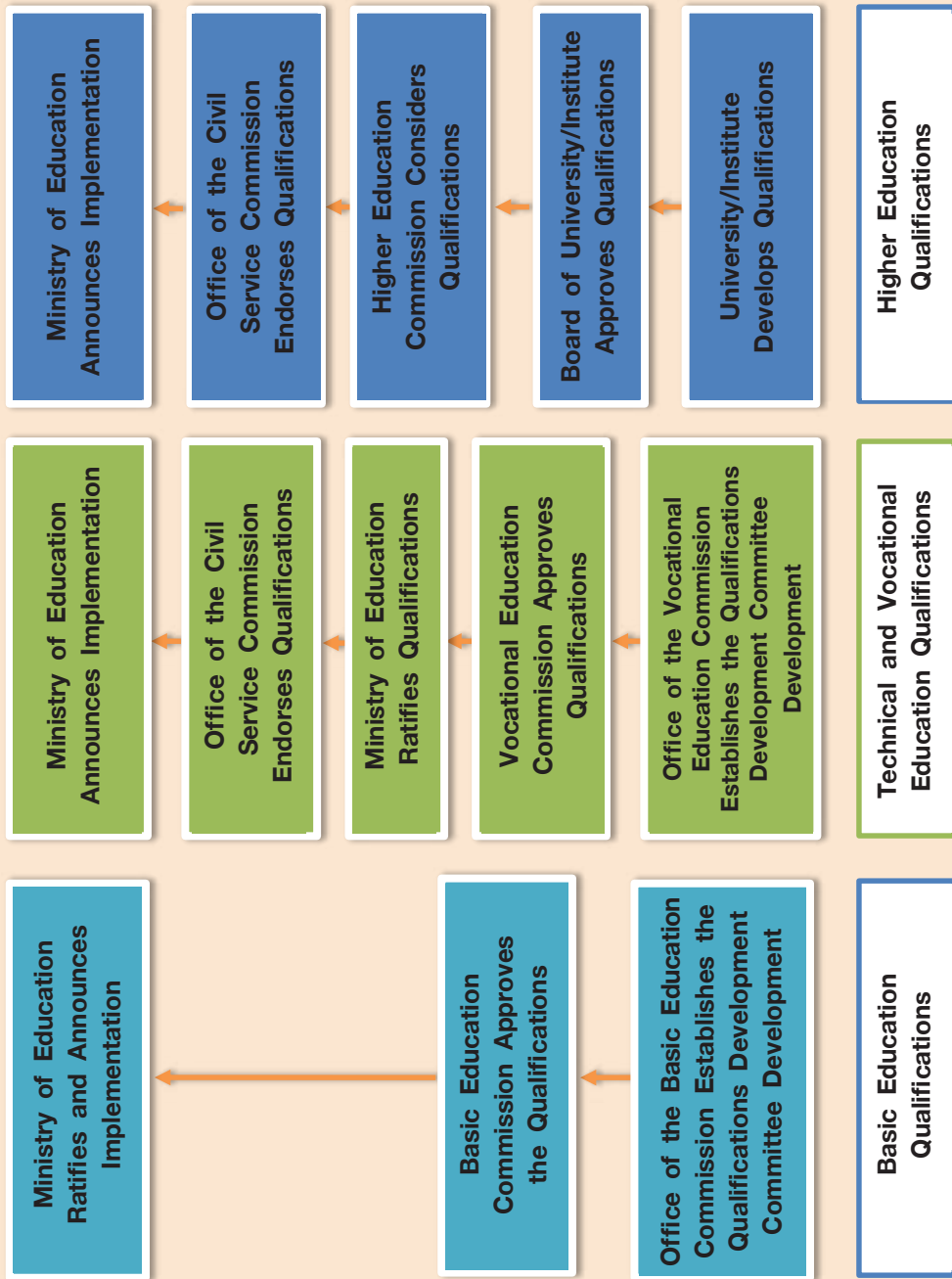


Figure 17 presents an endorsement process of Education Qualifications in Basic Education, Technical and Vocational Education and Training, and Higher Education. For basic education, Office of the Basic Education Commission will establish a Qualifications Development Committee comprised of all stakeholders. The Basic Education Qualification Framework under the NQF will serve as guideline for qualification development. Once the framework was completed, the Basic Education Commission must approve and submit to the Minister of Education for ratification and an announcement for implementation. This qualification would serve as core qualification for schools. However, each school can develop elective subjects or content according to needs of locality within the structure of the curriculum.

For Technical and Vocational Education and Training Qualifications, the Office of the Vocational Education Commission will establish the Qualification Development Committee, mostly composed of the private sector and professional groups. Occupation and skill standards are required for qualification development, according to the National Vocational Education Framework. Once the standards are completed, approval of the Vocational Education Commission will be needed before submitting it to the Minister of Education for ratification. After that, Vocational Education Qualifications must be endorsed by the Office of Civil Service Commission and used for implementation by the Ministry of Education. Technical and Vocational Education and Training Colleges can offer other elective subjects and add or revise the content of the subjects in the curriculum structure and described the qualifications, according to needs of the industry or the locality. It can be said that both Basic Education and Technical and Vocational Education and Training are National Core Qualifications, but they are provided with opportunities for schools and institutions to adjust in accordance with the needs of the locality.

Higher Education is different from Basic and Technical and Vocational Education, in other words, a university or an institution is responsible for qualification development, according to Higher Education Qualifications Framework and seeks approval from the Board of the University or Institute. The Higher Education Commission will ratify qualifications and submit them to the Office of the Civil Service Commission for endorsement before announcement for implementation by the Minister of Education.

Table 11: Number of Credits for Education Qualifications in NQF

Educational Qualifications			NQF Levels	Number of Credits	Learning Pathway
Basic Education	Vocational Education	Higher Education			
		Doctoral Degree	Level 8	48	Training, Non-Formal, Informal learning, and recognition of experiences
		Higher Graduate Dip./ Master Degree	Level 7	39	
	Bachelor Degree of Technology	Graduate Dip./ Bachelor Degree	Level 6	120 (72 – 82 for B. Tech)	
	Diploma in Technical Education	Associate Degree	Level 5	80-90	
			Level 4		
Upper Secondary + Vocational Skill	Vocational Education Certificate		Level 3	100 – 110 (77 + 30 for Upper Secondary)	
Upper Secondary			Level 2	77	
Lower Secondary			Level 1	77	

Table 11 shows the credits required by each level of NQF. As mentioned in the Basic Education Qualifications and Lower Secondary and Upper Secondary Education requiring 77 credits for levels 1 and 2 of the NQF. If upper secondary students take additional vocational skills, they will be at level 3 of the NQF. In terms of Vocational Education, there are four qualifications at level 3, 4, 5, and 6 of NQF, while Higher Education has a five level qualification system, which corresponds with levels 4, 5, 6, 7 and 8 of the NQF. As mentioned in Criterion 1, the credit transfer system for education qualifications is currently derived from training, non-formal and informal learning, and recognition of experience is actively implemented at levels 1 to 6, especially, TVET qualifications. Hopefully, in the future, all level of qualifications could be implemented. The following are the standards of Basic Education, Technical and Vocational Education and Training and Higher Education which are described in terms of qualifications standards, and achievement standards.

Basic Education Standards

- **Qualification Standards**

The qualification standards of Basic Education Core Curriculum (A.D. 2008) is aimed at attaining a balanced development in all aspects – knowledge, skills, attributes and morality to serve as a foundation for Thainess and universal values. The learning standards and indicators of the eight key learning areas include the following: Thai language; science; social studies, religion and culture; health and physical education; art; occupations and technology, and foreign languages serve as goals for the development of the quality of the learners. These learning standards and indicators are designed to qualify learners with five key competencies: communication, thinking, problem-solving, ICT literacy, and life skills with the combination of eight attributes: love of the nation, religion and the monarchy; honesty and integrity; self-discipline; eagerness to learn; applying principles of a sufficiency economy philosophy; dedication and commitment to work; cherishing Thainess and public mindedness.

For Lower Secondary Education in formal education system, learners must study for at least three years. In order to complete lower secondary education, learners must attain not less than 77 credits.

At Upper Secondary Education in formal education system, learners must spend at least three years of study. In order to complete upper secondary education, learners attain not less than 77 credit hours.

- **Achievement Standard**

With regard to lower secondary education, a student must pass reading, writing, and numerical testing according to the standards set by the school. They need to complete 66 credits of core courses and not less than 11 credits hours of elective courses. A grade point average of 1.00 is also required.

In terms of Upper Secondary Education, a student must pass reading, writing, and numerical testing according to the standards set by the school. They need to complete 41 credits of core courses and not less than 36 credits in elective courses. The average grade point of 1.00 are required.

In order to ensure qualification standards for basic education, Ordinary National Education Test (ONET) is provided for students in Grade 6, Grade 9 and Grade 12 in eight areas, as previously mentioned.

Technical and Vocational Education and Training Standards

- **Qualification Standard**

The Qualification Standards of TVET has been clearly identified in the National Vocational Education Framework of 2018, which covered three qualifications: Vocational Education Certificate, Technical Diploma, and Bachelor Degree. The learning outcomes must cover at least four aspects: (1) moral, ethics, and desired attributes; (2) knowledge; (3) skills; and (4) application and responsibility.

For the Vocational Education Certificate, three years of study or six semesters are required. One semester lasts 18 weeks, for students have to undertake work-based learning or practical experience in industry or business. The total credits of six semesters are 100 – 110 credits. The structure of qualifications comprises 21 credits hours for core competency, 69 credits for technical competency, ten credits hours for electives and at least two hours a week for extra-curricular activities without credits. The ratio between theory and practice is 20:80. Students may enroll to complete the programme within 12 semesters for full-time and 16 semesters for part-time.

For Technical Diploma, two years of study or four semesters are required. One semester lasts 18 weeks, and students have to undergo work-based learning or practical experience in industry or business. The total credits of four semesters are 80-90 credits. The structure of qualifications are comprised of 18 credits core

competency, 56 credits for technical competency, 6 credits of elective and at least two hours a week for extra-curricular activities without credits. The ratio between theory and practical is 40: 60. Students may enroll to complete the programme within 8 semesters for full time and 12 semesters for part time.

In terms of the Bachelor's Degree, three years of study or six semesters are required. One semester is 18 weeks, and at least for one to two semesters, students are on work-based learning or practical learning in industry or business. The total credits for four semesters are 72-82 credits. The structure of qualifications are comprised of 18 credits core competency, 48 credits for technical competency, 6 credits of elective and at least two hours a week. The ratio between theory and practical is 40: 60. Students may enroll to complete the programme within 8 semesters for full-time and 12 semesters for part-time.

- **Achievement standards**

The achievement standards of Technical and Vocational Education and Training Qualification are based on three levels of qualifications, as follows:

1. Vocational Education Certificate: In the formal schooling system, students in vocational education programmes are required to complete 100-110 credits.
2. The average grade point must be at least 2.00. They also have to pass the Vocational Education Test for completion of the programme and take the Vocational National Educational Test (V-NET).
3. Technical Education Diploma: After completion of Vocational Education Certificate, students may continue to spend two years of study or more for a technical education qualification. They have to complete 80-90 credits. The average grade point must be at least 2.00. They also have to pass Vocational Education Test for completion of the programme and take a Vocational National Educational Test (V-NET).
4. Bachelor's Degree of Technology: Bachelor's Degree programme offered those who complete the Technical Education Diploma is a two-year programme. Students must complete 72-82 credits. Their grade point average is at least 2.00.

Figure 18: TVET Qualifications Standards under NQF

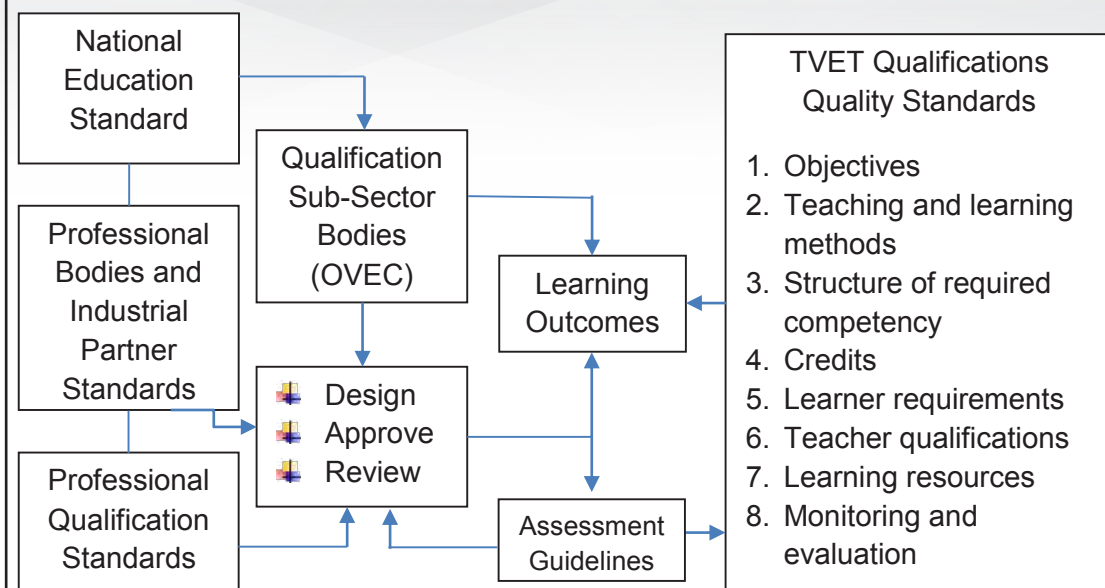


Figure 18 shows the integration of the educational standard in the framework of TVET Qualifications Quality Standards, which include objectives, teaching and learning methods, the structure of required competency, credits, learner requirements, teacher qualification, learning resources, and monitoring and evaluation. The TVET standard framework will lead to expected learning outcomes in NQF which are the responsibility of OVEC, in cooperation with both professional bodies and industrial partners. Professional Qualification Standards are also integral components of TVET qualifications.

Figure 19: Example of Implementing Bookkeeping Professional Qualifications in TVET Qualification

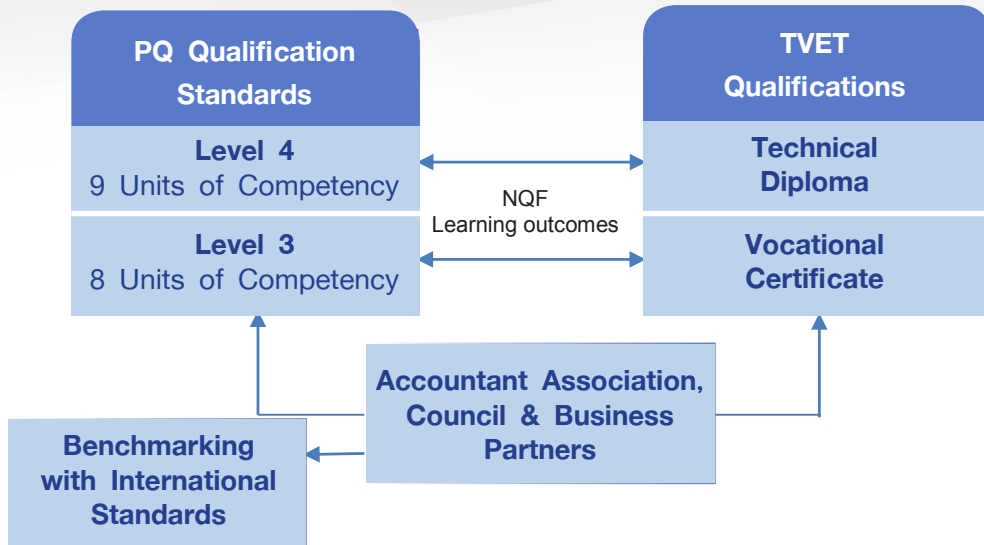


Figure 19 shows an example of Professional Bookkeeping Qualifications, which are one of 700 occupations in 55 sectors and with 1,900 professional qualifications developed by TPQI in cooperation with Professional Bodies and industrial sectors. The Accounting Professional Qualification, like that of other professional qualifications, are the main components of TVET qualifications. Besides the TVET required competency unit, all units of competency from professional accountancy qualifications are provided in TVET qualifications. The learning outcomes of each level of PQ qualification are integrated in the TVET learning objectives and outcomes. The Association of Accountants and their business partners played important roles in providing the competency standards needed which are also benchmarked with international standards. They also participated in curriculum development, delivery methods and assessment.

Higher Education Standards

- **Qualification Standard**

In 2006, the first version of Higher Education Standard was launched with the mandates from the National Education Act. It is comprised of three aspects: (1) standards of the quality graduates; (2) the standards for governance in higher education management; and (3) the standards of knowledge-based learning and society. In 2008, the new version of Higher Education standards was launched and had five aspects: (1) the standards of students and graduates; (2) research and innovation; (3) the standards of academic services; (4) the standards of arts, culture, and Thainess, and (5) the standards of higher education management. The Higher Education Standards can serve as a guideline for the implementation of all higher education management and affairs.

In 2009, the Thai Qualifications Framework for Higher Education (TQF: HEd) was developed to support the implementation of educational guidelines set out in the National Education Act, to ensure consistency in both standards and titles for higher education qualifications, and to make clear the equivalence of academic awards with those granted by higher education institutions in other parts of the world. The Framework will help to provide appropriate points of comparison in academic standards for institutions in terms of planning and internal quality assurance processes, for evaluators involved in external reviews and for employers in understanding the skills and capabilities of graduates they may employ. The learning outcomes at each level of qualifications in higher education are emphasized and play an important role in the TQF, which is a reference to a designing programme of study for higher education. Later, the TQF has been integrated into NQF.

TQF classifies the learning outcomes into five domains and describe the learning outcomes at each level and in each of these groupings in relation to the NQF descriptors, as follows:

1. Ethics and morals
2. Knowledge
3. Cognitive skills
4. Interpersonal skills and responsibility
5. Numerical analysis, communication, and information technology skills

The bottom-up approach with all stakeholders is promoted to translate TQF to “the Discipline Standards”, with the research process required to make it comparable internationally. The structure and learning outcomes in the higher education programme of study will be designed in compliance with the TQF or discipline standards.

- **Achievement standards**

Higher Education Standards consist of the following three aspects, as follows:

1. Quality Standard of Graduates: students must have knowledge, moral, ethics, self-learning and development; application of knowledge for living in the society with physical and mental happiness; conscience and responsibility as national and global citizens.
2. Quality Standard of Higher Education Administration: Higher Education institutions should have good, balanced governance.
3. Quality Standard in creating and developing a knowledge-based and learning society.

It covers four levels of qualifications: Associate’s degree, Bachelor’s degree, Master’s degree, and Doctoral degree.

1. Associate’s degree: Students must spend three years after completion of upper secondary education in formal systems and not after more than six years of study. 90 credits of study are required and students should have the average grade point of 2.00.
2. Bachelor’s degree: Four to six years after completion of upper secondary education are required for students in the Bachelor’s degree programme. At least 120 credits are required and students should have the average grade point of 2.00.
3. Master’s degree: Students must spend no more than five years of study after completion of the Bachelor’s degree. At least 39 credits are required
4. Doctoral degree: Not more than eight years of study after completion of a Bachelor’s degree and not more than six years of study after completion of a Master’s degree are required for the Doctoral degree program with at least 48 credits required for those who complete a Master’s degree and 72 credits are required for those who complete a Bachelor’s degree and students should have a grade point average of 3.00.

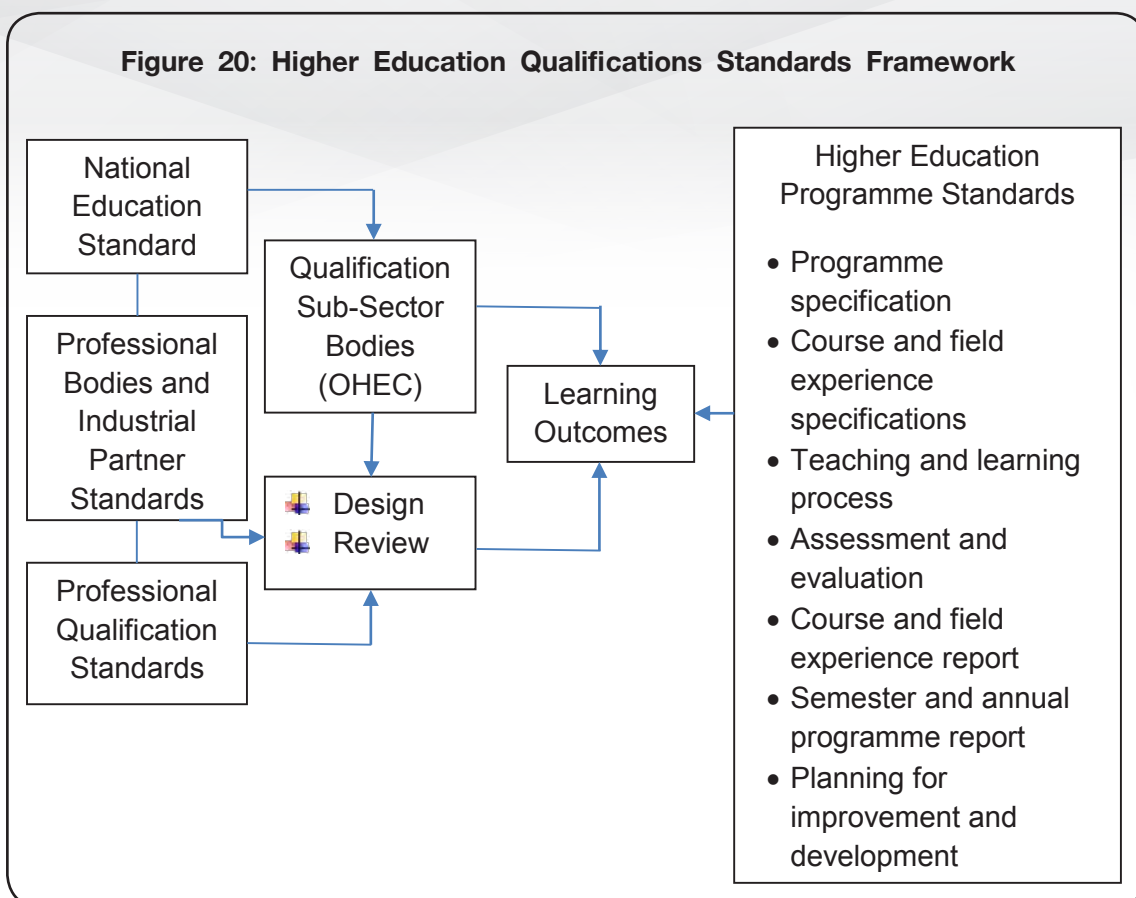
Figure 20: Higher Education Qualifications Standards Framework

Figure 20 shows the Higher Education Qualifications Standards Framework, which are similar to TVET qualifications. The components of programme specification in Higher Education includes course and field experience specifications, the teaching and learning process, assessment and evaluation, course and field experience report, semester and annual programme report, and planning for improvement and development. OHEC, which is responsible for higher education qualifications and monitoring and controlling the learning outcomes of each programme to those programme specifications by the Higher Education Commission. After the programme proposed by universities or higher education institutions are ratified by the Higher Education Commission, it is endorsed and registered by Office of the Civil Service Commission (OCSC) and announced by the Minister of Education. The professional bodies and industrial partners are also involved in programme design and are reviewed at a university level. Some programmes in higher education also implemented professional qualifications standards.

5.3 Occupational Standards

TPQI Qualifications Standards and Achievement

The Thailand Professional Qualification Institute (TPQI) encourages stakeholders to set occupational standards. The occupational standards are then developed by private sector, employers and employee groups or associations.

TPQI has a Terms of Reference which serves as a guideline for all professional writers to strictly follow the process of occupational standards setting (Annex 9), which can be represented, as follows:

1. Stakeholders Meeting (industry, government agencies, associations, etc.) need to be held to ensure that the standard is needed and a response to the real needs of the industry.
2. Professional Writer contracted (Universities, Associations, Institutions and must follow the TOR of TPQI).
3. Pre-and-post public promotion through different target media.
4. Stakeholders are selected and invited as a working group to participate in occupational standard setting.
5. It is necessary to study and analyze related occupational standards from two overseas countries and one SEA country to consider the similarities and differences.
6. Several workshops with a working group of industrial representatives are arranged for occupational standard setting and qualifications, according to TPQI template and professional qualification framework.
7. Table the occupational standard and the qualifications to Endorsement Committee represented by 9-12 representatives from relevant public and private organizations for consensus.
8. Once the occupational standard and qualifications are endorsed by the committee, the working group will develop assessment tools for occupational standards.

9. The experts are invited to evaluate, to verify the validity, reliability and the difficulty of the assessment tools.
10. Pilot tests of the assessment tools are conducted with a trial assessment and if there are some important issues during the trial, it is necessary to go back to the standard.
11. If the assessment tools are against the occupational standard, TPQI will table the assessment process and assessment tools to the Endorsement Committee for final consensus.
12. The occupational standard will be reported to the TPQI Governing Board (occupational standard, assessor manual, occupational standard manual and assessment tools).
13. TPQI announces the occupational standards of the Royal Decree.

The process includes several consultations of relevant stakeholders in the field for setting the unit of competence, elements of competence and performance criteria. Once the occupational standards, representing units of competence and qualifications, are set by the working group, then the working group will develop the assessment tools and test them before reporting to the TPQI Governing Board. The whole process can take about 365 days, depending on how large the industry is or the number of qualifications.

Training providers and education institutions are able to use these occupational standards for curriculum development and training programmes.

Figure 21: Linkages of TVET Curriculum Standard and PQ Competency Standard

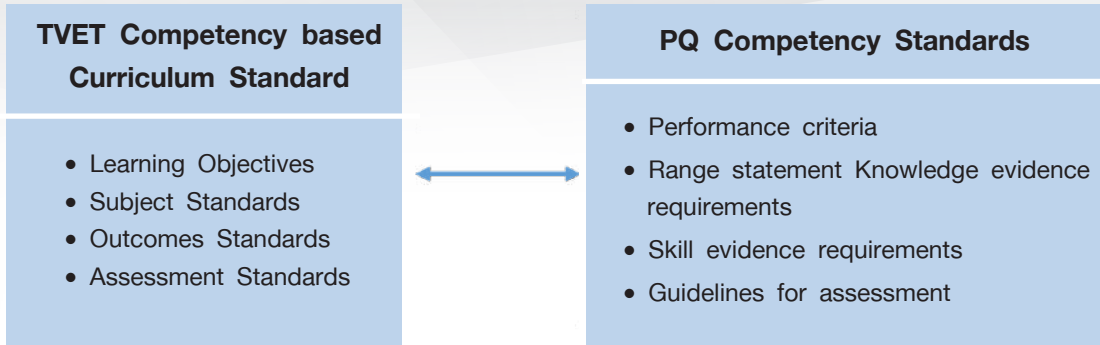


Figure 21 presents the linkages of the TVET curriculum standard and the PQ competency standard. The agreed standards of learning outcomes in NQF will be implemented through TVET competency-based curriculum standards, which include the following: (1) learning objectives; (2) subject standards; (3) outcome standards; and (4) assessment standards. The PQ Competency Standards, which are integral parts of the TVET curriculum are comprised of the following: (1) performance criteria; (2) range statements; (3) knowledge evidence requirements; (4) skill evidence requirements; and (5) guidelines for assessment are integrated in TVET curriculum in the same level of NQF.

By 2019, TPQI had already developed occupational standards in 55 sectors covering about 700 occupations and 1,900 professional qualifications. A list of the Occupational Standard Sectors and Professional Qualifications are located in Annex 10.

Occupational Standards and Achievements by the Ministry of Labour

The National Skill Standards are implemented under the Skill Development Promotion Act B.E. 2545 (A.D.2002) under the supervision of the Department of Skill Development (DSD) and the Ministry of Labour and were then divided into two types:

- National Skill Standards
- Occupational Standards of Workers

In the formulation of national skill standards of various occupations, by laws or by international usage, the elements to be taken into account include the knowledge and ability skills of personnel in each occupation, which is reflected in the rates of wages and payments. The procedure contains the following:

1. Survey the demand of labour market
2. Select the key occupations demanded by the market
3. Recruitment of experts, specialists, occupation owners and stakeholders to be sub-committee members on national skill standards
4. The Committee on Skill Development designates the sub-committee as required
5. Analyze the occupations, main tasks, sub-tasks, and draft skill standards of each occupation
6. Call a meeting of the sub-committee to endorse their skill standards
7. Identify the qualifications of these applicants in national skill standard tests
8. Produce handbooks on the tests: procedures, criteria, content of tests in terms of knowledge and ability
9. Present standard for approvals of the sub-committee and committee
10. Publish the draft national skill standards, qualifications of test applicants and procedures of the tests in the Government Gazette
11. Train examiners and accredit testing centers
12. Conduct tests on national skill standards in compliance with the quality assurance system

To be certified on qualifications according to the skill standards, applicants must pass the national skill standard test on the knowledge, skills and attitude required for working in each occupation. The minimum wage is also determined according to their level of skill standards.

An individual who applies for skill standards tests must be at least 18 years old, with experience in that occupation or receiving appropriate training and education. He or she must pass 70-80 percent of the test, depending on the rules and criteria for each field.

In 2019, the DSD developed 245 skills standards in 7 occupational sectors and provided training and testing for those who looked for employment, changing jobs, and upgrading skills. A list of the 7 occupational sectors are included in Annex 11.

Criterion 6 :

National Quality Assurance System for Education and Training

The national quality assurance system for education and training that refers to the national qualifications framework or system are described. All bodies responsible for quality assurance state their unequivocal support for the referencing outcome

6.1 Quality Assurance System

The Quality Assurance (QA) system for education and training in Thailand are responsible by Ministry of Education. External quality assurance system is carried out by Office of National Education Standards and Quality Assessment (Public Organization) (ONESQA) while each qualification sub-sector authority is taking care of Internal Quality Assurance (IQA). Recent development of QA system is in the Ministerial Regulation for Education Quality Assurance 2018.

The National Education Act 1999 stated that a quality assurance system should take place in order to develop the quality and standards of education at all levels, comprising internal and external quality assurance systems, which are linked and related altogether as shown in Figure 23. The criteria and procedure of quality assurance are as stated in the Ministerial Regulation for Education Quality Assurance 2018.

The new ministerial regulation 2018 announcing the “Education Quality Assurance” means to evaluate and monitor the quality according to education standards of each level and type of institutions with a controlling mechanism established by institutions. The aim is to develop and ensure confidence of stakeholders and the public that the institutions are able to provide quality education according to education standards and achieve the objectives of qualification sub-sectors.

Each qualification sub-sector provides a quality assurance system within the institution by defining its education standards in accordance with the education standard of each level and type of education announced by the Minister of Education. Each institution is required to undertake an evaluation and examination on education quality and follow up the results to meet quality and standards of education provision and submit a Self-Assessment Report (SAR) to qualification sub-sector bodies every year.

In order to ensure that the implementation of education quality assurance is effective, qualification sub-sector bodies are responsible for providing counseling, assistance and introduction to institutions in order to continuously enhance the quality of assurance.

When qualification sub-sector bodies receive the self-assessment reports of institutions, they are required to deliver such reports, together with issues that require evaluation and monitoring collected from relevant agencies or stakeholders, to ONESQA as information and guidelines for external quality assessment.

The ONESQA shall evaluate and monitor the quality and education standards of institutions and submit the assessment and monitoring report with suggestions to institutions and qualification sub-sector bodies to use as guidelines for enhancing the quality of education.

Figure 22: Roles of Bodies in Quality Assurance System

Regulator	Supporter	Operator
ONESQA	Qualification Sub-Sectors (OBEC, OVEC, OHEC)	Schools/TVET/Institutes Universities
<ul style="list-style-type: none"> • Set EQA standards • Organize EQA • Analysis of SAR • Deliver assessment report for quality improvement (suggestions and guidelines) 	<ul style="list-style-type: none"> • Set IQA standards (guidelines, quality code and criteria) • Preparation and support institutions readiness for SAR and Mock assessment 	<ul style="list-style-type: none"> • improvement QA standards through Development plan • Involve social partner in IQA and SAR Develop IQA of institutions • Organize annual SAR • Summit SAR to concerned agencies

Figure 22 shows the roles of three bodies in the QA system, which includes ONESQA and the three qualification sub-sectors (OBEC, OVEC, and OHEC), and institutions. These three responsible bodies in the QA system play important roles as regulators, supporters and operators. The details of the Internal Quality Assurance and External Quality Assurance System is described below:

Internal Quality Assurance System

The Internal Quality Assurance (IQA) system is one of the administrative educational processes, which should be continuously practiced. There must be control of components related to quality, audit, follow-up, and performance assessment for regular quality improvement. Hence, the internal quality assurance system should monitor the inputs, processes, and outputs and the outcomes of the system, while the external one focuses on the outputs and the outcomes.

Education institutions set their standards according to the standards of each type and level of education, with education provision plans, aiming for quality; then implementing and assessing to check the internal quality. The report on self-assessment is annually sent to qualification sub-sector bodies.

The IQA system has been put in place in educational institutions. This assessment is based on the missions of the institutions in order to make assessment more effective and efficient. Each institution is responsible for monitoring and assessing its IQA system as a mechanism to manage overall internal performance assessment, from inputs and process to outputs and outcomes. Each education institution is required to produce an annual IQA report or SAR for submission to its responsible agencies, relevant organizations, and the public.

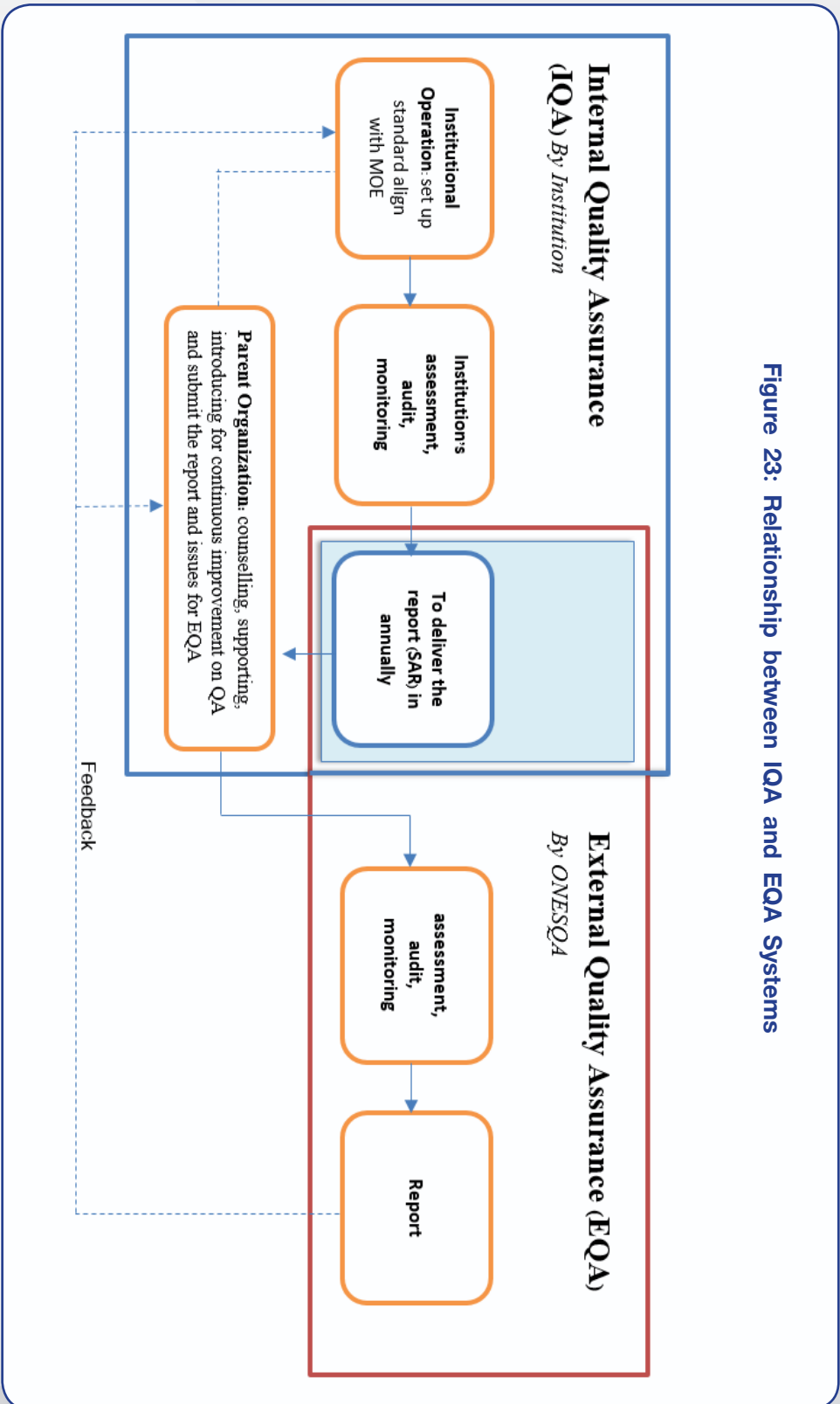


Figure 23: Relationship between IQA and EQA Systems

As shown in Figure 23, educational institutions must produce an annual internal quality assessment report. These reports contain internal quality assessment results as specified by the responsible agency. The Higher Education Institutes use Commission on Higher Education Quality Assurance (CHE QA) in an online database system recording education quality assurance results in an online system, starting with the collection of a common data set, supporting documents, self-evaluation, and evaluation by a quality assessment committee. These reports are presented to the overseeing agencies, relevant organizations, and the public since the reports connect IQA and monitoring by responsible agencies.

Office of the Higher Education Commission (OHEC) will provide educational institutions with consultancy, assistance, advice, for the continuity of the quality assurance. The OHEC also sent the report with issues for assessment and monitoring gathered from relevant agencies or stakeholders to ONESQA as information for EQA.

External Quality Assurance System

ONESQA is responsible for assessment and quality monitoring at educational institutions. Reports with recommendations will be sent to the institutions and supervisory agencies for quality improvement.

ONESQA also conducts EQA for individuals or agencies and then certify them. Qualification sub-sector bodies have to follow-up the results of the improvement and the development of institutions in terms of quality and education standards.

The Royal Decree on the Establishment of the ONESQA 2000 stipulates that the recruitment of distinguished committee members is based on principle of inclusiveness, balanced representation and even distribution from the public and private sectors, scholars and professional communities. Therefore, ONESQA committees are professional and have extensive experiences with management, educational administration, and QA to help steer the development of EQA in accordance with the goals of the National Education Act.

All members of all of the boards and committees can each serve for a four-year term of service, but no more than two consecutive terms. The committee has the authority to control the operation such as setting management policy, decision-making on operational plans, approving investment and financial plans, following up on operations and monitoring the administration of organizations. The committee also enforces regulations, rules, announcements and requirements, such as distributing

the organizational structure; determining job positions, qualifications, and salary, etc. (Royal Decree on the Establishment of the ONESQA, Section 20) empowers the Executive Committee to appoint advisors to committees and to certify external assessors.

External Quality Assurance and Education Quality Assessment Committee is comprised of 4 committees:

1. The Executive Committee for the ONESQA there are 10 members appointed by the Cabinet.
 - 1.1 Chairman: specialist in the field of administration, social or science and technology
 - 1.2 Member: Chairman of Basic Education Commission
 - 1.3 Member: Chairman of Vocational Education Commission
 - 1.4 Member: Chairman of Higher Education Commission
 - 1.5 Member: six specialists from administration, science and technology
 - 1.6 Member and secretariat: Director of the ONESQA is a committee

Duties and responsibilities:

- Formulate policy and approve the ONESQA implementation plan
 - Approve an annual budget and a financial plan
 - Provided measures in disseminating quality and standard assessment to concerned agencies and the public
 - Accredited external assessors and provide a scope of duties and related rules and regulations
 - Issue rules, regulations, criterion or announcements in management of ONESQA
2. The Committee for Development and Assessment System of Basic Education
 3. The Committee for Development and Assessment System of Vocational Education
 4. The Committee for Development and Assessment System of Higher Education

The three committees of each education sector are comprised of 11 members, selected from specialists in administration, assessment, and related fields from both the public and private sector. The working term is three years and they are able to continue for another three years.

Duties and responsibilities: These three committees provided academic assistance in each type of education to the Executive Committee

- To develop and improve EQA including standards and criterion for external quality assessment in accordance with Executive Committee policy
- Monitor standard accreditation and education quality assessment of related institution accordance with Executive Committee policy

- **Alignment of the Quality Assurance System and the ASEAN Quality Assurance Framework**

The external quality assurance follows the ASEAN Quality Assurance Framework (AQAF) in terms of four key principles: (1) External Quality Assurance Agencies (EQAA); (2) External Quality Assurance (EQA); (3) Institutional Quality Assurance (IQA); and (4) National Qualifications Framework (NQF). The implementation under AQAF will help support the trust and facilitate qualification recognition, credit transfer and learner mobility in the region in the present and in the future.

ONESQA is the sole national EQAA in Thailand and its establishment conforms to the principles of the AQAF which suggest that a national EQAA should be set up with a legal framework. The details of operations of ONESQA to conform the principles of the AQAF are provided in Annex 12.

For external quality assurance guideline and processes, AQRF serves as a common set of core principles, neutral reference points and some evidence along with the principles shown in Table 12.

Table 12: AQAF Principles and Neutral Reference

Principles	The External Quality Assurance Agencies	External Quality Assurance Standards and Processes	Internal Quality Assurance (Institutions)	National Qualifications Framework
Guidance	An appropriate and legally established by an external body mandated and dedicated to conduct quality assurance. The mission and goals are clearly indicated.	The core function and activity is to conduct quality assurance processes and the establishment of policies, standards, procedures and outcomes. These standards are developed with stakeholders and reflect national needs and aspirations	It reflects the close linkage between external quality assurance and the internal quality assurance of institutions	This provides a national classification, and standards for qualifications in educational sector. It reflects the progressive complexity of learning, outcomes, credits, and establishes a learner center approach in teaching and learning and beyond that supports lifelong learning
Examples of Evidence	<ul style="list-style-type: none"> - The National Education Act of 1999 - Royal Decree on the Establishment of ONESQA - Ministerial regulation of QA - Board of committees cover all levels of education - manual for operations - standard operating procedures - strategic plans - publications - research output - seminars/ conferences - IQA review system - monitoring systems and reviews 	<ul style="list-style-type: none"> - procedures for developing standards - guidelines for institutional assessment - involvement of stakeholders - set of quality assurance framework, evaluation instrument, assessors training and monitoring - manuals for Institutional - selection criteria and practice - workshops - appeals system and procedures 	<ul style="list-style-type: none"> - dialogue and input from various parties - a structure within the IQA organization to ensure the implementation and monitoring of improvement such as a committee and a working group - documented policies (Ministerial regulations of QA) and responsibilities of all parties which have been disseminated to institutions - linkage between the IQA & EQA indicators 	<ul style="list-style-type: none"> - national policies and strategies - mechanism of authorized body responsible for NQF - evidence of implementation policies and mechanisms - EQA Indicators related to learning outcomes

ONESQA's EQA corresponding to the AQAF consists of three steps: (1) before the institution visit; (2) during the institution visit and; (3) after the institution visit.

- **Before site visit**

ONESQA notifies the designated institution to submit institutional SAR to ONESQA at least 30 days prior to the EQA. Additionally, SAR can also be prepared on the electronic database system with the same format, differing only in terms of criteria and standards. This makes it easier for education institutions to use this database to prepare reports. Furthermore, ONESQA has developed an information system for EQA called Automated Quality Assurance (AQA) by linking databases with responsible agencies to facilitate and enhance the efficiency of ONESQA performance, assessors, and education institutions. After the team of external assessors has received the institutional SAR, they will call a meeting to discuss assessment preparation. The team of assessors examines assessed institution's performance through SAR and common data set to analyze preliminary assessment results and prepare questions for actual assessment.

- **During site visit**

The team of assessors has a meeting with the representatives of institution's administrators to get introductory information of the institute and explain the objectives of the assessment. After the meeting, the processes of interview, observation and examination of decision making and gaining reliable information are made to the key stakeholders. On the last day of assessment, the team of assessors verbally gives comments and summary of the assessment results. The assessors will provide suggestions for improvement and subsequently deliver a draft of assessment report to the institution for review. The assessed institution can make an objection within 15 days after the receiving date.

- **After site visit**

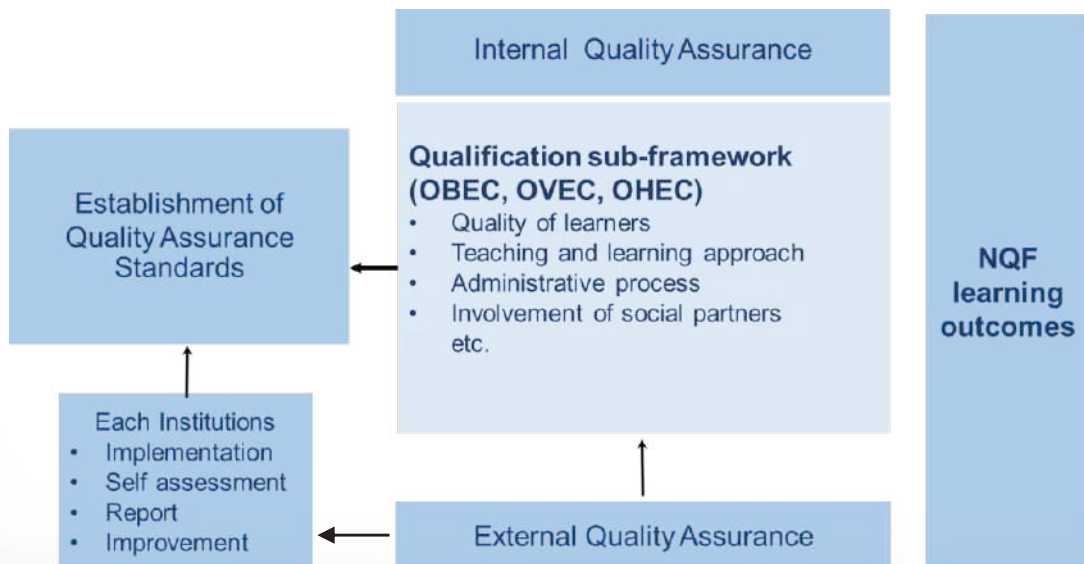
The team of assessors submits the draft assessment report approved by the institution to ONESQA for verification. If there is any part that needs amendment or correction, ONESQA returns it to the team of assessors for amendment. Only the completed and accurate report is brought to the consideration of the Development of Assessment Systems for each level of education committees (basic, vocational and higher education) and then the Executive Committee of ONESQA will be the ultimate body to certify quality of assessed institutions. ONESQA will post summary of the EQA

results and disseminate it to the public via its website and send the full assessment report with official certification of the quality assessment to the education institutions and responsible agencies.

6.2 Quality Assurance System of Education and Occupational Standards Related to NQF

Qualification sub-framework authorities (OBEC, OVEC and OHEC) establish quality assurance standards based on their qualification frameworks which are located in NQF. Learning outcomes of qualifications in NQF are actually described through standards such as the quality of the learners, teaching and learning approaches, the administrative process, and involvement of social partners. The education institutions have to carry out those standards and develop assessment reports for improvement. With the implementation of NQF, the quality assurance standards of qualifications are strengthened. The linkages between IQA and EQA, with the NQF learning outcomes, as shown in Figure 24 below:

Figure 24: Linkages of IQA and EQA with NQF Learning Outcomes



Furthermore, quality assurance is divided into educational and occupational standards, which can be described as follows:

- **Quality Assurance for Education Standards**

In practice, institutions implement quality assurance at the institution level, called IQA, which is conducted once a year, and receives external quality assessment according to the cycle. In addition, at programme level, it is necessary that the programmes of study are certified by other agencies, such as the professional council, international standard bodies or others. This can proceed further than normal systems according to the standards of the certification agency.

- **Quality Assurance for Occupational Standards**

Graduates or workers can take additional professional standards tests. Those who pass the standard test will be certified by the agency or organization to ensure that they have skills, knowledge, and competencies that meet the requirements.

Table 13: Quality Assurance System of Educational and Occupational Standards

	Quality Assurance System for Educational Standards			Quality Assurance System for Occupational Standards
	Basic Education	Vocational Education	Higher Education	
National Standard	<ul style="list-style-type: none"> • Basic Education Standards for internal quality assurance • OBECQA • Non-formal and Informal Education Standards 	<ul style="list-style-type: none"> • Vocational Education Standards • Vocational Education IQA 	<ul style="list-style-type: none"> • Higher Education IQA 	<ul style="list-style-type: none"> • TPQI • DSD • Professional Associations • Professional Councils • Professional Organizations
International Standard		<ul style="list-style-type: none"> • EAS TVET QAF • Asia Pacific Accreditation and Certification Commission (APACC) 	<ul style="list-style-type: none"> • AUN-QA • AACSB • ABEST21 • EPAS • EQUIS • IACBE • WFME 	<ul style="list-style-type: none"> • ISO 9001: 2015 • ISO/IEC 17024

Table 13 summarizes the quality assurance system of education and occupational standards, including international standards of each qualification sub-sector. For example, the professional standard of TPQI are also certified by ISO 9001:2015 and benchmarked with ISO/IEC 17024 (details in 6.3), and the DSD Skill Standards

are benchmarked with ISO/IEC 17024. The ISO 9001:2015 is a management system with standards that apply to TPQI as an organization. ISO 17024 is a standard that applies to organizations which certify students in some competencies. This demonstrates that TQPI processes for certification are under close monitoring by the ISO 17024 certification body. For some of the Higher Education programmes, as well as TVET programmes and institutions, they are also benchmarked and certified by international organizations and standards.

Quality Assurance of Basic Education Qualifications

The Criteria and Procedure of Education Quality Assurance 2010 has set four standards of basic education for IQA of education institutions:

- Standard 1: Quality of Learners, meaning that the learning outcomes which reflect and express knowledge, ability, skills, key competencies, desired attributes, according to the curricula with development in terms of reading, writing and analytical thinking.
- Standard 2: Administrative Process of Institutions meaning that the administration of institutions cover academic aspects, teachers, education personnel, ICT and environment, allow participation of all stakeholders in education provision to ensure confidence in the quality of education.
- Standard 3: Learner-Centered Teaching and the Learning Approach meaning that the process of education provision are based on institutional curricula that are in line with the context of community and locality, interests, demands and aptitudes of learners, with diverse methods, so that learners could learn fully and in accordance with their potential. The knowledge and understanding of learners could be systematically and efficiently investigated and assessed.
- Standard 4: Effective IQA System meaning that the system of educational quality and standard management of institutions result in good quality of learners, derived from participation of stakeholders who are confident in the quality of education provision.

The quality assurance system for non-formal and informal education as follows:

- Ministerial regulation on the System, Criteria and Procedure of Education Quality Assurance, 2010
- Ministerial regulation on the Criteria and Procedure of Internal Quality Assurance for Non-Formal Education Institutions, 2012
- The 2nd Announcement of Ministry of Education on the Standards of Non-formal and Informal Education, 2017 for basic education, comprising three main standards:
 - Quality of learners and service receivers
 - Quality of education and service provision
 - Efficiency of education administration

In order to ensure basic education quality, QA system development includes eight activities, as follows:

- Identify Education Institution Standards
- Develop Quality Education Development Plan according to Education Institution Standards
- Develop administrative systems and information
- Implement the Quality Education Development Plan
- Monitor and evaluate the quality of education
- Assess internal quality according to Education Institution Standards
- Develop annual internal quality assessment report
- Continue enhancement of education quality

In addition, the National Institute of Educational Testing Service (NIETS), a public organization also provides Ordinary National Education Test (ONET) to students in Grade 6, Grade 9 and Grade 12 or at the primary, lower secondary, and upper secondary level. The main objectives are to assess academic proficiency according to Basic Education Core Curriculum and reflect the quality of education at the national level.

Quality Assurance of Technical and Vocational Education and Training Qualifications

In order to ensure quality of TVE qualifications, the National Vocational Education Framework of 2019 identified four components of quality assurance, as follows: (1) the use of occupational standards for qualification development; (2) qualified teachers and resources; (3) appropriate learning methods and assessment; and (4) the quality of graduates. In addition, everyone must pass the Vocational Education Standard Test to attain qualifications.

In 2018, there was an announcement of the Vocational Education Standards, including three standards and eight issues for assessment. Three standards include:

- Standard 1: Desired characteristics of graduates including knowledge, skills and application, and ethics and morals
- Standard 2: Vocational education management comprised of curricula, teaching and learning, management, and policy implementation
- Standard 3: Establishment of a learning society involving partnership in learning society establishment, and innovation, invention, creativity and research

Eight issues for assessment include:

- Objectives
- Teaching and learning methods
- Structure of required competency
- Credits
- Learner requirements
- Teacher qualifications
- Learning resources
- Monitoring and evaluation

According to the Vocational Education Act of 2008, National Vocational Education Framework has been developed in order to ensure the quality of the qualifications, curricula, delivery system and the quality of the graduates. The National Vocational Education Framework of 2019, covers levels of qualifications, delivery system, and quality of graduates in four areas: (1) desired characteristics and behavior; (2) knowledge; (3) skills, and (4) application and responsibility, which are closely related to the learning outcomes in NQF and AQRF.

In addition, quality assurance of TVE qualifications have been undertaken by carrying out the following international standards, for example:

- East Asia Summit Technical and Vocational Education and Training Quality Assurance Framework (EAS TVET QAF) (2012)
- Asia Pacific Accreditation and Certification Commission (APACC)
- ASEAN Mutual Recognition Arrangements (MRA) in Tourism Professionals
- Doc 7192 AN/857 of International Civil Aviation Organization
- Model course of International Maritime Organization (Model course 7.02, 7.04)
- Nondestructive Testing from England and U.S.A. standards (SNT-TC-1A)
- Electronic and Mechatronics of KOSEN, Japan

In the IQA process of Technical and Vocational Education and Training, all stakeholders, including staff, students, community members and industrial representatives, as well as related agencies in both public and private organizations. There are eight activities in the QA system development, which are similar to those of basic education.

Quality Assurance of Higher Education Qualifications

In terms of higher education, academic independence in the selection of QA system is the main concern. Universities may select IQA developed by Office of the Higher Education Commission or any other systems that are internationally recognized community. The IQA system is organized through curricula, faculties, and institutions. The steps for the development of quality graduates are in compliance with the Thai Qualifications framework for Higher Education (TQF: HEd).

The process of quality assurance of higher education qualifications, starting from the Thai Qualification Framework for Higher Education, which follows the National Education Act of 1999 (the 2nd amendment in 2002), National Education standards and Higher Education Standards, which are embedded in the NQF.

The Thai Qualification Framework for High Education describes the expected learning outcomes, program standards criteria, degree nomenclature, criteria for credit transfer and other relevant standards. There are seven components in the Higher Education qualifications framework. According to Figure 25 and with TQF 1 to TQF 7, program reviews must be carried out every five years.

According to the National Education Act of 1999 (the 2nd Amendment, 2002), the quality assurance, both internal and external, must be developed. The OHEC is responsible for supporting the IQA in higher education institutions. ONESQA is also responsible for EQA.

At first, the IQA was developed at the faculty and institution level. Later, after the implementation of TQF in 2009, the IQA was extended to be conducted at a programme level with elements and criteria, as follows:

- IQA at the faculty and institution level, there were 5 elements and 13 indicators: (1) graduate production; (2) research; (3) academic services; (4) arts and culture conservation; and (5) administration.
- IQA at the programme level, there were 6 elements and 14 indicators: (1) standards monitoring; (2) research; (3) students; (4) lecturers; (5) curricula, teaching and learning methodologies and learning assessment; and (6) learning support facilities.

In 2009, the TQF was launched by OHEC. The TQF was designed as a tool or mechanism to link policy to implementation and emphasizing the quality of graduates and other aspects of higher education standards. The quality of graduates must consist of five domains of learning outcomes, as mentioned in criterion 5: Standards, Criteria and Guidelines for Accreditation, namely: (1) ethics and morals; (2) knowledge; (3) cognitive skills; (4) interpersonal skills and responsibility, and (5) numerical analysis, communication, and information technology skills. All programmes of study must meet the requirements of the TQF and can be assessed by the IQA system.

In order to ensure that the quality of graduates is in compliance with the learning outcomes at each qualification level of the TQF. OHEC introduced the TQF quality cycle with good practice for higher education institutions to use as guideline for implementation, including programme design, the teaching and learning process, and assessment. The Outcome-Based Education Approach and a series of workshops also introduced and held yearly in the four regions of Thailand with collaboration from Australia, and the European Union (EU). However, the TQF was designed for the flexibility of autonomous institutions to formulate their own models or adding up their identities or international standards based on the TQF for the benefits of their needs that serve the needs of community, society, and the country. Most of the quality of graduates must be comparable internationally. According to the TQF Quality Cycle, higher education institutions must follow the culture of quality. Every year,

information from the cycle shows their strengths and weaknesses while conducting programmes of study. This allows them the opportunity to fix any problems that may occur before other students in that batch of graduates. Since 2014, the OEC has been working on the NQF of Thailand. The OHEC has been actively involved to integrate and link qualifications from the TQF to the NQF.

To support higher education institutions in the aspect of IQA, OHEC established the QA Online system to be a channel for higher education institutions to submit their CHE IQA SAR to OHEC who serve as a responsible agency. With this system, other relevant organizations and the public can access and utilize the information according to their purposes. In addition, Professional Councils are also involved in the QA of Higher Education which consists of 17 units: (1) the Teachers Council of Thailand; (2) the Dental Council; (3) the Medical Council of Thailand; (4) the Physical Therapy Council of Thailand; (5) the Thailand Nursing and Midwifery Council; (6) the Lawyers Council Under the Royal Patronage; (7) the Medical Technology Council; (8) the Pharmacy Council of Thailand; (9) the Veterinary Council of Thailand; (10) the Council of Science and Technology Professionals; (11) the Council of Engineers; (12) the Architectural Council of Thailand; (13) the Federation of Accounting Professions under the Royal Patronage of His Majesty the King; (14) the Social Work Professional Council; (15) Council of Community and Public Health; (16) the Traditional Medical Council; and (17) the National Institute for Emergency Medicine.

6.3 Quality Assurance of Occupational Standards

Professional bodies in Thailand are established based on their legal basis in their communities, which have their own quality assurance standards.

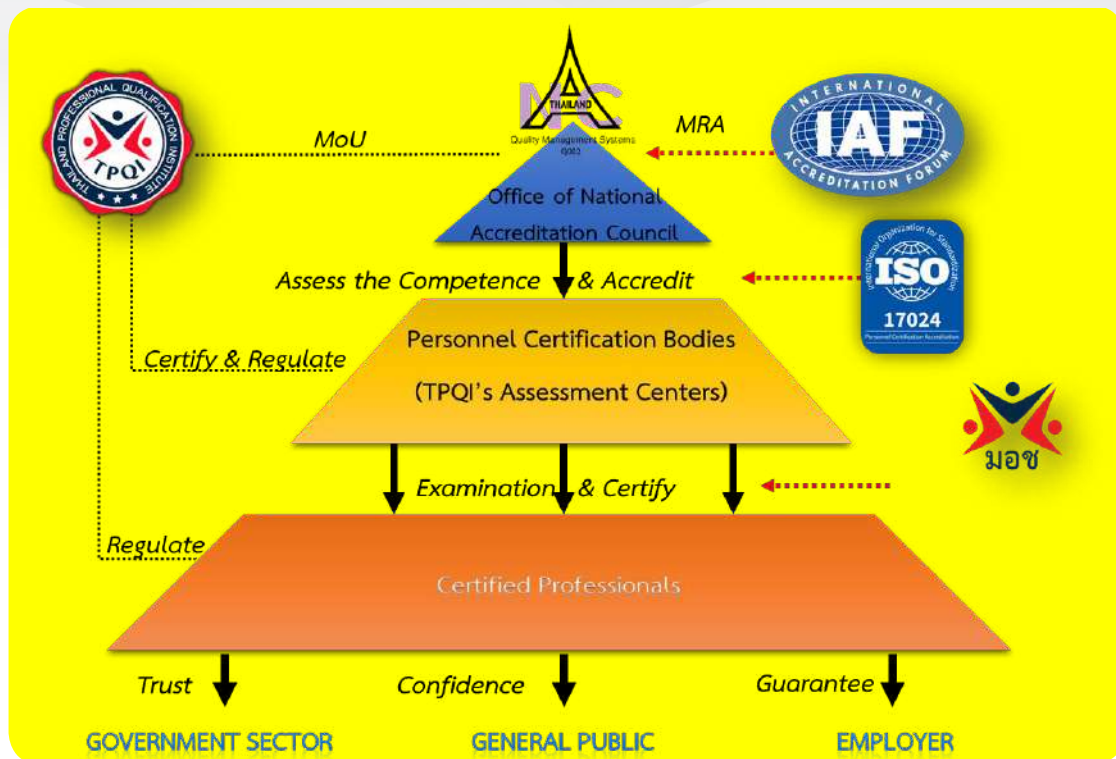
Occupational standards consist of the Professional Qualifications of the TPQI, and the National Skill Standards of DSD, and the details are as follows:

Professional Qualifications

The TPQI has applied the ISO/IEC 17024: 2012 in accrediting and monitoring the TPQI assessment centers. These agencies are responsible for competency assessments according to the principles, criteria, procedures, conditions and attributes identified by the TPQI. The three main activities related to the QA system are as follows:

- Coordinate and facilitate industrial groups or associations to identify and develop occupational standards according to the levels and descriptors of the professional qualifications framework in order to be endorsed as professional qualifications in various fields. The quality of those qualifications are carried out through endorsement and approval of the experts in the field as well as the leaders of concerned agencies and occupations.
- Train and register the auditors of assessment centers using the training programme on the assessment and auditing techniques, according to the principles of ISO 17024 in order to efficiently accredit the capabilities of assessment centers.
- Train and register the assessors who will assess the learners or candidates in the accredited assessment centers. TPQI has an assessor standards and training programme. The assessors need to have at least five years of experience in a particular field and to be trained in an assessment programme, which includes the following: (1) competency technique assessment; and (2) the related occupational standards and assessment guidelines.
- The Assessment Center runs the assessment process with assessment guidelines and registered assessors. The assessment methods include examination, demonstration and interview or the combination of both. The assessors will report the results of the assessment to the assessment center whether or not the people assessed are competent or not. It is the role of the assessment center to report the results to the Assessment Center Committee for approval. The Committee can question the process or the results of the assessment so assessors need to be available to clarify the issues raised by the committee.
- If there is no disagreement with the Assessment Center Committee, the assessment center will send the results to TPQI and then the qualification will be awarded to competent learners and candidates.

Figure 25: TPQI Quality Assurance Framework



National Skill Standards

Quality Assurance System of the Department of Skill Development (DSD) is carried out in two aspects through the 77 skill development institutes and centers nationwide accordingly:

- **Training**

DSD developed the ISO/IEC 17024 for the implementation of quality assurance training, with a specific scope of pre-employment training and upgrade training, manual development as well as related documents in training.

- **Skill Standard Testing**

As stated in the Skill Development Promotion Act B.E. 2545 (2002), the DSD develops National Skill Standards (NSS) in different occupations. NSS is the stipulation used to benchmark skills, knowledge, and the attitudes of people working in various occupations. To support this, the DSD has developed the ISO/IEC 17024 as a quality assurance system tool, which includes the monitoring of the skill standards testing itself, as well as the documents used in testing and also the related online testing activity, namely: (1) member applications; (2) member log-in; (3) personal information editing; (4) news; (5) contact; (6) dealing with complaints; (7) dealing with appeals; (8) document downloading; (9) document uploading; (10) document deleting, and (11) reporting back to DSD headquarters.

Criterion 7 :

Process Involvement of Main Public Authority and Stakeholders in Referencing Qualifications

The process of referencing has been devised by the main public authority and has been endorsed by the main stakeholders in the qualifications system

In the referencing process from NQF to AQRF, there are two main responsible committees: the National NQF Committee and Sub-Committee on Referencing from NQF to AQRF, with the Office of the Education Council (OEC) serving as a main government agency responsible for devising, organizing, and coordinating the working process of referencing.

The National NQF Committee, chaired by the Deputy Prime Minister consisted of all concerned agencies and stakeholders, providing policies, guidelines, endorses and monitors NQF to AQRF referencing process. After the referencing report was completed, it was submitted to the National NQF Committee for approval.

As mentioned in Criterion 2, the referencing process is the responsibility of the Sub-Committee on Referencing from NQF to AQRF, appointed on 22 May 2017 by the Deputy Prime Minister, Chairman of the National NQF Committee. The sub-committee is chaired by the Deputy Secretary General of the Office of the Education Council. The sub-committee members consisted of two national specialists in NQF and one foreign specialist in NQF. From the educational authorities are the Directors of Basic Education Standards and the Academic Bureau, the Vocational Education Standards Bureau, the Higher Education Quality and the Standards Bureau. From the occupational standards agencies are the Directors of TPQI, Skill and Testing Standard Bureau of DSD, representatives of the Federation of Thai Industries, and the Thai Chamber of Commerce. The related agency representatives

included the Department of Tourism, the Tourism Council of Thailand, the Ministry of Digital Economy and Society, the Department of Trade Negotiation, the Office of Non-Formal and Informal Education, and the Office of National Education Standards and Quality Assessment (Public Organization). The responsibilities of the Sub-Committee on Referencing from NQF to AQRF are mentioned in Criterion 2.

As described in Criterion 2 and Criterion 4, the involvement of main public authorities and stakeholders in referencing NQF to AQRF includes the following activities:

1. Involvement of all concerned agencies and stakeholders in the Sub-Committee on the Referencing process through a series of meetings and workshops.
 - The first two meetings aimed to provide knowledge and understanding of referencing qualifications, as well as analyzing the NQF and AQRF level descriptors and learning outcomes (on 20 September 2017, and 6 November 2017).
 - The third meeting was held to ensure that the concerned agencies and all stakeholders accepted and endorsed the principles of locating qualifications (on 9 January 2018).
 - A two-day workshop was organized to locate NQF qualifications details in AQRF and draft the report (on the 15-16 January 2018).
2. Submit the referencing principles and processes to the Sub-Committee on Referencing from the NQF to the AQRF for feedback and approval on 5 February 2018.
3. Submit a full draft referencing report to the Sub-Committee on Referencing from NQF to AQRF on 18 October 2018 and received approval.
4. Organize the Stakeholders Consultation Seminar on 21 November 2018. The objectives are for integration and to seek comments for improvement from various agencies and organizations. The AQRF committee from the Philippines, Malaysia, and Myanmar also participated in this seminar.
5. Submit the referencing results for approval by the National NQF Committee comprised of all stakeholders at a National NQF Committee Meeting on 24 January 2019.

Criterion 8 :

Involvement of International Experts

People from other countries who have had experienced in the field of qualifications are involved in the referencing process and its reporting

The involvement of international experts in the referencing process from Thailand NQF to AQRF could be divided into two groups. The first group were made up of international experts, who are members of the Sub-Committee on Referencing NQF to AQRF and provided guidelines for developing strategies and plans for referencing NQF to AQRF. The second group included AMS experts and involved in the workshop on referencing reports in November 2018.

8.1 International Expert in Sub-Committee on Referencing NQF to AQRF

Mr. Arnauld de Nadaillac, a French expert on qualifications and competency development, with extensive experience in working in the ASEAN community and Thailand, has been selected to serve as international experts on the Sub-Committee on Referencing from NQF to AQRF because of his expertise and experience of the qualifications framework. He received a Master's degree in Electrical Engineering and Vocational Training Management. He has also worked on qualification systems and human resources development in Thailand and ASEAN countries for more than 20 years. He also attended several meetings and workshops of the Sub-Committee on Referencing NQF to AQRF since 2017 and has provided EU experiences in implementing EQF, guidelines, and comments on the referencing process of Thailand NQF and AQRF. He advised that the process for the alignment of the five qualification sub-framework in the NQF use word analysis to compare the learning outcomes and the descriptors of the NQF in each level in Criterion 3, explained how quality assurance standards are applied across the sectors in Criterion 6 and also provided some infographic information, such as charts and examples in criteria 1, 3 and 4. This is critically important for outside readers to understand.

8.2 AMS International Experts

On 21 November 2018, the OEC and Sub-Committee on Referencing NQF to AQRF organized a meeting on the Consultation of Stakeholders on the Draft AQRF Referencing Report of Thailand at the Office of the Education Council, Bangkok, Thailand. A one-day workshop on Draft AQRF Referencing Report of Thailand was also conducted in order to receive feedback from all concerned agencies and stakeholders.

The objectives are to integrate and seek comments for improvement of draft referencing reports from various agencies and organizations. The representatives from the Philippines, Malaysia, and Myanmar participated in the workshop to acknowledge the referencing process and to provide useful feedback and opinions for improving the Draft AQRF Referencing Report of Thailand. The representatives are as follows:

1. Ms. Irene M. Issac, former Director of Technical Education and Skills Development Authority, the Philippines,
2. Ms. Norasikin Binti Yahya, representative of Malaysian Qualifications Agency, Malaysia,
3. Prof. Dr. Ma Ma Lay, representative of Myanmar National AQRF Committee, Myanmar.

All of the AMS International Experts mentioned that Thailand should provide more details and examples about the pathways and the major progression routes for formal education, informal education, non-formal education, and learning and training. The procedures for inclusion of five qualifications sub-framework in the NQF should also be elaborated on.

Criterion 9 :

Publication of the Referencing Report

One comprehensive report, setting out the referencing and the evidence supporting it shall be published by the competent national bodies and shall address separately and in order of each referencing criteria

The AQRF Referencing Report of Thailand has been developed by the Sub-Committee on Referencing NQF to AQRF, then approved by the National NQF Committee and endorsed by the Cabinet. It will be published in both Thai and English in a hard copy and uploaded on the website <http://www.onec.go.th/us.php/home/category/CAT0001159>.

The AQRF Referencing Report of Thailand contains complete information and details of Thailand educational qualifications, occupational standards and qualifications, responsible agencies, the process of both NQF development and AQRF referencing process. It can be used for implementation, monitoring, evaluation, and improvement of the NQF as well as a guideline for referencing qualifications with AMS. In the future, several handbooks for implementation of NQF and the referencing process from AQRF and AMS will be developed in order to ensure the quality of implementation.

Criterion 10 :

Outcomes of the Referencing

The outcome of referencing is published by the ASEAN Secretariat and by the main national public body

It is planned that after the approval of the Referencing Report of Thailand by the AQRFC Committee in 2019, the National NQF Committee consider and submitted the report to the Cabinet for its endorsement in two months. Then, the OEC will formulate an action plan with all of the concerned agencies for implementation.

The outcomes of the referencing report will not only be the tool for referencing qualifications among AMS, but also a mechanism in enhancing and mobilizing educational quality and AMS training.

Criterion 11 :

Following the Referencing Process

Following the referencing process all certification and awarding bodies are encouraged to indicate a clear reference to the appropriate AQRF level on new qualifications certificates, diplomas issued

According to the plan to enhance NQF and AQRF, new qualifications in Thailand should comply with NQF and AQRF, while the existing qualifications should be improved within five years. Therefore, all qualifications and awarding bodies will be encouraged to implement NQF and be able to reference it with the levels of AQRF.

OEC will take responsibility in enhancing, coordinating, and facilitating the referencing process of AMS, which require qualifications. The Thai NQF will be reviewed and adjusted, if needed, according to the changing demands on the need of the workforce every three years.

Hopefully, it would be beneficial for AMS in sharing new qualifications and learning pathways through on-line communication in order that a referencing process based on AQRF among NQFs of AMS can be easily accessed and used as a translation device for learner and worker mobility.



Annexes

Annex : 1

Members of the National NQF Committee

1.	Deputy Prime Minister	Chairman
2.	Minister of Education	Vice-Chairman
3.	National Specialist in NQF	Committee
4.	National Specialist in NQF	Committee
5.	National Specialist in NQF	Committee
6.	National Specialist in NQF	Committee
7.	Permanent Secretary, Ministry of Labour	Committee
8.	Permanent Secretary, Ministry of Education	Committee
9.	Permanent Secretary, Ministry of Commerce	Committee
10.	Permanent Secretary, Ministry of Industry	Committee
11.	Permanent Secretary, Ministry of Tourism and Sports	Committee
12.	Permanent Secretary, Ministry of Finance	Committee
13.	Permanent Secretary, Ministry of Agriculture and Cooperatives	Committee
14.	Permanent Secretary, Ministry of Transport	Committee
15.	Permanent Secretary, Ministry of Natural Resources and Environment	Committee
16.	Permanent Secretary, Ministry of Digital Economy and Society	Committee
17.	Permanent Secretary, Ministry of Public Health	Committee
18.	Chairman, Federation of Thai Industries	Committee
19.	Chairman, Thai Chamber of Commerce	Committee
20.	Chairman, Tourism Council of Thailand	Committee
21.	Secretary General, National Economic and Social Development Board	Committee
22.	Secretary General, Civil Service Commission	Committee
23.	Secretary General, Higher Education Commission	Committee
24.	Secretary General, Vocational Educational Commission	Committee
25.	Secretary General, Basic Education Commission	Committee
26.	Director General, Department of Skill Development	Committee
27.	Director, Thailand Professional Qualification Institute (Public Organization)	Committee

28.	Director, Office for National Education Standards and Quality Assessment (Public Organization)	Committee
29.	Secretary General, the Education Council	Committee and Secretary
30.	Deputy Secretary General, the Education Council	Committee and Assistant Secretary
31.	Deputy Director, Thailand Professional Qualification Institute (Public Organization)	Committee and Assistant Secretary
32.	Director, Office of Skill Standard and Test Development, Department of Skill Development	Committee and Assistant Secretary
33.	Director, Education Policy and Planning Bureau, Office of the Education Council	Committee and Assistant Secretary

Annex : 2**Missions of Other Sub-Committees under
the National NQF Committee****1. Sub-Committee on NQF Mobilization**

The Sub-Committee on NQF Mobilization was appointed on 22 May 2017 by the Deputy Prime Minister, comprised of 22 members with the following missions:

- (1) To draft an implementation plan for NQF in order to be endorsed by the National NQF Committee before submitting it to the Cabinet for approval
- (2) To establish and publicize knowledge and understanding of the NQF Revised Edition
- (3) To coordinate and monitor the NQF implementation plan
- (4) To perform other missions according to the assignment of the National NQF Committee

2. Sub-Committee on Database System Development

The Sub-Committee on Database System Development was appointed on 4 August 2017 by the Deputy Prime Minister and comprised of 13 members with the following missions:

- (1) To develop curriculum, information, database system and occupational standards in relation to NQF
- (2) To build up connections, information, and networks of agencies affecting development and utilization, according to NQF
- (3) To appoint the Committee as deemed necessary
- (4) To perform missions according to the NQF Committee, as assigned

3. Sub-Committee on Benchmarks and Quality Assurance System Development in Relation to NQF

The Sub-Committee on Benchmarks and Quality Assurance System Development in relation to the NQF was appointed on 4 August 2017 by the Deputy Prime Minister and consisted of 13 members, who had the following missions:

- (1) To set the standard criteria and accreditation according to the NQF
- (2) To develop a quality assurance system in relation to the NQF
- (3) To appoint the committee as deemed necessary
- (4) To perform missions according to NQF Committee, as assigned

4. Sub-Committee on the Development of a Model for NQF Implementation

The Sub-Committee on the Development of a Model for NQF Implementation was appointed by the Deputy Prime Minister in order to make sure that the implementation of the NQF through linking educational qualifications and occupational standards in competency-based curricula according to the NQF are clearly understood by the concerned agencies. The eight areas of occupational groups are identified for development of new curriculum according to the NQF, which included the following:

- (1) Infrastructure Logistics
- (2) Logistics and Supply Chain Management
- (3) Robotics and Automation
- (4) Information, Communication Technology and Digital Content
- (5) Food and Agriculture
- (6) Petrochemicals, Chemicals, Energy and Alternative Energy
- (7) Mold and Die
- (8) Aviation Maintenance Technicians

The Sub-Committee for the Development of a Model for NQF Implementation is chaired by leaders of the private industrial sector. The members of the sub-committee mainly consisted of the industrial sector, education, TPQI representatives and DSD, with the following missions:

- (1) To develop strategies and plans for manpower demands from 2019 to 2022
- (2) To identify required competency standards and qualifications according to the NQF
- (3) To support curriculum development and the delivery system
- (4) To provide guidelines for teacher training and the improvement of education facilities and equipment
- (5) To develop learning pathways for the learners

Those eight groups of occupations were selected to organize a model for NQF implementation because they already worked toward the NQF since 2013, and it proved that they had qualified graduates for employment. Therefore, the input and process of NQF implementation would be systematized and developed as a model in order to clearly provide guidelines to others.

The outputs of these eight sub-committees will be considered and approved by the National NQF Committee before disseminating them to all concerned agencies as a Model for NQF Implementation. The plans created by these eight sub-committees will be implemented by responsible agencies.

Annex : 3

Members of the Sub-Committee on Referencing NQF to AQRF

1.	Mrs. Siripan Choomnoom (National Specialist in NQF)	Sub-Committee Adviser
2.	Assoc. Prof. Yongyuth Chalamwong (National Specialist in NQF)	Sub-Committee Adviser
3.	Mr. Arnauld de Nadaillac (Foreign Specialist in NQF)	Sub-Committee Adviser
4.	Deputy Secretary - General, the Education Council	Chairman
5.	Representative of Department of Skill Development	Sub-Committee
6.	Representative of Thailand Professional Qualification Institute (Public Organization)	Sub-Committee
7.	Representative of Office of the Higher Education Commission	Sub-Committee
8.	Representative of Office of the Vocational Education Commission	Sub-Committee
9.	Representative of Office of the Basic Education Commission	Sub-Committee
10.	Representative of Office of the Non-Formal and Informal Education	Sub-Committee
11.	Representative of Department of Tourism and Sports	Sub-Committee
12.	Representative of Office of Nation Education Standards and Quality Assessment (Public Organization)	Sub-Committee
13.	Representative of Department of Trade Negotiation	Sub-Committee
14.	Representative of Department of ASEAN Affairs	Sub-Committee
15.	Representative of Ministry of Digital Economy and Society	Sub-Committee
16.	Representative of Federation of Thai Industries	Sub-Committee
17.	Representative of Thai Chamber of Commerce	Sub-Committee
18.	Representative of Tourism Council of Thailand	Sub-Committee
19.	Director, Education Policy and Planning Bureau, Office of the Education Council	Sub-Committee and Secretary
20.	Representative of Office of the Education Council	Sub-Committee and Assistant Secretary
21.	Representative of Office of the Education Council	Sub-Committee and Assistant Secretary

Annex : 4

Main Legislations of all Concerned Bodies Involves in Implementing NQF and AQRF Referencing Process

Organizations	Main responsibilities in implementing NQF	Main related Laws and Regulations
1. The National NQF committee	Formulate policies and measures in implementing NQF and AQRF	Resolution of the Cabinet designating NQF Committee on 2 August 2016
2. The Sub-Committee on Referencing NQF to AQRF	Develop strategies and plan for referencing NQF to AQRF as well as make an outline and draft a report on Referencing AQRF	Order of the National NQF committee designating Sub-Committee on Referencing NQF to AQRF on 22 May 2017
3. OEC	Serve as a central authority for coordinating with all agencies involved in NQF and AQRF	1. National Education Acts, B.E. 2542 (No. 2), B.E. 2545 (No. 3), and B.E. 2553 2. Ministry of Education Act, B.E. 2546 3. Resolution of the Cabinet on NQF (revised) on 18 April 2017
4. Five sub-sector qualifications authorities		
(1) OBEC	Provide policies, guidelines for education development plans, educational standards and the core curricula of basic education according to NQF and involve in the AQRF referencing process	1. National Education Acts, B.E. 2542 (No. 2), B.E. 2545 (No. 3), and B.E. 2553 2. Ministry of Education's Rule on Level Division and Categories of Basic Education, B.E. 2546 3. Ministry of Education's Rule on Criteria and Education Quality Assurance Process for Basic Education Schools, B.E. 2546 4. Ministry of Education Act on Administration, B.E. 2546
(2) OVEC	Provide and promote vocational education and training according to the consideration of quality and professional excellence, to develop vocational education and training to meet qualities and standards, according to NQF and AQRF, if any	1. National Education Acts, B.E. 2542 (No. 2), B.E. 2545 (No. 3), and B.E. 2553 2. Ministry of Education Act on Administration, B.E. 2546 3. Vocational Education Act, B.E. 2551

Organizations	Main responsibilities in implementing NQF	Main related Laws and Regulations
(3) OHEC	Study, analyze, and research the problems and guidelines on higher educational development, according to the needs of the National Economic and Social Development Plan and the National Education Plan and the National Mutual Agreement as well as NQF	<ol style="list-style-type: none"> 1. National Education Acts, B.E. 2542 (No.2), B.E. 2545 (No.3), and B.E. 2553 2. Ministry of Education's Rule on Criteria and Education Quality Assurance Process for Higher Education Institutions, B.E. 2546 3. Ministry of Education Act on Administration, B.E. 2546 4. Private Higher Education Institution Act, B.E. 2546 as Amended (No.2), B.E. 2540
(4) DSD	Develop national skill standards framework according to NQF and AQRF and improve training programmes for national skill standard testing linked to NQF and AQRF	<ol style="list-style-type: none"> 1. Government Organization Restructuring Act, B.E. 2545 2. Regulation of the Prime Minister's Office on National Workforce Development and Occupation Training, B.E. 2552 3. Ministry's Rule on the Structure of Department of Skill Development, Ministry of Labour, B.E. 2559 4. Skill Development Promotion Act, B.E. 2545
(5) TPQI	Develop Professional Qualification Framework according to NQF and AQRF, promote and support educational and training agencies to implement occupational qualifications relevant to NQF and AQRF	Royal Decree on Establishing Thailand Professional Qualification Institute (Public Organization), B.E. 2554
5. Other concerned agencies		
ONESQA	Develop the criteria and external assessment methods and evaluate the results for monitoring education institutions	<ol style="list-style-type: none"> 1. National Education Acts, B.E. 2542 (No.2), B.E. 2545 (No.3), and B.E. 2553 2. Royal Decree on Establishing the Office of National Standards and Quality Assessment (Public Organization), B.E. 2543 and (No.2), B.E. 2552 3. Public Organization Act, B.E. 2542 4. Ministry of Education's Rule on Criteria and Quality Assurance Procedure, B.E. 2553

Annex : 5

Locating Learning Outcomes of Education Qualifications in NQF

Learning Outcomes		
Domain	NQF	Education Qualifications
	Level 1	Lower Secondary
• Knowledge	• <u>basic, general</u> about <u>occupation, communication</u> in the world of work	• <u>basic, general</u> knowledge, <u>occupation, and communication</u>
• Skills	• <u>basic skills</u> in occupation • skills in communication, life skills, and skills in <u>routine operation</u> without complexity	• <u>basic skills</u> in working with others, and skills in ICT for <u>routine operation</u>
• Application and Responsibility	• <u>ability in routine operations</u> according to required steps • ability in operation <u>under close supervision</u>	• <u>ability in routine operations under close supervision</u> • ability in solving basic problems
<p>Analysis: The learning outcomes of Basic Education at the Lower Secondary level do not have more details than the NQF. However, the main descriptors of the learning outcomes of Lower Secondary Qualifications and NQF level 1 are aligned because there are similarities between learning outcomes of the three domains. The knowledge domain is focused on “basic and general knowledge about occupation”. The skill domains indicated “basic skills and routine operation”, while the application and responsibility domains covered “ability in operation process and close supervision”. Therefore, descriptors of learning outcomes of Lower Secondary Qualification are located in NQF level 1.</p>		
Domain	Level 2	Upper Secondary
• Knowledge	• <u>communication</u> and <u>ICT</u> in <u>general</u> and factual of the field	• <u>general</u> knowledge of occupation, <u>ICT</u> , and <u>communication</u>
• Skills	• skills in operation according to required steps and standards • <u>thinking skills, life skills, and communication skills with initiatives</u>	• <u>thinking skills</u> , problem-solving skills in standard and routine work, <u>communication skills</u> • <u>life skills</u> , and learning to learn <u>skills for initiatives</u>

Learning Outcomes		
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • ability in operation according to principles and standards • ability in operation, looking after and <u>making basic decisions and problem-solving</u> 	<ul style="list-style-type: none"> • ability in operation under standard and close supervision • ability in <u>making basic decisions and problem solving</u>
Domain	Level 2	Upper Secondary
<p>Analysis: Descriptors of the three domains of Upper Secondary learning outcomes is similar to that of NQF level 2. The same underlined keywords include ICT, communication, thinking skills, communication skills, life skills and initiatives, making basic decisions and problem-solving. Therefore, the descriptors of the learning outcomes of Upper Secondary Qualification are located in NQF level 2.</p>		
Domain	Level 3	Vocational Education Certificate
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>principles of specialized fields and basic analysis</u> 	<ul style="list-style-type: none"> • general <u>principles of the field and basic analysis</u> • English and ICT
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • <u>skills in the selection and application of basic tools and materials</u> • <u>communication, ICT and the skills related to safety issues</u> 	<ul style="list-style-type: none"> • <u>skills in the selection and application of basic tools and materials</u> • <u>communication and ICT</u> • <u>thinking and problem-solving skills and the skills related to safety issues</u>
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • <u>ability to operate as planned and adjust without complex changes</u> • ability in independently providing basic advice needed for decision-making and <u>planning for problem-solving</u> for some issues • application of knowledge, skills in the field, ICT, communication in <u>problem-solving</u>, and work in a <u>new context</u> including <u>responsibilities for oneself and others</u> 	<ul style="list-style-type: none"> • <u>ability in operation as planned</u> • ability in making <u>changes and problem-solving in a new context</u> • <u>ability of the self and the responsibilities of others</u>

Learning Outcomes

Analysis: There are similarities between the three domains of TVET learning outcomes and level 3 of the NQF, especially keywords, which include knowledge of the principles of the field, skills in the selection and the application of basic tools and materials, skills in the communicative ICT and skills related to safety issues, and ability to operate as planned, making changes and being responsible for others.

Therefore, the descriptors of the learning outcomes of the Vocational Education Certificate are located in NQF level 3.

Domain	Level 4	Technical Education Diploma I
• Knowledge	• <u>theoretical and technical, covering an occupational field. English + ICT related to work</u>	• <u>theoretical and technical, covering an occupational field. English + ICT related to work</u>
• Skills	• <u>skills in adapting a suitable operational process and related to safety issues</u>	• <u>skills in adapting a suitable operational process and related to safety issues</u>
• Application and Responsibility	• <u>ability to operate as planned and adjusted to changes</u> • <u>ability in problem-solving by oneself and coordination of problem-solving with unfamiliar issues</u>	• <u>ability to operate as planned and adjust to changes</u> • <u>ability in problem-solving with unfamiliar issues</u>

Analysis: It is obvious that the learning outcomes of the Technical Education Diploma I are the same as that of NQF in level 4 in those three domains, as underlined.

Therefore, the descriptors of the learning outcomes of Technical Education Diploma I are located in NQF level 4.

Domain	Level 5	Technical Education Diploma II
• Knowledge	• <u>theoretical and in-depth technical, covering an occupation field</u>	• <u>theoretical and in-depth technical field</u>
• Skills	• <u>skills in thinking, analyzing, and problem-solving</u> • <u>skills in planning, managing and operation evaluation</u>	• <u>skills in thinking, analyzing, problem-solving, planning, managing and operation evaluation</u>
• Application and Responsibility	• <u>ability in operation under changing situation at all times</u> • <u>ability in evaluation of operations by oneself for complex problem-solving and abstract issues</u>	• <u>ability in operations under changing situations</u> • <u>ability in evaluation of operation by oneself for complex problem-solving and abstract issues</u>

Learning Outcomes		
<p>Analysis: The learning outcomes of Technical Education Diploma II are almost the same as that of NQF in level 5. Only knowledge domain descriptors of the NQF are focused on the occupational field and the application and responsibility domain indicated “at all times”. Therefore, the descriptors of the learning outcomes of Technical Education Diploma II are located in NQF, level 5.</p>		
Domain	Level 6	Bachelor’s Degree
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>theory and detailed specific occupation field</u> 	<ul style="list-style-type: none"> • systematic <u>body of knowledge in a field</u> and the underlying principles and <u>theories</u> are associated with it • <u>specialized knowledge in a field</u>
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • <u>skills in thinking, analyzing, reviewing, and problem comparison</u> 	<ul style="list-style-type: none"> • <u>skills in thinking, analyzing, and problem comparison</u> • skills in investigation, comprehension and the evaluation of new concepts • computer skills and communication
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • complex problem-solving and change • <u>initiation, improvement, and strategic planning in complex and abstract problem-solving and management in the field</u> 	<ul style="list-style-type: none"> • application of issues and problems • <u>complex problem-solving and changes</u> • <u>Initiation, improvement and strategic planning in complex and abstract problem-solving and management in the field</u>
<p>Analysis: It is obvious that the three domain descriptors of NQF level 6 are similar and cover learning outcomes of the Bachelor’s degree, even there are more details. Therefore, the descriptors of the learning outcomes of the Bachelor’s degree are located in NQF level 6.</p>		
Domain	Level 7	Master’s Degree
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>the in-depth forefront of the field</u> 	<ul style="list-style-type: none"> • <u>possess a comprehensive, coherent and systematic body of knowledge in a field and the underlying principles and theories associated with it</u>
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • skills in thinking, <u>analyzing, initiating research, expanding knowledge, practice, academic English usage</u> 	<ul style="list-style-type: none"> • cognitive skills, <u>initiating research and expanding knowledge</u> • interpersonal skills and responsibility • numerical analysis and communication and ICT skills • <u>English skills</u>

Learning Outcomes		
Domain	Level 7	Master's Degree
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • <u>solve complex and unpredictable problems, develop and try out new methods and to search for innovative solutions</u> • <u>provide judgment and be responsible as an expert with knowledge of operations and management</u> • <u>possess expertise with theoretical and practical knowledge and management</u> 	<ul style="list-style-type: none"> • <u>apply the theory of solving complex and unpredictable problems, to develop and try out new methods</u> • <u>able to work with others, possess leadership and search for innovative solutions</u> • <u>synthesize research works, planning and able to conduct research schemes by themselves</u> • <u>provide judgment and be responsible as an expert with knowledge of operations and management</u> • <u>possess expertise with theoretical and practical knowledge and management</u>

Analysis: Three domains descriptors of Master's Degrees had more details than that of NQF descriptors, however, they are similar and indicate the same objectives.

Therefore, descriptors of learning outcomes of the Master's degree are located in NQF level 7.

Domain	Level 8	Doctoral Degree
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>the highest and most advanced and specialized level</u> 	<ul style="list-style-type: none"> • <u>develop innovation or to create new knowledge</u> • <u>have in-depth understanding in the core knowledge and specialized level</u> • <u>know research techniques and wisely formulate an acceptable summary</u>

Learning Outcomes		
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • <u>initiate research schemes that create knowledge or practice</u> • <u>use English in academic presentations</u> • <u>conduct research, published and internationally accepted</u> 	<ul style="list-style-type: none"> • able to screen statistical and mathematical data on complex issues to be used in research • <u>initiate research schemes that create knowledge or practice</u> • efficiently communicate with appropriate technology • <u>use English in academic presentations</u> • <u>conduct research, published and internationally accepted</u>
Domain	Level 8	Doctoral Degree
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • <u>have expertise in complex problem-solving, to develop and to test new theories or to search for new solutions with complex and abstract issues</u> • <u>authorized to provide knowledge in the field for research management and responsible for enhancing knowledge and practices, creating new ideas and procedures in the field</u> 	<ul style="list-style-type: none"> • <u>use deep understanding in the theories and techniques in seeking knowledge</u> • <u>problem-solving with new know-how</u> • <u>synthesize research works and theories of knowledge</u> • <u>design and conduct key and complex research schemes for new knowledge</u> • possess a high capacity in expressing opinions and outstanding leadership • plan, analyze and solve highly complex problems by themselves
<p>Analysis: Doctoral degree domain descriptors have the same issues as that of NQF level 8, even though there are more details reflecting needs of Higher Education Qualifications, i.e. statistics and mathematics. Therefore, descriptors of learning outcomes of Doctoral degrees are located in NQF level 8.</p>		

Annex : 6

Locating Learning Outcomes/Work Outcomes of Occupational Standards in NQF

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 1	PQ1	OS 1
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>basic, general knowledge of occupation</u> • communication in the world of work 	<ul style="list-style-type: none"> • <u>basic knowledge in a field of work</u> 	<ul style="list-style-type: none"> • <u>basic knowledge in a field of work</u>
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • <u>basic skills in occupation</u> • <u>communication skills, life skills, and skills in routine operation without complexity</u> 	<ul style="list-style-type: none"> • <u>basic skills for routine processes or simple work orders</u> 	<ul style="list-style-type: none"> • basic skills in occupation • communication skills
<ul style="list-style-type: none"> • Application and Responsibility 	<ul style="list-style-type: none"> • ability in <u>routine operations according to required steps</u> • ability in <u>operation under close supervision</u> 	<ul style="list-style-type: none"> • competence in <u>work orders under supervision</u> • Responsibility to <u>basic jobs</u> and interactions with their work according to the work orders of the supervisor 	<ul style="list-style-type: none"> • responsibility to <u>basic jobs</u> • ability in <u>operations under close supervision</u>

Analysis: The learning and work outcomes of PQ1 and OS1 are similar to the three domains of NQF level, even though there are more details and different wording is used. For the knowledge domain, “basic and general knowledge in field of work or occupation”, are identified. Basic skills are indicated in NQF, PQF, and OS, while communication skills are shown in NQF and OS only. For the application and responsibility domain, PQ1 and OS1 described “responsibility to basic job” while NQF used the term “ability in routine work”, and “work under close supervision” are focused by NQF, PQF, and OS.

Therefore, it is concluded that the descriptors of learning outcomes and work outcomes of PQ1 and OS1 are located at NQF level 1.

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 2	PQ 2	OS 2
• Knowledge	• communication and ICT in <u>general and fact-based</u> in the field	• <u>operational knowledge in a field of work</u>	• <u>knowledge in a field of work</u>
• Skills	• <u>skills in operation according to required steps and standards</u> • thinking skills, life skills and communication skills with initiatives	• <u>apply working skills for work instruction</u>	• <u>working skills under supervision</u> • communication skills • teamwork skills
• Application and Responsibility	• ability in operations according to <u>principles and standards</u> • ability in operation, <u>looking after, making basic decisions and problem-solving</u>	• <u>competence for a standard processing</u> under supervision • responsibility for own performance <u>following assignments</u> and working with others	• responsibility to work • discipline and team work • <u>ability in operation, looking after and making basic decisions and problem-solving</u>

Analysis: The descriptors of learning and work outcomes of NQF, PQ2, and OS2 on knowledge domain descriptors of learning and work outcomes are similar in “factual in the field” in NQF level 2 and “operation knowledge in a field of work” of PQ2 and OS2. In terms of the skills domain, “ability in operation according to principle and standard” of NQF is aligned with “skills for work instruction” of PQ2 and “working skill under supervision” in OS2. For the application and responsibility domain, “ability in operation according to the principles and standards, and looking after and making basic decisions and problem-solving” of NQF are linked with, “competence for standard procession under supervision, and following assignments” of PQ2 and “ability in operation, looking after and making basic decisions and problem-solving” of OS2. The wording may be different, but they have identical objectives. Therefore, it is concluded that learning outcomes and work outcomes of PQ2 and OS2 are located in NQF level 2.

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 3	PQ 3	NSS 1
• Knowledge	<ul style="list-style-type: none"> principles of <u>specialized fields and basic analysis</u> 	<ul style="list-style-type: none"> principles of <u>knowledge and analysis in a field of work</u> 	<ul style="list-style-type: none"> <u>principles manual</u> principles of occupational safety use of ICT
• Skills	<ul style="list-style-type: none"> <u>skills in the selection and application of basic tools and materials</u> communicative <u>ICT</u> and skills related to <u>safety issues</u> 	<ul style="list-style-type: none"> <u>apply working skills</u> for decision-making, methods, procedures and <u>tools following the standard</u> 	<ul style="list-style-type: none"> <u>work skills</u> and the use of <u>tools following the standard</u> communicative <u>ICT</u> and skills related to <u>safety issues</u>
• Application and	<ul style="list-style-type: none"> <u>ability to operate as planned</u> and adjust oneself without complex changes <u>ability to independently provide basic advice</u> needed for decision making and planning for problem-solving, application of knowledge, skills in the field, ICT, communication in <u>problem-solving</u>, and work in the new context including responsibility for oneself and others 	<ul style="list-style-type: none"> <u>competence for a work plan</u> or standard, decision-making and <u>problem-solving</u> following supervisor's instruction 	<ul style="list-style-type: none"> <u>team work</u> aware of safety in responsible jobs <u>responsibility for the quality of work following the assignment</u>
----- Responsibility		<ul style="list-style-type: none"> <u>responsibility for the quality of work following the assignment and support of colleagues and other department</u> 	

Analysis: Knowledge domain of learning outcomes and work outcomes of PQ3 and NSS1 are “principles of the field and basic analysis”, while in NQF domain, it is indicated that “specialized fields and basic analysis” are almost the same. With regard to the skills domain, both PQ3 and NSS1 have keywords including “working skills, tools following the standard”, while NQF identified “skills in selection basic tools and materials”, which are very similar. For the application and responsibility domain in PQ3 and NSS1 described “responsibility for quality of work following the assignment” while in NQF domain, to identify the “ability to operate as planned and ability in independently providing basic advice” which can be comparable to PQ3 and NSS1. There are more details in the NQF domain.

Therefore, it is concluded that descriptors of learning outcomes and work outcomes of PQ3 and NSS1 are located in NQF level 3.

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 4	PQ 4	NSS 2
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>theoretical and technical</u>, covering an occupation field • English + ICT <u>related to work</u> 	<ul style="list-style-type: none"> • <u>technical or theoretical knowledge in a field of work</u> 	<ul style="list-style-type: none"> • <u>academic knowledge for occupations</u> • usage of IT for work • ICT and English related to work
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • <u>skills in adapting a suitable operation process related to safety issues</u> 	<ul style="list-style-type: none"> • <u>apply working skills in problem-solving and safety in a field of work</u> 	<ul style="list-style-type: none"> • skills in work according to the standards set by expertise • <u>skills in adapting a suitable operation process related to safety issues</u> • skills in supervision for subordinates
<ul style="list-style-type: none"> • Application and 	<ul style="list-style-type: none"> • <u>ability to operate as planned and adjust to changes</u> • ability in problem-solving by oneself and coordinate for problem-solving of unfamiliar issues 	<ul style="list-style-type: none"> • <u>competence for revision of quality or continuous work by oneself</u> 	<ul style="list-style-type: none"> • <u>responsibility for work</u> • awareness of safety in a working environment
<ul style="list-style-type: none"> • Responsibility 		<ul style="list-style-type: none"> • responsibility for work supervision and continuous work • responsibility for their own and others' occupational health and safety (OHS) 	

Analysis: Learning outcomes and the outcomes of PQ4 and NSS2 in knowledge domains focus on “technical or academic knowledge in occupations, ICT and English related to work”, which are similar to that of NQF level 4. In terms of the skills domain, “apply working skills in problem solving and safety issues” are identified in PQ4 and NSS2, while in NQF “skills in adapting a suitable operation process related to safety issues” are described. For application and responsibility, the “ability to operate as planned and adjust to changes” are indicated in NQF while in PQ4 and NSS2 are concerned with “competence for revision of quality and responsibility for work” which are similar but have different wordings. Therefore, the descriptors of learning and work outcomes of PQ4 and NSS2 are located in NQF level 4.

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 5	PQ 5	NSS 3
<ul style="list-style-type: none"> Knowledge 	<ul style="list-style-type: none"> <u>theoretical and in-depth technical knowledge covering an occupation field</u> 	<ul style="list-style-type: none"> <u>particular technical or theoretical knowledge in a specific field of work</u> 	<ul style="list-style-type: none"> <u>particular technical or theoretical knowledge in a specific field of work</u> personnel administration basic knowledge of foreign languages ICT usage in planning and controlling work
<ul style="list-style-type: none"> Skills 	<ul style="list-style-type: none"> <u>skills in thinking, analyzing, and problem-solving</u> <u>skills in planning, managing and operation evaluation</u> 	<ul style="list-style-type: none"> <u>apply working skills to complex tasks and analyze relevant information in a field of work</u> 	<ul style="list-style-type: none"> <u>apply theories and principles in working and planning skills</u> ICT and English skills
<ul style="list-style-type: none"> Application and Responsibility 	<ul style="list-style-type: none"> <u>ability in operations under changing situations at all time</u> <u>ability in evaluation of operations by oneself for complex problem-solving and abstract issues</u> 	<ul style="list-style-type: none"> <u>competence in complex tasks evaluating activities and managerial productivity</u> responsibility for supervision of operational or project plan, evaluation, and problem-solving responsibility in leadership, advice and job transferability 	<ul style="list-style-type: none"> <u>ability in operation under changing situation</u> <u>ability in evaluation of operations by oneself for complex problem-solving</u> aware of safety in working and work environment

Analysis: Learning outcomes and work outcomes of PQ5 and NSS3 in the knowledge domain indicate “particular technical or theoretical knowledge in a specific field of work” while NQF described it as: “theoretical and in-depth technical knowledge, covering an occupation field”, which are very similar. For skills domain, “apply working skills in complex tasks and analyze, apply theories and principles in working, planning skills” are identified in PQ5 and NSS3, while NQF domain identified “skills in thinking, analyzing, problem-solving, and planning”, with more details than that of PQ5 and NSS3. For application and responsibility, PQ5 and NSS3 identified “competence for complex tasks and ability in operations under changing situations and evaluation” while in NQF focus on “ability in operations under changing situations and evaluation”, which are very similar to PQ5 and NSS3. Therefore, it can be concluded that descriptors of the learning and work outcomes of PQ5 and NSS3 are located in NQF level 5.

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 6	PQ 6	NSS 4
• Knowledge	• <u>theory, detailed and specific occupation field</u>	• <u>advanced technical or theoretical knowledge</u> in one or more fields of work	• <u>advanced technical or theoretical knowledge</u> • design working systems • using foreign language for communication at the medium level • using ICT in administration
• Skills	• <u>skills in thinking, analyzing, reviewing, and problem comparison</u>	• <u>apply advanced skills for complex tasks</u> and develop new strategies or techniques in a field of work	• <u>skills in thinking, analyzing, reviewing, and problem comparison</u> • ICT and English skills • skills in planning and personnel administration
• Application and Responsibility	• <u>complex problem-solving and changing</u> • initiate, improve, <u>strategic planning</u> in complex and abstract <u>problem-solving</u> and managing in the field	• competence in strategic thinking and complex tasks • responsibility for <u>strategic management</u> for productivity and <u>complex problem-solving</u> • professional responsibility and advice to specialized consultants	• initiate, improve, <u>strategic planning</u> in <u>complex and abstract problem-solving</u> and <u>managing in the field</u> • aware of safety in working and the work environment

Analysis: The learning and work outcomes of PQ6 and NSS4 in knowledge domain are concerned with “advanced technical or theoretical knowledge in one of more fields”, which are similar to “the theory and detailed specific occupation field” of NQF. The skills domain of PQ6 and NSS4 are identified as “applying advanced skills for complex tasks and skills in thinking, analyzing, reviewing and problem comparison” and very similar to that of NQF. For application and responsibility domain “competence in strategic thinking and complex tasks, strategic management and problem solving” are identified, as well as the NQF. Therefore, it was concluded that descriptors of learning and work outcomes of PQ6 and NSS4, which are located in NQF level 6.

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 7	PQ 7	NSS 5
• Knowledge	<ul style="list-style-type: none"> • <u>in-depth forefront of the field</u> 	<ul style="list-style-type: none"> • <u>highly specific knowledge</u> or systematic development of new knowledge in a field of work 	<ul style="list-style-type: none"> • <u>in-depth forefront of the field</u> • develop a system of products and services • use ICT in problem-solving
• Skills	<ul style="list-style-type: none"> • <u>skills in thinking, analyzing, initiating research, expanding knowledge, practice, academic English usage</u> 	<ul style="list-style-type: none"> • apply advanced skills for new knowledge development in a field of wor 	<ul style="list-style-type: none"> • <u>skills in thinking, analyzing, and evaluating</u> • supervising usage of ICT in administration • using foreign language for high-level communication skills in negotiation and benefit coordination
• Application and	<ul style="list-style-type: none"> • <u>solve complex and unpredictable problems, develop and try out new methods, search for innovative solutions</u> • <u>provide judgment and expertise in operations and management</u> • expertise with theoretical and practical knowledge and management 	<ul style="list-style-type: none"> • <u>competence in system development, knowledge and innovation of organizations</u> 	<ul style="list-style-type: none"> • <u>solve complex and unpredictable problems</u> • aware of safety at work and in a work environment • <u>provide judgment and responsibility as an expert</u>
----- Responsibility		<ul style="list-style-type: none"> • <u>responsibility for policy management</u> and unpredictable problem-solving in the new context of the organization • <u>responsibility for providing comments for experts in each occupation</u> 	

Analysis: Learning outcomes and work outcomes of PQ7 and NSS5 in knowledge domain include “highly specific knowledge and in depth forefront of the field” are the same as NQF. In terms of the skills domain “apply advanced skills for new knowledge and skills in thinking, analyzing, and evaluating” are similar to the NQF. For application and responsibility, “competence for system development, knowledge and innovation, solve complex and unpredictable problems, provide judgment and responsible as expert, responsibility for policy management” are similar to the NQF. The detail and wording of the PQ7, NSS5, and NQF may be slightly different, but have the same objectives.

Therefore, it was concluded that descriptors of learning and work outcomes of PQ7 and NSS5 are located in NQF level 7.

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 8	PQ 8	NSS 6
<ul style="list-style-type: none"> • Knowledge 	<ul style="list-style-type: none"> • <u>the most advanced and highest specialized level</u> 	<ul style="list-style-type: none"> • <u>forefront knowledge</u> for creation of the most outstanding 	<ul style="list-style-type: none"> • <u>most advanced and highest specialized</u> • plan formulation of policies and strategies of organizations • develop work system and innovation
<ul style="list-style-type: none"> • Skills 	<ul style="list-style-type: none"> • <u>initiate research to create knowledge or practice</u> • use English in academic presentations • conduct research, published and accepted internationally 	<ul style="list-style-type: none"> • <u>apply the most advanced skills for a challenging task and the creation of new concept in a field of work</u> 	<ul style="list-style-type: none"> • <u>set policies, targets and directions of organization</u> • supervise organizational administration, budget and personnel • monitor and assess the implementation of organization • expertise in using foreign languages in communication • applying ICT and innovation in administration • skills in negotiation and benefit coordination
<ul style="list-style-type: none"> • Application and <hr/> <ul style="list-style-type: none"> • Responsibility 	<ul style="list-style-type: none"> • <u>have expertise in complex problem-solving, develop and test new theories or search for new solutions with complex and abstract issues</u> • <u>authorized to provide knowledge in the field for management</u> research and responsible for enhancing knowledge and practice, creating new ideas and processes in the field 	<ul style="list-style-type: none"> • <u>competence in the creation of conceptualization</u> about occupations with the international establishment • <u>responsibility for the greatest top management</u> and professional experts, responsibility for a new conceptual leader and new knowledge extended or created by the establishment of each field 	<ul style="list-style-type: none"> • <u>expertise in complex problem-solving, developing conceptualization on occupations</u> • <u>provide knowledge in the field for management</u> research and responsible for a field of work • holistic thinking

Learning Outcomes/Work Outcomes			
Domain	NQF	Professional Qualification	National Skill Standards/Occupational Standards
	Level 8	PQ 8	NSS 6

Analysis: Learning outcomes and work outcomes of PQ8 and NSS6 in the knowledge domain are “forefront knowledge” and the “most advanced and highly specialized”, which are very similar to NQF. In terms of the skills domain in PQ8 and NSS6, they are identified as “applying the most advanced skills for a challenging task and the creation of a new concept in a field of work” and “set policies, targets and directions of organization”, while the NQF domain identified “initiate research creating knowledge or practices” which are very similar but use different wording. For application and responsibility in PQ8 and NSS6 identified “competence in creation of conceptualization” and “expertise in complex problem solving, provide knowledge in the field for management, responsibility for the greatest top management”, they are very similar to NQF.

Therefore, it is concluded that descriptors of learning and work outcomes of PQ8 and NSS6 are located in NQF level 8.

Annex : 7**The Establishment of the Relationship between the Levels of POF to NOF**

The Establishment of the Relationship between the Levels of Thailand Professional Qualification Framework (POF) to National Qualification Framework (NOF)

The approach to referencing of POF to NOF should be taken as robust and proven for recognition purposes whether or not they could be compared and linked with each other.

To lead to an agreement and a mutual acceptance of qualification under the two frameworks, linguistic analysis is used in the evaluation and decision-making by considering the meaning of descriptors of qualification levels. This is due to the fact that each country or competent bodies have different contexts and structures in terms of roles and responsibilities. It must therefore mainly examine the purpose and meaning of explanation in the framework, which may vary when compared.

As a result, the relationship between the levels of POF to NOF focuses and compares the significant weight of the learning outcomes between two frameworks and seeks a common understanding or a consensus to apply as comparable agreements and link the qualifications framework together.

In practice, a comparative analysis of the criteria will be used to determine compatibility. (Harmonization) Eighty percent of the substantial differences are considered to prove best-fit between POF to NOF.

The comparative analysis of POF to NOF uses colors in determining the similarities between each domain of the two frameworks.

Using Red color to determine similarities in Knowledge

Using Blue color to determine similarities in Skills

Using Orange color to determine similarities in Application

Using Green color to determine similarities in Responsibility

Comparison and Analysis of PQF and NQF Learning Outcomes

Level 1	Learning Outcomes			
NQF	Knowledge	Skills	Application and Responsibility	
	<ul style="list-style-type: none"> basic, general, about occupation communicate in the world of work 	<ul style="list-style-type: none"> basic skills in occupation skills in communication, life skills, and skills in routine operations without complexity 	<ul style="list-style-type: none"> ability in routine operation according to required steps ability in operation under close supervision 	
PQF	Knowledge	Skill	Application Outcome	Responsibility
	basic knowledge in a field of work	apply Basic skills for routine processes or simple work orders	competence for the work orders under the supervision	responsibility to basic job and interact with their working, according to the work orders of the supervisor

Level 2	Learning Outcomes			
NQF	Knowledge	Skills	Application and Responsibility	
	ICT communication, knowledge in general and factual of the field	<ul style="list-style-type: none"> skills in operation according to required steps and standards thinking skills, life skills, communication skills with initiatives 	<ul style="list-style-type: none"> ability in operation according to principles and standards ability in operation, looking after and making basic decision and problem-solving 	
PQF	Knowledge	Skill	Application Outcome	Responsibility
	operational knowledge in a field of work	apply working skills for work instruction	competence for a standard processing under supervision	responsibility for own performance following the assignment and working with others



Level 3		Learning Outcomes		
	Knowledge	Skills	Application and Responsibility	
NQF	principles of specialized fields and basic analysis	<ul style="list-style-type: none"> skills in selection and application of basic tools and materials communicative ICT and skills related to safety issues 	<ul style="list-style-type: none"> ability to operate as planned and adjust without complex changes ability in independently providing basic advice for decision making and planning for problem-solving in some issues application of knowledge skills in the field, ICT, communication in problem-solving, and working in the new context, including responsibility for oneself and others 	
	Knowledge	Skill	Application Outcome	Responsibility
PQF	principles of knowledge and analysis in a field of work	apply working skills for making decision, method, procedure, and tool following the standard	competence for a work plan or standard and decision-making and problem-solving following supervisor's instruction	responsibility for quality of work following the assignment and support to colleagues and other departments

Level 4		Learning Outcomes		
	Knowledge	Skills	Application and Responsibility	
NQF	Theoretical and technical, covering an occupation field. English + ICT related to work	skills in adapting suitable operation process and related to safety issues	<ul style="list-style-type: none"> ability to operate as planned and adjustments to changes ability to solve problems and coordinate problem-solving with regard to unfamiliar issues 	
	Knowledge	Skill	Application Outcome	Responsibility
PQF	technical or Theoretical knowledge in a field of work	apply working skills for problem solving and safety in a field of work	competence for the revision of quality or continuous works by oneself	<ul style="list-style-type: none"> responsibility for work supervision and continuous work responsibility for their own and others' Occupational Health and Safety (OHS)

Level 5		Learning Outcomes			
NQF	Knowledge	Skills	Application and Responsibility		
	theoretical and in-depth technical knowledge covering an occupation field	<ul style="list-style-type: none"> skills in thinking, analyzing, and solving problems skills in planning, managing and evaluating operation 	<ul style="list-style-type: none"> ability in operations under changing situations at all times ability in evaluation of operation by oneself for complex problem-solving and abstract issues 		
PQF	Knowledge	Skill	Application Outcome	Responsibility	
	particular technical or theoretical knowledge in a specific field of work	apply working skills for complex tasks and analyzing a relevant information in a field of work	competence for complex tasks and evaluation for activities and managerial productivity	<ul style="list-style-type: none"> responsibility for supervision of operational or project plan, evaluation, and problem-solving responsibility for leadership, advice and job transferability 	

Level 6		Learning Outcomes			
NQF	Knowledge	Skills	Applications and Responsibilities		
	theory and detailed specific occupation field	skills in thinking, analyzing, reviewing, and comparing problems	<ul style="list-style-type: none"> complex problem-solving and making changes initiate, improve, strategic complex planning, abstract problem solving and managing in the field 		
PQF	Knowledge	Skills	Application outcomes	Responsibility	
	advanced technical or theoretical knowledge in one or more fields of work	apply advanced skills for complex tasks and developing a new strategy or technique in a field of work	competence for strategic thinking and complex tasks	<ul style="list-style-type: none"> responsibility for strategic management for productivity and complex problem-solving responsibility for profession and advice to specialized consultants 	

Level 7		Learning Outcomes			
		Knowledge	Skills	Application and Responsibility	
NQF		in depth forefront knowledge of the field	skills in thinking, analyzing, initiating research, expanding knowledge, practice and academic English usage	<ul style="list-style-type: none"> • solve complex and unpredictable problems, develop and try out new methods and search for innovative solutions • provide judgment and be responsible as expert with knowledge in operations and management • expert with theoretical and practical knowledge and management 	
		Knowledge	Skill	Application Outcome	Responsibility
PQF		particular knowledge or systematic development of a new body of knowledge in a field of work	apply advanced skills for a new body of knowledge development in a field of work	competence for system development, body of knowledge and innovation of organization	<ul style="list-style-type: none"> • responsibility for policy management and unpredictable problem-solving under new context of organization • responsibility to give comments for experts of each occupation

Level 8		Learning Outcomes			
		Knowledge	Skills	Application and Responsibility	
NQF		the most advanced and highest specialized level	<ul style="list-style-type: none"> • initiate research, creating knowledge or practice • use English in academic presentations • conduct research, published and accepted internationally 	<ul style="list-style-type: none"> • have expertise in complex problem-solving, develop and test new theories or search new solutions with complex and abstract issues • authorized to provide knowledge in the field for management research and responsible for enhancing knowledge and practice, creating new ideas and process in the field 	
		Knowledge	Skill	Application Outcome	Responsibility
PQF		forefront knowledge for creation at the most outstanding level	apply the most advanced skills for a challenging task, creation or new concept in a field of work	competence in a creation of conceptualization on occupational standards for the international establishment	<ul style="list-style-type: none"> • responsibility for the greatest top management and professional expert • responsibility for a new conceptual leader and a new knowledge body extended or created by establishment of each fields

Annex : 8

Referencing Description of the Ministry of Labour

NQF Level	Ministry of Labour's Referencing Description to NQF	Ministry of Labour's Occupational Standard
8	Be able to determine the direction of the future of the organization, as well as managing organizational culture changes and the acceptance degree of organization itself and society	8 (National Skill Standard Level 6)
7	Be able to continually develop the working system, products and services, organizational management, work innovation, as well as human resources development, and also be able to synthesize and evaluate in order to solve the critical problems of an organization	7 (National Skill Standard Level 5)
6	Be able to design a working system, products and services, organizational management; be able to analyze, do work planning, monitor and evaluate work performance and solve unexpected complex problems systematically and effectively with applied knowledge and skills as well as cost management, human resources development, cooperation and negotiation	6 (National Skill Standard Level 4)
5	Be able to perform complex task and participate in controlling and planning related work performance standards based on own knowledge, skills and ability. Be able to solve problems as well as provide training for subordinates	5 (National Skill Standard Level 3)

NQF Level	Ministry of Labour's Referencing Description to NQF	Ministry of Labour's Occupational Standard
4	Be able to perform tasks (both quality and reliability) as per specified standards with own expertise with advice from level 4; be able to make own decision on problem-solving on related work and able to supervise and give advice or consult with subordinates	4 (National Skill Standard Level 2)
3	Be able to perform tasks, with expertise, as per specified standards, with advice from level 4	3 (National Skill Standard Level 1)
2	Be able to perform tasks following steps under close supervision at level 3	2 (Occupational Standard Level 2)
1	Be able to perform basic and uncomplicated tasks under close supervision of levels 2 and 3	1 (Occupational Standard Level 1)

Annex : 9

TPQI's Process for Occupational Standards Setting



Annex : 10

Lists of TPQI Occupational Standard Sectors and Professional Qualifications

No.	Occupational Standard Sectors & Professional Qualifications
1	Petroleum and Petrochemical Industry
2	Floristry Business
3	Beauty Business (Hair dresser)
4	Community Transportation Services
5	Spas & Wellness Services
6	Hospitality and Tourism Services
7	Health Services
8	Photography Business
9	Mechatronics
10	Cleaning Services
11	Molding and Die Casting Industry
12	Printing Industry
13	Food & Beverage Production
14	Automotive Services
15	Retail Businesses
16	High-Speed Rail (HSR) and Rail System
17	Metrology
18	Thai Arts & Crafts
19	Sport Sciences
20	Information Communication Technology and Digital (ICT)

No.	Occupational Standard Sectors & Professional Qualifications
21	Rubber Industry
22	Textile and Garment Industry
23	Human Resources Management
24	Logistics
25	Publication Business
26	Welding Industry
27	Construction
28	Asset Management
29	Languages and Interpreters
30	Aviation Industry
31	Fashion Design
32	Educational Services
33	Ceramic Industry
34	Real Estate
35	Financial Services
36	Health Safety and Environment
37	Agriculture
38	Security Services
39	Medical Engineering
40	Solid Waste and Hazardous Waste Management
41	Non-Destructive Testing
42	Plastic Industry
43	Product Design Services

No.	Occupational Standard Sectors & Professional Qualifications
44	Energy and Renewable Energy Industry
45	City Planning
46	Music Industry
47	Marine Services
48	Public Utilities and Services
49	Electricity
50	Auto Parts Industry
51	Green Business Services
52	Performing Arts and Entertainment
53	Biotechnology
54	Research and Survey
55	Gem and Jewelry Industry

Annex : 11**Lists of DSD Occupational Sectors**

No.	Occupational Sectors
1	Construction
2	Industrial technician
3	Mechanics
4	Electrical, electronics and computer
5	Industrial Art
6	Agro-industry
7	Services

Annex : 12

Operations of ONESQA in Accordance with the Principles of AQAF**1. Mission and Common Goals/Statements**

The National Education Act of 1999 clearly stipulates the missions and objectives of ONESQA in Chapter 6, Section 49 and set the objectives and authority of ONESQA in the Royal Decree on the Establishment of the Office for National Education Standards and Quality Assessment (Public Organization) 2000. ONESQA is the sole national EQAA in Thailand and its establishment conforms to the AQAF principles, which suggests that national EQAA should be set up with a legal framework.

The vision of ONESQA is “maintains recognized standards of an external quality assessment system that can manifest the quality of education, as well as provide recommendations to heighten quality improvement in Thai education.” The objectives of the mission were as follows: (1) to develop external quality assessment system; (2) to certify external quality assessors and to oversee external quality assessment, including accrediting the standards of educational institutions; and (3) to provide reports on external quality assessment and recommendations to educational institutions, parent organizations and the government.”

ONESQA carries out the missions and fulfils the objectives by obtaining feedback from key stakeholders and seven key networks. For instance, discussions, public hearings and consultations with relevant institutions in order to develop criteria, standards and indicators for the EQA.

While in development, ONESQA managed to obtain feedback from its key stakeholders before formulating a policy to reduce the burden on institutions. For instance, ONESQA has developed an EQA criteria and standards that can accommodate all types and frameworks of IQA that institutions have adopted and selected to fit best with their contexts. Institutions have lessened their workloads to prepare additional documents for EQA. ONESQA has already developed a platform called the “Automated QA system”, which aims for increased efficiency following its direction to promote authentic assessment by means of interviews and observations. The fourth-round EQA focuses on assessments for development by providing recommendations for institutions to improve their quality, and when institutions are ready for EQA, they will send their requests for EQA to ONESQA on a voluntary basis within the five-year assessment round.

2. Legal Basis

The overall operation of EQA bodies (ONESQA) is undertaken in accordance with the law, with the ONESQA Executive Committee to steer the policy toward the objectives of the organization. The members of the ONESQA Executive Committee consist of stakeholders from both the public and private sectors. For instance, the Permanent Secretary for Education serves ex-officio as a member. To ensure that the educational quality assessment is consistent with a variety of educational focuses, types and levels; the Committee for the Development of Assessment Systems for Basic Education, the Committee for Development of Assessment Systems for Vocational Education and the Committee for Development of Assessment Systems for Higher Education are established to support technical or academic issues, develop the systems and methods of EQA while monitoring the assessments in accordance with the policies made by the Executive Committee.

The Royal Decree Establishing ONESQA in 2000, section 8, stipulated six main functions for ONESQA, as follows:

- (1) To develop an external assessment system, set the framework, directions and methods for efficient external quality assessment in line with the quality assurance system of educational institutions and their parent organizations.
- (2) To develop the standards and criteria of the EQA.
- (3) To certify external assessors.
- (4) To supervise and set standards for EQA conducted by external assessors as well as issuing certification of standards. In the case of necessity or for the benefit of study and research for development of the external assessment system, the Office may carry out an EQA itself.
- (5) To develop and train external assessors; prepare training course curricula and encourage private, professional or academic bodies to participate in the training of external assessors for greater efficiency.
- (6) To submit annual reports on the assessment of educational quality and standards to the Council of Ministers, the Minister of Education and the Budget Bureau for consideration in formulating educational policy and allocating the budget for education, as well as to disseminate reports to the concerned agencies and the public.

Every year, ONESQA conducts a survey of customer satisfaction with regard to the EQA. The survey results are applied to improve the ONESQA's operations. ONESQA's customers are divided into five groups: (1) learners; (2) teachers, lecturers and educational staff; (3) educational institution administrators; (4) parents and (5) entrepreneurs and employers.

3. Operations and Decision Making

According to the Public Organization Act of 1999, in order to enhance the efficiency and the effectiveness of public services and new management in the form of public organization shall be created to allow autonomy and increased flexibility in administration. Accordingly, ONESQA was established and has performed its functions following the Royal Decree on the Establishment of the ONESQA 2000, stressing the impartiality of the EQA, with the checks and balances of power. Therefore, ONESQA is under the direct supervision of the Prime Minister and retains full autonomy in its overall implementation. The Royal Decree on the Establishment of the ONESQA states that the Executive Committee has authority to formulate policies, make decisions, set frameworks, guidelines and standards, and carry out effective EQA methods consistent with the QA of educational institutions and parent organizations. It is responsible for the recruitment and development of external assessors, and the certification of educational institution standards (according to Section 8).

Furthermore, Section 16 of the Royal Decree on the Establishment of the ONESQA stipulates that the distinguished ONESQA committee members shall be without any conflict of interest with the organization, directly or indirectly.

4. Standard and Transparent System

The appointment of members of ONESQA executive committee and other committees is transparent, accountable, and free from undue influence, based on the principles of AQAF, as follows:

The Royal Decree on the Establishment of ONESQA 2000 states that the recruitment of distinguished committee members is based on principle of inclusiveness, balanced representation, and even distribution from both the public and private sectors, and scholarly and professional communities alike. Therefore, ONESQA committees are composed of professionals who have extensive experience of management, educational administration, and QA to help steer the development of the EQA in accordance with the goal of the National Education Act.

All members of all boards and committees can each serve a four-year term of service, but not more than two consecutive terms. The committee has the authority to control the operation, such as setting management policy, making decisions on operational plans, approving investments and financial plans, following up on operations and monitoring the administration of organizations. The committee also enforces regulations, rules, announcements and requirements, such as distributing the organizational structure; determining job positions, qualifications and salary, etc. (The Royal Decree on the Establishment of the ONESQA, Section 20) empowers the Executive Committee to appoint advisor(s) to committees and to certify external assessors.

The recruitment process for the chairperson and the committee members of such bodies as the ONESQA Executive Committee, the Committee for Development of Assessment Systems for Basic Education, the Committee for the Development of Assessment Systems for Vocational Education, and the Committee for the Development of Assessment Systems for Higher Education. The ONESQA regulations require the appointment of a recruitment committee to call for nominations of qualified people from the agencies concerned and applications from the general public.

5. Governance, Transparency and Accountability

ONESQA has put in a great effort to operate in accordance with the key objectives and to achieve their goals by adhering to the principles of transparency, freedom from corruption and balances in all dimensions, all while corresponding with key national policies. Consequently, the operation of ONESQA is regularly examined and evaluated by external bodies, including the Office of the Public Sector Department Commission, the Office of the National Anti-Corruption Commission and external audits.

ONESQA requires all bureaus, sections and units to prepare operational manuals and flow charts as a ready reference and knowledge management has also become part of the key processes. With comprehensive job descriptions, combined with self-assessment reports every six months by the staff, ONESQA management is able to consider performance assessment.

ONESQA formulates a strategic plan and reviews it annually to improve its operations in order to respond better to social, economic and national management changes. The strategic plan has to be approved by the ONESQA Executive Committee and its implementation is monitored every six months.

6. Developments and Innovations

ONESQA makes use of the results of the previous EQA rounds. The results of each assessment round are synthesized and carefully reviewed to ensure that necessary improvements are in place to be responsive to national educational policies and international QA directions.

In the first-round EQA (2001-2005), most institutions were threatened by external assessment, as they had insufficient understanding of it. Therefore, ONESQA started the process by verifying actual situations at educational institutions, aiming for readiness to implement the QA system.

The second-round EQA (200-2010) continued to evaluate according to the actual situations of educational institutions. Yet, there were judgments of 'pass' or 'fail' as the results to ensure that institutions would follow EQA standard practices.

The third-round EQA (2011-2015) followed a similar strategy to the Second-Round EQA and added an Area-based Assessment (ABA) to reflect the quality of educational management clearly.

The fourth-round EQA (2016-2020) is a work in progress and in accordance with government policies.

7. Sufficient and Adequate Resources

ONESQA has an adequate staff, operational budget, and supportive resources.

Manpower

ONESQA analyzes and plans its manpower to serve the needs of its operations. The position framework is devised to be consistent with the structures of job types and positions covering skills, qualifications, attributes and positions, as indicated in ONESQA Human Resources Management Regulations.

Human Resources Development

ONESQA organizes in-house training on relevant topics needed by the staff to carry out their work more efficiently. They include strategic planning, QA, and TQM. All staff members have to prepare their own Individual Development Plan (IDP) annually.

Budget

ONESQA receives an adequate budget from the Bureau of the Budget for office management. It also has the authority to collect fees, maintenance fees, and obtain other service fees according to the Public Organization Act. ONESQA established an ONESQA Fund for the development and the welfare of its staff.

Information Technology

ONESQA has quality and modern information technology systems that well support its operations. Furthermore, ONESQA has developed information systems for EQA called “Automated QA” to enhance the efficiency of EQA, reduce the burden of documentation and linked data between ONESQA and educational organizations. The Back Office employs a paperless system to reduce operational processes and save on the budget.

8. Collaboration with National and International Stakeholders

National Collaboration

ONESQA joins networks and collaborates with both national and international organizations. It actively participates in QA-related international conferences, exchange of study visits, and enhances QA capacities. ONESQA created seven educational networks of stakeholders, which are relevant parties including mass media; parent associations; the boards of educational institutions; educational service areas; politicians, community leaders and local leaders; students; QA officers; and researchers. Additionally, ONESQA collaborates with institutions to establish 10 ONESQA network centers across the country to advocate EQA through scores of activities, such as brainstorming meetings, QA seminars, etc.

ONESQA also collaborates with other key organizations and sectors, such as OHEC, the National Reform Steering Assembly (NRSA), institutions, employers, the industrial sector, etc.

International Collaboration

ONESQA is a member of five international QA networks, it has signed 22 memorandums of understanding on international QA collaboration with 14 countries to exchange good practice and to develop EQA that will be recognized in the international community. Some of the activities in the memorandums of understanding include Vocational Joint Accreditation between ONESQA and Taiwan Assessment and Evaluation Association (TWAEA) and a staff exchange with the Malaysian Qualifications Agency, etc. In addition, ONESQA shares the information and the statistics necessary for benchmarking with partner agencies and continues to organize international conferences for more sharing.

Since 2008, ONESQA has been recognized as an active member of AQAN. Moreover, an ONESQA representative has been appointed chairman of the AQAN from 2015 to 2017.

9. Reliable System

ONESQA operations are strictly based on PDCA. It uses the systematic approach from planning and implementation to monitoring and evaluation. The following committees have played key roles:

- The ONESQA Executive Committee meets once a month to monitor and follow up on monthly performances and expenditure, and provides constructive recommendations to improve the operation. For the Executive Committee in particular, each of its members has to make an assessment every three months, as required by the Office of the Public Sector Development Commission with a follow-up report submitted to show development and improvement.
- The Committee for the Development of Assessment Systems for Higher Education has its monthly meeting to develop and improve EQA methods, set the standards and criteria for EQA, offer relevant technical support, monitor operations to provide accreditation, and ensure that the QA of relevant educational institutions are in line with the policy of the Executive Committee.
- Internal audit units examine and assess the success of performances and monthly expenditure.

- The Performance Follow-up and Evaluation Committee calls its meeting every month. The committee prepares its report after having assessed performances and budget spending every 6th month and 12th month.
- The Human Resources Subcommittee meets monthly. The subcommittee proposes regulations, criteria, and methods to promote staff development and welfare while producing reports on its performances to the Executive Committee for the overall human resources development.
- The Financial Committee, meeting every month, to analyze financial reports, formulate a plan for budget disbursement, summarize expenditure and capital management, set a plan and guidelines for financial management, budget, funds and investment. Its monthly report will be submitted to the ONESQA Executive Committee for endorsement.
- Individual self-assessment reports and group self-assessment reports are written every sixth and twelfth month. The organization appoints a committee to decide the level of performances. Assessment indicators and criteria are made known at the beginning of each fiscal year.

All these committees monitor the performances of ONESQA periodically and also provide recommendations for operational development. For instance, the Performance Follow-up and Evaluation Committee, which meets monthly, recommended that ONESQA should focus on internal control and risk management. ONESQA revised the operational plan and organized meetings to formulate the operational plan and follow up on its performance.

10. Keeping the Public Informed

ONESQA made consistent efforts to communicate with stakeholders and the public. Currently, the following communication channels are in use:

- The ONESQA website provides information in both Thai and English. It includes basic information on ONESQA, news updates, the Assessment, and QA articles. Additionally, the public and stakeholders can learn about the results of the three rounds of EQA and all education institutions nationwide for the past 15 years. Visitors can offer feedback on the website for improvement purposes.

- Publications are produced to share news and activities with stakeholders and the public in order to create an understanding of EQA. The publications include journals, which are published bimonthly and distributed to education institutions across the country. Periodic advertisements on newspapers and magazines are posted. Printed materials are also readily available for dissemination at conferences.
- Radio and television broadcasting is another avenue to publicize news and create understanding among stakeholders and to disseminate information to the public.
- Social media including Facebook and Fan Page to promote two-way communication and has set its efforts to disseminate information via other websites and no less than 32 websites and 100 stories per year.
- Other means such as a short drama, a short film, and 10 documentary videos are produced for the promotion of QA and ONESQA work.
- Networking activities include volunteer camps, stakeholder meetings, contests are organized and the frequency is specified clearly for responsible units to achieve.

11. Focus on Students and Society Processes

The EQA of ONESQA has always placed its first priority on the interests of learners. This aspect was clearly reflected in the third-round EQA under two indicators, namely: Indicator 1: Percentage of graduates with Bachelor's degrees who are employed within one year after graduation, and Indicator 2: Quality of graduates with Bachelor's, Master's, and Doctoral degrees, as specified in the Thailand Qualifications Framework for Higher Education (TQF). Such results enabled ONESQA to verify that HEIs produced graduates with desirable attributes as specified in the five domains of learning in the TQF: (1) ethics; (2) knowledge; (3) cognitive skills; (4) interpersonal skills and responsibility; and (5) numerical analysis, communication and IT skills.

The learning outcomes of the graduates were stressed through their internships, publication and dissemination of Master's and Doctoral degree and public service before graduation. Accordingly, universities have to present their results, and show the development of those dimensions. The institutions had to provide results on the provision of academic services to society, which could be in the forms of social services to solve social issues, make recommendations for improvement, or protect society from threats both on-and-off campus.

These indicators evidently showed the ONESQA EQAs and its efforts to encourage educational institutions to play a key role in social and community development. Based on the results of the third-round EQA, the results of learner-based educational and instructional management in all categories of HEIs were at a good level. The research titled “Synthesis of Third Round External Quality Assessment Results (B.E. 2559) Affecting Students and Society” suggested that ONESQA should develop an EQA system that corresponds with the mission of each educational institution in order to respond to varying education objectives, enhance the quality assurance process, and protect the interests of educational service users. The same research also recommended that ONESQA should assess whether or not the production of university graduates responded to national needs and to verify whether or not the academic curricula has had an impact on the country.

12. Comparable to International Good Practices

ONESQA has developed the standards and criteria for EQA corresponding to the national education standard as stipulated by the Ministry of Education. ONESQA’s EQA was closely related to the IQA and was formulated by parent organizations. These standards are comparable to international good practices such as the AUN-QA, MBNQA Criteria, and covering the quality of the graduates, research promotion, leadership and institution development, good governance, services to society and the community, and internal quality assurance. Furthermore, with close collaboration with parent organizations, ONESQA utilizes Common Data of parent organizations, which contain related EQA information and statistics directly from the parent organization database. The Common Data has served as the baseline information for ONESQA to understand the principles and the guidelines of each institution to manage its EQA to better fit their purposes. As a result, ONESQA has developed a benchmarking system, suitable for specific types of institutions such as Military Schools, the Police Academy, Nursing Colleges, Physical Education Colleges, Community Colleges and Schools of Music.

The existing ONESQA assessment standards and criteria can be further integrated with increased regional and international dimensions. ONESQA should enhance the regionalization and internationalization of its EQA by inviting QA experts from its neighboring ASEAN countries to take part in developing standards and criteria for its EQA system.

13. Involvement and Participation of Stakeholders

For each EQA round of assessment, ONESQA invites the participation of stakeholders to brainstorm, helping ONESQA better respond to the needs and demands of society when developing standards and criteria. The steps are as follows:

- Meetings are organized to engage stakeholders consisting of parent organizations, representatives from institutions of all types, IQA experts, external assessors, and other relevant organizations. The expected results are ideas for the development of standards and criteria for EQA to correspond with the National Education Act and educational policy stipulated by the Ministry of Education.
- Public hearings are undertaken, allowing a larger circle of stakeholders nationwide to attend the hearings in order to develop a standard and criteria for EQA along with the effort to gain wider acceptance.
- Opinions and recommendations on draft EQA standards and criteria from stakeholders are collected from various channels such as e-mails, websites, questionnaires, etc.
- Meetings in all regions across the country are carried out to promote understanding of the EQA standards and criteria by inviting stakeholders so as to prepare institutions for assessment and to ensure that their QA systems will be carried out to meet set standards.
- Pilot test(s) of EQA criteria and standards will be administered on site to determine reliability and the appropriateness of the instruments before actual EQA implementation.

14. Standards Available and Applied with Cultural Diversity

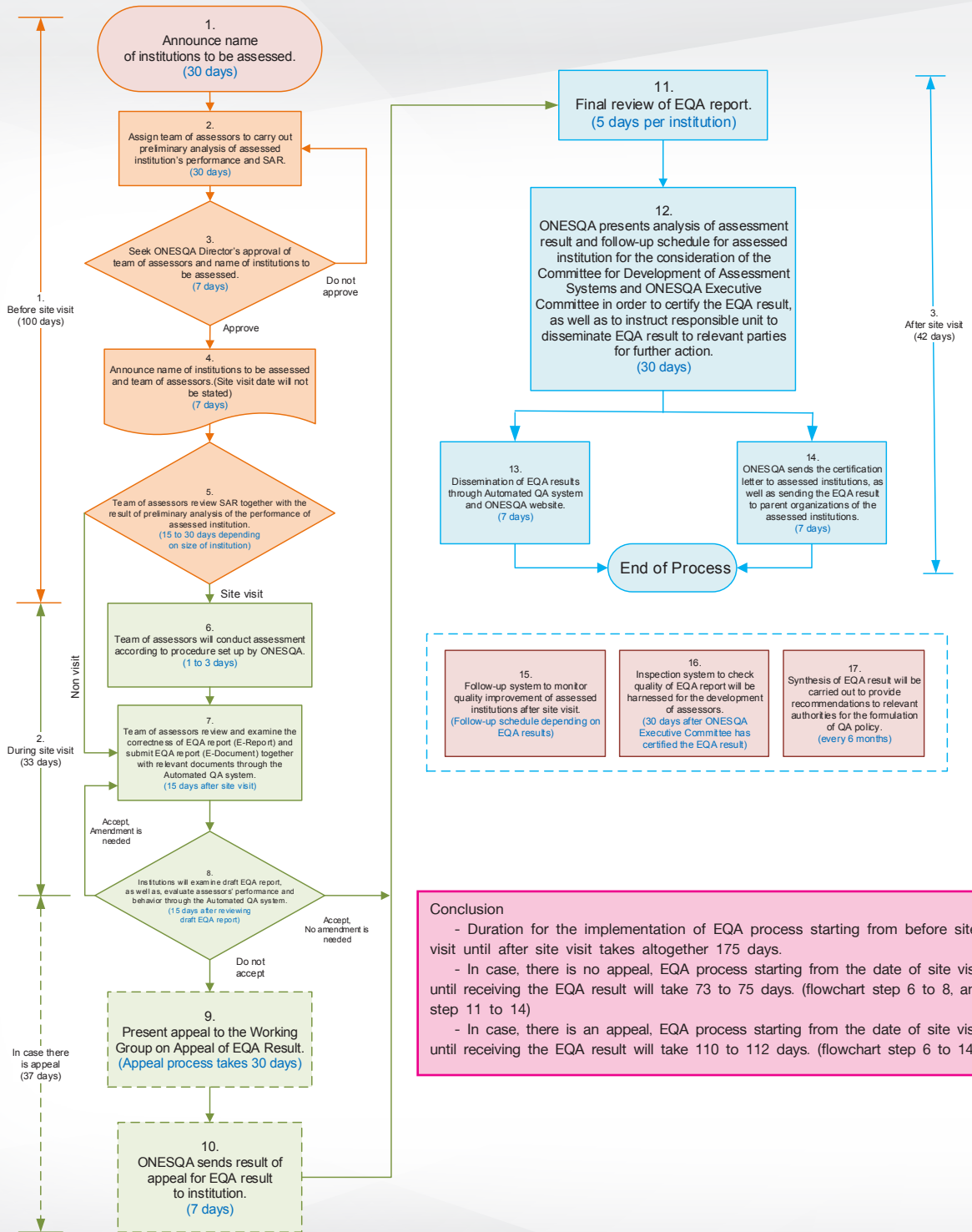
ONESQA publishes EQA standards and criteria in the form of a manual and distributes it to all relevant institutions. The EQA manual is also posted on the office website for ready downloads. ONESQA has drawn up a yearly plan to organize workshops in all regions of the country, aiming to prepare the readiness of institutions that are scheduled to be assessed in that particular year.

The third-round EQA for higher education, ONESQA focuses on the cultural diversity of individual HEIs by creating indicators that stress identity and uniqueness. HEIs are able to identify their own identity and uniqueness. Each institution in each category identifies its own identity and uniqueness in accordance with the objectives of the institution.

15. Formal Decisions and Follow up Procedures

ONESQA EQA process corresponds to AQAF and consists of three steps: (1) before the institution visit; (2) during the institution visit and; (3) after the institution visit. The process is illustrated below:

Figure 26: EQA Process



After the institution visit, ONESQA has follow-up procedures for monitoring the quality of assessors and assessment operations, and the utilization of assessment results by educational institutions through different means, as follows:

QC100 System: Approximately two weeks to one month after completion of the site visit, ONESQA will send questionnaire to all assessed institutions. This step is called “QC100” system to follow up on the overall assessment operations. Each assessed institution will be asked to respond to questions related to the assessment procedures; the performance and satisfaction of assessors during visits; and the usefulness and utilization of the assessment results. The feedback from the questionnaire is processed for further reviews for the purpose of improvements.

There is a random follow-up at the assessed institutions: ONESQA appoints its network centers to conduct a random evaluation of assessed institutions to ask about satisfaction regarding the ONESQA assessors. At the same time, the Performance Follow-Up and Evaluation Committee of ONESQA randomly audits assessed institutions to get feedback. All the responses served as input for ONESQA for the next steps of the assessment strategies.

The follow-up on the utilization of assessment result: Another Sub-Committee is set up to follow-up on the assessment results. The Sub-Committee members consist of representatives of all parent organizations to report the utilization of the assessment results for quality improvement. A sub-committee meeting is organized every two months. A manual of the utilization of assessment results was published to serve as practical guidelines for all educational institutions and parent organizations to improve quality after the ONESQA site visit is carried out.

16. Appropriated timeframe for assessment

ONESQA’s EQA concept and principles are formulated to serve the six aspirations of the National Education Act. The assessment is based on criteria responding to the focuses of educational institutions. In addition, their management performances are reviewed while a quantitative and a qualitative assessment is undertaken by peer review. The whole exercise stresses the importance of reliable SAR to show the output, the outcome, and the impact of the institution. (Refer to Manual for Higher Education Institutions: The Third Round of EQA (2011-2015), 12).

ONESQA EQA retains its objectivity with a focus on empirical evidence, a clear assessment criteria, and using mainly quantitative indicators. The qualitative indicators were issues and a scoring rubric are defined with different approaches for different disciplines. (Refer to Manual for Higher Education Institutions: The Third Round of EQA (2011-2015), 26-27).

The appropriateness of the assessment timeframe depends on the sizes of institutions and the number of faculties. The site visit timeframe is between 2 to 5 days. For instance, small institutions with only one faculty such as a Nursing College would need two days while some medium-size institutions with 3-5 faculties would need three days, etc.

A synthesis of the third-round EQA results revealed that ONESQA formulated concrete EQA indicators and criteria, the appointment of assessors was transparent and accountable, the site visit timeframe was appropriate, and practical recommendations were made for the quality development of higher education. Furthermore, it was observed that the indicators of the third-round EQA were different from the previous rounds, making it less effective to trace higher education quality improvements.

In the fourth-round EQA, ONESQA has developed an assessment system and criteria in close collaboration with the parent organizations of HEIs. This effort has reduced redundancy between IQA and EQA. When combined with training and calibration sessions for assessors, assessments will be conducted fairly, based on mutual understanding, the impartial judgment of the assessors and less need for documentation.

17. Appropriate training of assessors

ONESQA has always organized training for recruited assessors from the first to the third round (2001-2015). ONESQA training stresses the importance of practical and actionable recommendations corresponding with the context of educational institutions and national education standards. Training for assessors is conducted annually.

The lessons learned from past experience suggest that ONESQA should pay more attention on the development of the assessors. At present, key stakeholders and parent organizations are engaged to participate in formulating, designing and conducting training together with ONESQA to ensure that IQA and EQA are related. ONESQA expects that the fourth-round EQA will adopt the approach of

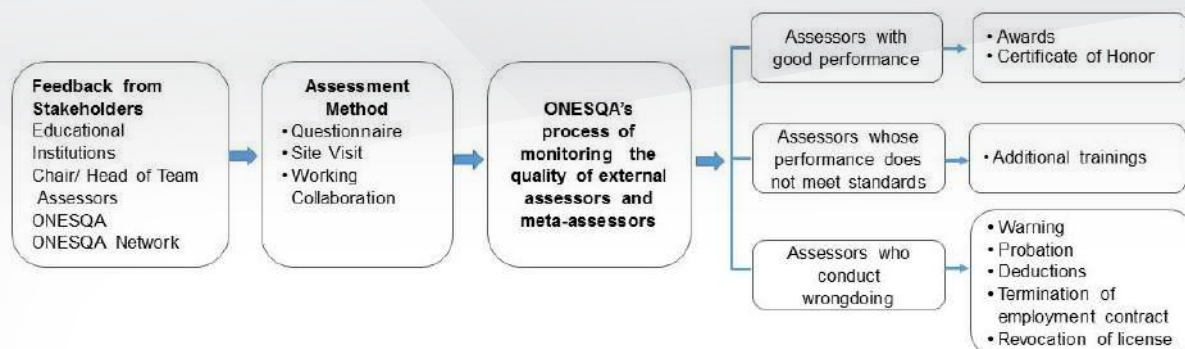
expert judgment, based on the expertise, experience and integrity of the assessors. Its fourth-round EQA will focus on useful feedback and actionable recommendations that educational institutions can take up for their quality development, which includes their standard improvement for the heightened benefits of the students. Moreover, ONESQA maintains its strict Code of Professional and Ethical Conduct of assessors, so that they all serve as “Quality Ambassadors”. Consequently, ONESQA has designed new training modules to provide new assessors with both theoretical and hands-on experience to increase the necessary competencies for assessment.

18. Professionalism and ethical conduct of assessors

ONESQA places a great emphasis on the professionalism of the assessors. Accordingly, it has defined the attributes of the external assessors, as follows: (1) assessors must produce a professional evaluation report; (2) assessors must perform their duties with professional ethics, especially in relation to confidentiality of individuals and no conflicts of interest; (3) assessors must take up their roles as “Quality Ambassadors” and encouraging educational institutions to use EQA results for further quality development. All assessors have to strictly follow the code of conduct and ethics, requiring assessors to carefully review guidelines for mutual understanding and sign a code of conduct and ethics agreement. (Refer to Manual for Assessors: The Third round of EQA (2011-2015), Chapter 2 Roles, Responsibility, and Monitoring of Assessors, 13)

As regards the performance of assessors, ONESQA monitors and assesses it through EQA report reviews and feedback from institutions. For quality assessors, their licenses will be renewed every two years and given recognition at national and international forums organized ONESQA. On the other hand, assessors whose performances are in doubt or have led to complaints, ONESQA has regulations to handle such cases. It has a working committee on the appeal and complaint management to investigate cases, follow-up on progress, report the outcome, and disseminate the decisions as shown in Figure 27.

Figure 27: Process to Ensure the Professionalism and Ethics of External Assessors



19. Cyclical basis of assessment

ONESQA's EQA is conducted on a five-year cyclical basis. From the earlier three rounds of EQA for higher education, ONESQA has reviewed EQA standards and criteria and obtained recommendations from stakeholders to develop effective EQA.

In the third-round EQA, HEIs that are not accredited or accredited with conditions, institutions had to submit quality development plans to parent organizations and to send a copy to ONESQA 30 days after receiving official assessment results. However, ONESQA did not have a follow-up procedure to monitor whether or not HEI had carried out the quality development, unless that particular HEI requested re-assessment two years after the assessment.

ONESQA synthesized the third-round EQA results and identified the following areas of improvement for the fourth-round EQA.

The fourth-round EQA (2016 – 2020) has been developed based on government policy with two key concepts, as follows: (1) EQA shall be linked with the IQA of institutions and parent organizations to ensure that operations achieve targeted goals, set standards and accountability; and (2) the EQA shall challenge itself much further to enhance the quality of educational institutions to meet international standards in accordance with the government policy on educational reform and an international direction.

20. An Appeal Mechanism is Established and Accessible to all

ONESQA has an appeal mechanism in all EQA processes, as follows:

- Appeal to candidates and assessors

ONESQA has its appeal regulations, in the Regulations on Authority Accreditation and Monitoring Assessors for Educational Quality Assessment in Higher Educational Institutions 2002, Chapter 5: An Appeal of Assessors and the Assessor Team, Item 28. (Refer to ONESQA Regulations on Authority Accreditation and Monitoring Assessors for Educational Quality Assessment in Basic Educational Institutions 2002, Chapter 4, 31).

- An appeal to educational institutions

Since the beginning of the ONESQA EQA, educational institutions have been able to make an objection at any stage of the assessment, from before the institutional visit, during and after the visits.

Item 4.1 Before the institution visit: ONESQA submits a letter of assessor lists to the educational institution for approval. The assessor team is appointed when no objection is made by the educational institution.

Item 4.3 During the institution visit: Item 2.4 states that the assessor team presents comments verbally to key people in the educational institution. If anything is unclear or there are issues or disagreements on the points made by assessors, educational institution is allowed to raise questions for discussion, clarity, and clarification. The assessor team will summarize the assessment results for its report writing EQA.

Item 4.3 After the institution visit: Item 3.1 states that the assessors submit the draft to the institution 15 days after the institutional visit is completed for the review and approval of the institution. The institution reviews and approves the draft within 15 days after having received it. If the review of the assessment results is not returned within the due date and it is assumed that the institution has approved the draft of the assessment report.

Glossary

<i>Application of knowledge, skills and responsibility</i>	Abilities of individuals resulting from the learning process, knowledge, social skills, work experience, education and training which would facilitate professional development. Ability to communicate, leadership, responsibility, and autonomy, such as decision-making and responsibilities to others and themselves, are also included
<i>ASEAN Qualifications Reference Framework</i>	a common reference framework which functions as a device to enable comparisons of qualifications across ASEAN Member States
<i>Education and Training Institutions</i>	organizations which are responsible for providing educational and training
<i>Educational Qualifications</i>	refers to a formal certificate, diploma or degree for each level and type of education such as basic, vocational and higher education
<i>External Quality Assurance</i>	assessment and monitoring educational quality and standards of the institutions from outside to ensure quality, further development of educational quality and the standards of these institutions. Such assessment and monitoring are carried out by the Office for National Education Standards and Quality Assessment by people or external agencies certified by the Office
<i>Formal education</i>	As defined in the aforementioned National Education Act, formal education specifies the aims, methods, curricula, duration, assessment, and evaluation conditional to its completion. General and vocational education is provided at basic and higher education levels by both public and private bodies

<i>Informal education</i>	enables learners to learn by themselves according to their interests, potentialities, readiness and opportunities available from individuals, society, environment, media, or other sources of knowledge
<i>Internal Quality Assurance</i>	assessment and monitoring of educational quality and the standards of the institutions are carried out by the staff of the institutions concerned or by parent bodies with jurisdiction over these institutions
<i>Knowledge</i>	concerned with facts, principles, theories, and guidelines related to learning or working, focused on theoretical and factual
<i>Learning Outcomes</i>	indicative criteria of learning characteristics and results derived from the process of the learning standards of the curriculum at each level or type of education and experience from practical training or work. Learning outcomes are divided into three dimensions, as follows: knowledge, skills and application of knowledge, skills and responsibility
<i>Lifelong Education</i>	education resulting from the integration of formal, non-formal, and informal education so as to create the ability for continuous lifelong development of quality of life
<i>Non-formal Education</i>	flexibility in determining the aims, modalities, management procedures, duration, assessment and evaluation conditional to its completion. The contents and curricula for non-formal education shall be appropriate, respond to the requirements, and meet the needs of individual groups of learners
<i>Occupational Standards</i>	guidelines for identifying levels, performances or competencies of different complexities, comprised of occupational standards and professional qualifications, skill standards, and international occupational standards

<i>Professional Standard and Quality Assurance Organizations</i>	organizations which are responsible for developing the skills according to the international standard and implementing the support of standardized tests, a labour skills competition and the development of the workforce to meet the needs of labour market
<i>Referencing</i>	process resulting in the establishment of a relationship between the Thailand National Qualifications Framework (Thailand NQF) and ASEAN Qualifications Reference Framework (AQRF).
<i>Skills</i>	abilities in work performance assigned to an individual to manage and solve problems with cognitive skills related to logical, intuitive and creative thinking or practical skills in terms of using tools and equipment expertly
<i>Thailand National Qualifications Framework</i>	a framework which provides linkages between the learning outcomes for each level of educational qualifications, as stipulated by levels and types of education, and each level of competencies in occupational standards
<i>Training System</i>	all mechanisms which develop the knowledge, ability and skills of the workforce and improve their quality of life for learners who are outside the school system and manpower

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1st Technical Expert Workshop and AQRF Committee Meeting
9 – 10 February 2017, Jakarta, Indonesia



2nd Technical Expert Workshop and AQRF Committee Meeting
12 – 13 July 2017, Manila, the Philippines



3rd Technical Expert Workshop and AQRF Committee Meeting
13-17 November 2017, Kuala Lumpur, Malaysia



4th AQRF Committee Meeting and NQF Phase IV Workshop
14 – 16 May 2018, Bangkok, Thailand



5th AQRF Committee Meeting and NQF Phase IV Workshop
27 – 29 November 2018, Bandar Seri Begawan, Brunei Darussalam



6th AQRF Committee Meeting and NQF Phase IV Workshop
21 – 23 May 2019, Luang Prabang, Lao PDR



7th AQRF Committee Meeting and NQF Phase IV Workshop
28 – 30 October 2019, Yogyakarta, Indonesia





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