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TVET and the Higher Education Quality

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TVET and the Higher Education Quality

I. Background on the Priority Area

A. Technical Vocational Education and Training¹

1. General Background

APEC members have achieved impressive growth rates in recent years. According to Forbes magazine, about one-third of the 2000 largest companies in the world are now based in Asia. ADB's recent study² projects that by 2050, Asia could account for 51% of world GDP (27% in 2010), with a six fold increase in per capita income, to reach European levels of today. However, Asia is also home to the largest number of the world's poor. Unemployment and underemployment remain vexing issues. Assuring sustainable and quality jobs still is one of the most important policy imperatives of current times. Education and training are occupying center stage in public policy and private investment more than ever before³. Whether developed or developing, APEC economies are concerned with finding the appropriate talent for jobs and building a highly skilled workforce to maintain and increase their competitive strength in global markets.

A number of APEC economies have reached or are approaching middle income levels. The structural transformation, such as the share of manufacturing and services in GDP and employment, is ongoing and diverse. Some economies have pursued policies of industrial upgrading and diversification towards more sophisticated products which increase labor productivity, while others have pursued service-led growth. These economies need to consider aligning TVET policies with economic and industrial policies to sustain growth, productivity and competitiveness. There is the need for re-engineered, modernized, and innovative TVET system, contributing to employability and sustainable livelihoods.

2. TVET Situation of 10 Economies⁴

China developed and administered a TVET and HEQ questionnaire in 2011. When the information was gathered from the surveys, it was found that different government departments are in charge of TVET in different economies. TVET systems are quite different in economies dealing with the students' age, length of programs, credentials, etc. The large differentiation in the results of the surveys indicate that there may be some ambiguity in the interpretation of the terms used in the surveys. With regards to the different education framework across the APEC economies, survey should be improved to ensure the survey results are comparable across APEC economies. Even so, we can still gain a lot from the survey. If we focus on TVET in the education area, we can gather up the students' age and general enrollment ratio, as follows (see table 1):

<Table 1> Students' Age and Enrollment in the Respondent Economies

Economy	Students' Age	Enrollment
Australia	15-64	6.05% (see note)
Brunei Darussalam	15-22	50%

¹ Technical and Vocational Education and Training (TVET) is concerned with the acquisition of knowledge and skills for the world of work. Throughout the course of history, various terms have been used to describe elements of the field that are now conceived as comprising TVET. These include: Apprenticeship Training, Vocational Education, Technical Education, Technical-Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education (WE), Workplace Education (WE), etc. Several of these terms are commonly used in specific geographic areas.

² ADB. 2011. Asia 2050-Realizing the Asian Century. Asian Development Bank, Singapore.

³ Stephen P. Groff. Vice president of ADB Speech on December 12, 2011

⁴ The P. R. China designed a survey in November, 2011. Ten economies answered and returned the survey to PRC by the end of 2011. They are: Australia, Brunei Darussalam, Chile, the People's Republic of China, Indonesia, Japan, Mexico, New Zealand, Chinese Taipei, and the United States.

Chile	15-21	45%
China	15-21	50%
Indonesia	16-18	32%
Japan	15-no limitation	28%(high school level), 22.9% (higher education level)
Mexico	14-17	9.6% at the secondary education level ⁵
New Zealand	15- no limitation	impossible to estimate ⁶
Chinese Taipei	15-30	70.88%
USA	14-65	99% ⁷

Note: The facts and figures for this group of Australians is as follows: 13.8% are enrolled in higher education; 6.5% are in VET taking an apprenticeship or traineeship; and 5.8% were enrolled in non-apprenticeship publicly funded VET. There is also an unknown number of VET students in non-publicly funded VET places (this data is not available to the National Centre for Vocational Education Research (NCVER), the publicly funded data collection agency))

According to the survey and other research, we found that TVET system in some economies is still separate from other types of education. Some economies (Japan, Australia and New Zealand) offered specialized courses and integrated courses in the secondary level and tertiary level. It is difficult to estimate the TVET enrollment. The USA Students may begin taking classes of a technical and occupational nature starting in the ninth grade, approximately 14 years old. As defined in the United States, "career and technical education" does not extend past an "associates degree," which can be earned ordinarily through a course of study based on two full-time years of tertiary training. Workers seeking retraining may reenter education and training programs at any age. Since the traditional retirement age in the United States is generally 65 years old, that figure is used above as an upper limit for the age of trainees; however, some students are older.

Students who access to Tertiary TVET have more varieties in educational backgrounds and ages. Some members' TVET institutions at tertiary level are closely connected to secondary school. In some economies, with their lifelong TVET system, students could access tertiary level TVET by various approaches. Length of the TVET program needed to obtain credentials varies in the different members. It is very flexible in some members. The length of the program at the secondary level ranges from a few months to 3 years, according to the students' need and qualification demands. We can see clearly there are two paths of TVET in APEC economies: integrated system and separate system.

(1) At Secondary level

In Brunei, China, Chinese Taipei and Thailand, students can choose specialized TVET institutions such as secondary vocation schools. Some members offer student vocational courses in the institutions of general education. In Peru, secondary level technical education is given to all students in the last years of Basic Education (upper secondary education) through the curricular area "Education for the Workplace". In New Zealand, Government funding allows schools to provide students with access to vocational training with Tertiary providers and workplace learning with local employers. Australia has arrangements in place for students to undertake apprenticeships at secondary school. Participation in VET in schools peaks at around 16 years of age with 2.4% of secondary school students undertaking a school based apprenticeship and a further 27.3% enrolled in other VET programs.

⁵ It is important to mention that the majority of students do attend general high school or technical high school programs that do provide access to higher education.

⁶ As many students combine vocational and academic study. TVET is not always provided separately from other types of education.

⁷ Almost all secondary students (ages 14 through 18) take some courses that are in the TVET group, although only approximately 20 percent of secondary students concentrate in TVET as a substantial part of their secondary educational program. According to the US Department of Labor; in October 2011, it was just under 70% that high school leavers who progress into Colleges, including to vocational colleges.

(2) At Tertiary Level

In China, most TVET at the tertiary level is offered in specialized institutions. Peru's tertiary TVET system is similar to China. The survey also shows that there is a greater proportion of specialized TVET institutions at the tertiary level than at the secondary level. (See table2).

<Table 2> two different paths of TVET⁸

Members	percentage of general educational institutions offering TVET		the percentage of these specialized TVET institutions among the total institutions	
	Secondary	Tertiary	Secondary	Tertiary
Brunei	100%	Will have in 2008	27%	40%
China	<10%	<10%	46%	58%
Hong Kong, China	40%	100%	N/A	100%
Peru	100%	N/A	0%	64.37%
The Philippines	N/A	72%	5.70%	16.10%
Chinese Taipei	45%	51%	N/A	N/A
Thailand	5%	30%	40%	40%
USA	99%	99%	7%	41%

* Japan and New Zealand have all forms of TEVT in both Secondary and Tertiary Level, but no data available

** In the Australian context it is difficult to disaggregate participation in tertiary studies from participation in vocational education and training. Vocational education and training is delivered by Registered Training Organizations (RTOs) which are accredited and regulated by the domestic regulator Australian Skills Quality Authority and where appropriate state-based regulators. The RTOs deliver a range of VET qualifications from Certificate 1 through to Graduate Vocational Certificates and Diplomas; a range of qualifications that encompass both "secondary" and "tertiary" qualifications as described by ISCED 2011. Public universities may also be RTOs and deliver both tertiary and vocational education and training.

B. Higher Education Quality

1. Overview

In the context of knowledge economy, information communication technology and globalization in the world, the relationship between the economic growth and higher education is more and more connected. According to the World Bank, the global gross ratio in higher education had increased from 18.1% in 1999 to 27.1% in 2009. The quantitative expansion of higher education was not only from the increasing social demands for higher education, but also from the labor market of human resource for higher education. The importance of the higher education market is increasing greatly and also challenging its development in the competitive ages. During the expansion of higher education in the past two decades, there are always some debates and discussions, especially with regard to the quality of higher education.

In the 21st century, the higher education quality becomes one of the priorities, which the governments, the industries, employers, students and families all are taking into consideration. But, the term "quality" of higher education is difficult to clarify clearly. As Georges Haddad noted, "higher education quality is a very complex issues, including the history and the tradition, the culture and the ancient wisdom, the economy and the employment, the society and the development, as well the individual roles as a citizen" (GUNI, 2007). In the massive higher education era, the higher education quality should be re-defined with academic and practical perspectives.

⁸ By the APEC survey of 2007.

A seminar titled “Quality in Higher Education: Identifying, Developing and Sustaining Best Practices in the APEC Region” was held in Hawai’i last year. And now higher education quality had become one of the priorities in educational cooperation areas among APEC. How to implement the priority of higher education quality is an urgent task for all of APEC at all levels including by region, economy, educational system, institution, program and faculty/course.

2. Factors

The higher education is influenced directly and significantly by the knowledge economy and the globalization. And the higher education development in one economy is also constrained with its pattern of economic development, the amount of population, the scale of education and so on. APEC is a diversified region so that the regional features of APEC should be considered when the higher education quality is focused now. The following main features of APEC, especially the external factors relates to higher education quality, should be taken consideration into when we discuss the higher education quality.

(1) Population and growth

It is a mutual cause-effect relationship between the population and the economic & social development perhaps. The population and its growth are not always the positive or negative influence on economic and social development for one economy or a region. In the world in 2009, the total population reached to 6.7 billions and the average percent of population growth was 1.1%. APEC total population is nearly about 40 percent of the world. The differences in population and population growth in APEC members are listed in Table 3.

Table 3: Population and growth among APEC (2009)

Economy	Total Population	Population growth (%)
Australia	22,328,800	2.1
Brunei Darussalam	398,920	1.8
Canada	34,108,752	1.3
Chile	17,113,688	0.9
China	1,338,299,512	0.5
Hong Kong, China	7,067,800	0.4
Indonesia	239,870,937	1.0
Japan	127,450,459	-0.1
Korea	48,875,000	0.3
Malaysia	28,401,017	1.6
Mexico	113,423,047	1.3
New Zealand	4,367,800	1.1
Papua New Guinea	6,858,266	2.3
Peru	29,076,512	1.1
Philippines	93,260,798	1.7
Russia	141,750,000	-0.1
Singapore	5,076,700	3.0
Thailand	69,122,234	0.6
United States	309,050,816	0.9
Viet Nam	86,024,600	1.1
Chinese Taipei	23,214,620	2.1

Source: <http://data.worldbank.org.cn/indicator/SP.POP.TOTL> ;
<http://data.worldbank.org.cn/indicator/SP.POP.GROW/countries>

(2) GDP per capita

GDP is always recognized as one of indicators related to social and economic developmental for an economy. In the world, GDP per capita are 9161.1 US\$ in 2008, 8586.8 US\$ in 2009, 9216.3 US\$ in 2010. According to the data of GDP in 2010, United States, China and Japan are the first, second and third largest economy respectively both in APEC and in the world. But among APEC, there is quite gap of GDP per capita between the developed members and the developing members.

The GDP growth was positive in 2010 for the most of APEC members. This well economic development trend will provide better conditions for higher education development. Meanwhile, this also will bring forward new demands and high criterions for higher education quality.

Table 4: GDP per capita in 2008—2010 (unit : US\$)

Economy	2008	2009	2010
Australia	48,348	42,131	—
Brunei Darussalam	37,414	27,390	—
Canada	45,003	39,599	46,148
Chile	10,166	7,948	11,888
China	3,414	3,749	4,428
Hong Kong, China	30,865	29,882	31,758
Indonesia	2,172	2,272	2,946
Japan	38,212	39,456	43,137
Korea	19,162	17,110	20,757
Malaysia	8,066	6,909	8,373
Mexico	9,909	7,880	9,166
New Zealand	27,599	29,352	—
Papua New Guinea	1,223	1,181	1,382
Peru	4,456	4,412	5,291
Philippines	1,925	1,836	2,140
Russia	11,700	8,615	10,440
Singapore	39,136	36,758	43,867
Thailand	3,993	3,838	4,613
United States	46,971	45,745	47,184
Viet Nam	1,070	1,130	1,224
Chinese Taipei	—	—	—

Source <http://data.worldbank.org.cn/indicator/NY.GDP.PCAP.CD>

(3) Internet users

Information and communication technology has brought new opportunities for the world and the society. Internet is becoming an important indicator that measures the social development and individual living. Internet user with access to the worldwide network is adopted as a new indicator of the development, the amount of internet users per 100 people. Another detailed indicator is the amount of users with broad band per 100 people. According to International Telecommunication Union, the average levels of internet users are 27.1 in 2009, and the amount of users with broad band is 7.3 in the world.

Table 5 : Internet users among APEC (Unit: per 100 people)

Member	Internet users			Internet users with broad band		
	2007	2008	2009	2007	2008	2009
Australia	67.9	70.6	71.8	22.92	24.65	24.6
Brunei Darussalam	46.2	69.4	81.4	3.08	4.39	5.11
Canada	72.8	75.3	77.7	27.52	29.55	29.55
Chile	31.0	32.5	34.0	7.83	8.50	9.82
China	16.1	22.5	28.8	5.04	6.29	7.78
Hong Kong, China	57.2	59.1	61.4	27.42	28.13	29.42
Indonesia	5.6	7.7	8.4	0.34	0.42	0.72
Japan	74.1	75.2	77.7	22.15	23.58	24.86
Korea	78.0	80.2	80.9	30.36	31.84	33.54
Malaysia	54.7	54.8	56.6	—	—	—
Mexico	20.2	21.0	25.4	4.18	6.86	8.86
New Zealand	69.2	71.4	83.4	20.17	21.43	22.73
Papua New Guinea	1.8	1.8	1.9	0.00	0.00	—
Peru	24.9	25.0	28.1	2.02	2.55	2.83
Philippines	6.0	6.2	6.5	0.56	1.16	1.88
Russia	24.6	32.0	42.1	3.45	6.54	9.09
Singapore	67.7	69.6	73.3	19.53	20.73	22.52
Thailand	19.8	23.6	25.5	1.35	1.39	1.45
United States	73.5	75.8	78.1	23.28	25.27	27.78
Viet Nam	20.9	24.2	26.8	1.54	2.41	3.74
Chinese Taipei	—	—	—	—	—	—

Sauce: <http://data.worldbank.org.cn/indicator/IT.NET.USER.P2/countries>

In table 5, the digital gap in ICT should be mentioned. ICT will be a possible key factor which influences seriously the higher education development both in quantitative expansion and in qualitative improvement.

(4) Gross enrollment in higher education

Gross enrollment is an indicator which shows the scale and the access in tertiary education. Based on World Bank statistic data, the average global gross enrollment in tertiary education has been increased from 18.1% in 1999 to 27.1% in 2009 , and there is a quite differences among APEC. .

Table 6 : Gross enrollment in the tertiary education among APEC (Unit : %)

Member	2007	2008	2009
Australia	22	23	25
Brunei Darussalam	15	16	17
Canada	—	—	—
Chile	52	55	—
China	22	23	25
Hong Kong, China	43	56	57
Indonesia	18	21	24
Japan	58	58	59
Korea	96	98	100
Malaysia	32	36	—
Mexico	26	27	28
New Zealand	79	78	84
Papua New Guinea	—	—	—
Peru	—	—	—
Philippines	—	29	—
Russia	75	77	—
Singapore	—	—	—
Thailand	46	45	45
United States	82	83	86
Viet Nam	18	19	20
Chinese Taipei*	85.13	83.18	82.17

Sauce: <http://data.worldbank.org.cn/indicator/SE.TER.ENRR/country>

*http://www.edu.tw/statistics/content.aspx?site_content_sn=27359

The enrollments in higher education among APEC all are rising steadily, but there are still big gaps among different economies, and the growth rates are not same. The more critical issue is that how about the relationship between the quantity and the quality. In the transition from elite stage to massive stage in higher education, there is a lot of question or blame on higher education quality inevitably.

(5) Expenditure per student

Usually, public expenditure per student is the public current spending on education divided by the total number of students by level, as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities. This level of expenditure is called the input level in education. The table 5 is a list of expenditure per student in tertiary education among APEC. The necessary input is important, but not means that the more in expenditure, the better in quality.

Table 7 : Expenditure per student in tertiary education among APEC

(Unit: % of GDP per capita)

Member	2006	2007	2008	2009
Australia	20.6	20.2	19.8	—
Brunei Darussalam	—	—	—	—
Canada	—	—	—	—
Chile	11.8	11.5	12.1	—
China	—	—	—	—
Hong Kong, China	57.2	38.5	28.6	56.3
Indonesia	—	18.7	16.2	—

Japan	19.1	20.1	20.9	—
Korea	9.5	9.0	10.1	—
Malaysia	59.6	49.4	33.9	—
Mexico	35.3	37.0	—	—
New Zealand	25.9	28.1	—	31.0
Papua New Guinea	—	—	—	—
Peru	10.9	—	—	—
Philippines	—	9.5	—	—
Russia	13.2	—	14.2	—
Singapore	—	—	—	27.3
Thailand	29.3	—	22.0	22.3
United States	25.0	21.7	21.1	—
Viet Nam	—	—	61.4	—
Chinese Taipei	—	—	—	—

Sauce: <http://data.worldbank.org.cn/indicator/SE.XPD.TERT.PC.ZS/countries>

(6) Ratio of female to male

Gender is an important factor in education. Education equity includes the gender equity certainly. The table 6 is about the ratios of female to male tertiary enrollment among APEC, which come from UNESCO Institute for Statistics. The global average ratio in tertiary education is 108.2 in 2009. Anyway, the gender equity or gender sensitivity should be taken into consideration while the higher education quality is addressed.

Table8:Ratio of female to male tertiary enrollment among APEC

Member	2007	2008	2009
Australia	128	130	133
Brunei Darussalam	187	197	173
Canada	—	—	—
Chile	101	103	106
China	100	104	107
Hong Kong, China	99	101	101
Indonesia	99	92	96
Japan	88	88	89
Korea	67	69	70
Malaysia	130	130	—
Mexico	98	98	98
New Zealand	146	146	145
Papua New Guinea	—	—	—
Peru	—	—	—
Philippines	—	125	—
Russia	136	136	135
Singapore	—	—	—
Thailand	124	122	124
United States	143	141	141
Viet Nam	100	98	99
Chinese Taipei	105	106	107

Sauce: <http://data.worldbank.org.cn/indicator/SE.ENR.TERT.FM.ZS/countries>

(7) Labor force with tertiary education

The ultimate result of higher education quality should be transferred into the performance of labor force. Labor force with tertiary education is the proportion of labor force that has a tertiary education, as a percentage of the total labor force. This data always be seen the evidence which is able to promote the economic growth.

Table 9: Labor force with tertiary education (of the total) in 2007 (Unit: %)

Member	Total	Male	Female
Australia	33	25	37
Brunei Darussalam	—	—	—
Canada	46	41	52
Chile	25	22	31

China	—	—	—
Hong Kong, China	26	25	26
Indonesia	7	6	8
Japan	40	40	39
Korea	35	38	31
Malaysia	20	17	26
Mexico	17	16	19
New Zealand	37	33	43
Papua New Guinea	—	—	—
Peru	34	36	32
Philippines	28	24	34
Russia	53	45	61
Singapore	24	23	24
Thailand	—	—	—
United States	61	58	64
Viet Nam	—	—	—
Chinese Taipei	—	—	—

Sauce : <http://data.worldbank.org.cn/indicator/SL.TLF.TERT.ZS>

<http://data.worldbank.org.cn/indicator/SL.TLF.TERT.FE.ZS>

<http://data.worldbank.org.cn/indicator/SL.TLF.TERT.MA.ZS>

(8) Unemployment with tertiary education

Unemployment is related to the education sometimes, but there is still unemployment with tertiary education. This is a complex problem. Is there any relation between higher education quality and unemployment? At least, from Table 10, the gender gap in unemployment with tertiary education is obviously. In the labor market, the female with higher education seems to be in disadvantage, compared to male with higher education.

Table 10 : Unemployment with tertiary education in APEC in 2007 (unit : %)

Member	Total	Male	Female
Australia	18	15	21
Brunei Darussalam	—	—	—
Canada	31	27	37
Chile	25	21	29
China	—	—	—
Hong Kong, China	17	15	19
Indonesia	10	7	13
Japan	33	31	36
Korea	35	34	37
Malaysia	25	19	35
Mexico	23	20	27
New Zealand	27	24	30
Papua New Guinea	—	—	—
Peru	38	36	39
Philippines	39	37	45
Russia	32	26	40
Singapore	43	40	48
Thailand	—	—	—
United States	46	42	50
Viet Nam	—	—	—
Chinese Taipei	—	—	—

Sauce: <http://data.worldbank.org.cn/indicator/SL.TLF.TERT.ZS>

<http://data.worldbank.org.cn/indicator/SL.UEM.TERT.FE.ZS>

<http://data.worldbank.org.cn/indicator/SL.UEM.TERT.MA.ZS>

(9) Others

Obviously, besides the above factors, there are some factors which are from the inside of higher education system and institutes, such as:

- Faculty (number, quality, education, experience, etc.)
- Types of programs offered
- Relationship with secondary education
- Relationship with business and industry

Anyway, higher education quality is a comprehensive and complex issue.

3. Critical Challenges

According to the statistics above, the socio-economic development status, population size and the ICT development levels of APEC members diverge in an individual sense, which naturally lead to diversified differences in terms of higher education development level. As consequence, when the issue of higher education quality is approached, the diversified pattern demonstrated by members should be kept in mind. In fact, since the accession into the 21st century, great challenges as well as opportunities have been brought along to the development of higher education by speedy social advancement and constantly expanding human needs. As it is found through literature review, the critical challenges existing in higher education quality are listed as the follows.

(1) Multi-dimensional understanding on higher education quality

As it was pointed out in the *World Declaration of Higher Education for the Twenty-First Century: Vision and Action* passed in the first World Conference on Higher Education in Paris in 1998, "Quality in higher education is a multidimensional concept, which should embrace all its functions, and activities: teaching and academic programmes, research and scholarship, staffing, students, buildings, facilities, equipment, services to the community and the academic environment", and "Due attention should be paid to specific institutional, domestic and regional contexts in order to take into account diversity and to avoid uniformity".

The complexity of higher education quality is best demonstrated by its own nature which is a collective result taking shape under the numerous driving forces. Those areas it concerns apart from teaching and research in an internal sense, also include increasingly profound relativity to social, scientific and technological aspects. Governments, enterprises and employers, higher education institutions, students and parents all play their due part in the great mechanism of higher education quality. Those plentiful of different expectations held towards higher education products give rise to diverse value about this issue, which at the same reflect the differentiation of people understanding.

In the *Declaration about Higher Education in Asia and the Pacific* (Tokyo): "quality is a multidimensional concept and it is not possible to arrive at one set of quality standards applicable to all countries and against which institutions can be assessed." The quality of higher education should be discussed in a dynamic context, rather than an ossified one. And the measurement standard should not be set in an absolute way, but a relative fashion. From a global perspective, the concept itself as well as its measurement standard should be allowed to vary in different economies, regions and levels. Uniformity is inappropriate require in the discussion of this issue.

Although the diversity has been recognized by most member regarding the concept of higher education quality and evaluation and recognition system most coordinated to specific reality has been formulated under the principle of pertinence, certain topics, for example, the exact content to be cover by a diversified value of higher education quality, the defining of an applicable concept of higher education quality and how to coordinate diversified values to accept a particular quality evaluation standard still share much room of debate.

(2) Changing roles in different context: Government, Market and Institute.

The service function of contemporary higher education has become increasingly complex and diverse. In order to better satisfy the needs of students, enterprises and employers, higher education institutions are working hard in opening new majors and academic directions, or providing numerous training programs. The relation between higher education institution and students has been transformed into a connection bridging service provider and consumers. In the meantime, profit-gain enterprises start their involvement in this field in ways of establishing modern education agencies, offering scholarships and kicking off various kinds of cooperative educational and research projects,

and their vitality is clearly on the rise worldwide.

Disagreements have never abated in terms of the impact market imposed upon higher education. One of the most heated topics rests on the nature of this impact – whether it is positive or negative. Some people believe that with the penetration of market competition universities would be more aware of self-improvement thus lifting up education quality; others consider market mechanism never shift its focus away from short-term gains, and the fact that higher education institutions' blind involvement in a business manner would undermine the academic and teaching liberty and dragging down education quality as a result.

As we look at the funding issues, we can see that since the market reform, higher education institutions has to reluctantly let go some of the chunk from the government and adjust to be more market dependent. Market reform has enabled higher education institutions to be more competitive, independent and flexible. The role transformations among institutions, government and market are being considered as the most influential factor behind the quality of higher education. Here are some critical questions expecting further answering: what can government do to better coordinate institution's position between public service and market gains; how can institutions adjust their development orientation to fit in the needs of market and seize more developmental opportunities with good education quality; how to ensure the quality edge to last amid intensive market competition, and so on.

(3) The role of ICT in higher education quality

The field of information communications technology has been bearing most frequent breakthroughs in recent years. With the popularization of information communication technology, multimedia and internet technology has instilled higher education with new vitality and has become an essential component of higher education and a new driving force for educational reforms and advancement. Distance on-line courses and training programs has greatly lift up the enrollment opportunities into tertiary education institutions, and the same time prioritize the allocation and sharing of international educational resources. College course videos available online largely reduced the time and space limitations the common crowd may have when enjoying higher education. At the same time, information communication technology has brought long internal development opportunities as well for institutions. Reforms taking place in lecture content, teaching, evaluation and management methods have had great impact or partially changed traditional knowledge structure and thinking style. Open courses with global perspectives, multi-lingual teaching and cross-border learning and teaching have become ever more commonplace. Worldwide, more and more economies have participated in the construction of a global higher education market as well as network.

Information communication technology poses numerous challenges to higher education quality as well. In lots of trans-boundary regions and economies, within their evaluation system of higher education quality information communications technology is always listed as a vital factor influencing higher education quality. Compared with public policy and school operation regulations which may have more direct influence on the quality of higher education, the impact brought along by information communications technology can only be visible when its coverage is wide enough, which accordingly requires endless and abundant financial support. However, the limitation of public education expenditure is right now capping this expensive momentum. Developed economies with advanced scientific and technological background are more likely to win in this race. In another word, developing economy would need to invest more if they want to score the same record.

While admitting the positive changes brought by information communication technology and set it as a critical indicator in our evaluation system, we must be aware of the overdone superstition or even heterization of this overwhelming trend. During the process of quality accreditation and evaluation, much emphasis has been laid on the equipment ratio other than the actual usage ration. Meanwhile, deep empirical study has been rarely conducted relating to the differences between technological and traditional teaching methodologies. Questions we need to answer in the future include: do we need to evaluate all the majors and disciplines with certain emphasis on information communication technology; is more coordination work going to be required to help move the status quo forward from equipment ownership and usage ratio to the actual impact on learning efficacy; against a general backdrop of increasing enrollment thanks to the popularization of distance education, we are faced

with communication and management problems. How to improve our management and evaluation work so as to ensure quality stability is another indispensable indicator we may consider to add into our quality indicator system.

(4) The role of stakeholders in higher education quality

In the past few years, under the topic of higher education quality, the gravity of research and practice has evolved from pure academic definition discussion to the practical conversation about quality assurance and accreditation. From a global perspective, more and more developed economies have management to establish their own quality assurance system in regard of higher education. Bilateral or multi-lateral cooperation in higher education quality assurance is on constant expansion. A comprehensive quality accreditation at different levels has been gradually built up and has started to exert its positive impact. More and more economies have included higher education quality as one of their essential education policies and a basic condition in higher education management.

Government has always been considered as the leading driving force in the construction of higher education quality system. What the government is most frequently committed to formulating related strategies and plans at an economy level, offering correspondent indicator system and conducting monitoring over the practice. Among the established quality accreditation and evaluation agencies worldwide, apart from those independent from the government, quite a few of them are government run or are founded under government authority. In the past few years, the issue of higher education quality is no long just an inevitable task the government needs to shoulder. It has also attracted close attention from other people involved, for instance, enterprises, employers, students and parents. University rankings have been used by the public as an important reference when talking about higher education quality. Public opinion and media, enterprises, employers, students and parents are far more enthusiastic about the ranking results than the universities engaged themselves, a contradictory fact which may indicate that although a group of stakeholders are extremely eager to play their due part in the quality evaluation system while the universities are not even ready for that.

As higher education enters into the massive age, even more aspects of problems await to be dealt with. As it was mentioned in the *World Declaration on Higher Education for the Twenty-First Century* proposed in 1998, "National and institutional decision-makers should place students and their needs at the centre of their concerns, and should consider them as major partners and responsible stakeholders in the renewal of higher education".

From a market perspective, students are entitled with the right to know about the general development situation of the school and to play a right part in the quality evaluation process; at the same time, higher education institutions, as service providers, have the obligation to be open about relevant evaluation standards, process as well as final results.

Students are an essential component of higher education quality. They should be encouraged to impose more active impact on the assurance and accreditation of higher education quality, other than a detached group. However, the participation of students would make the evaluation process even more complex. Thus, how to ensure an efficient conduct while allowing in more stakeholders other than a solo control of the government is another key issue needs more in-depth discussion.

II. APEC Agenda Motivation

A primary goal of APEC is regional economic integration, cross-border education and systemic reform. That can help our members innovate in education institutions through competitive forces, benchmarking, organizational learning etc, contribute to economic growth in the region through building the stock of highly skilled human capital, lowering costs, building educational capacity through partnerships, driving improvements in the quality and relevance of educational offerings, and contribute to social capital in the region through improved relations and understandings between APEC economies. Member economies' cooperation around education can then build talent among the region's workers to meet the needs for present and future skills and to contribute to sustainable growth in a globalized economy. Today, people who enter the workforce cannot count on spending most of their working lives with one company. Learners of all ages need to master 21st

century skills such as problem solving, critical thinking, data-driven decision making and pattern recognition to help them move from one stage of learning to another and from one industry to another.

A recent OECD report looked at 2009 employment rates in 35 economies, including seven APEC economies. It found that degree-educated workers had employment rate advantages of 7% to 53% over their counterparts with less education, depending on the economy (2011, Chart A7.1). The research told us that TVET and higher education both are very helpful for providing skilled workers with livelihoods financially more secure than their less educated peers. Thus, educators and policy makers should focus equal attention on TVET programs as on college preparation programs.

Inclusive growth begins with inclusive education. We should create infrastructure for vocational technical education and training, as has been done for higher education. We should collaborate with other educational institutions and with the business sector. This can expand opportunities for students, including diverse learners, thus contributing to inclusive growth.

We need to strengthen the curricula for higher education and TVET, especially for teachers. TVET and higher education systems that help students transition from school to career can ensure that employers have effective workers and workers have jobs that pay living wages. Career counseling, internships, and programs that combine on-the-job and academic learning can help students become college and career ready. Also we should hold the institutions of TVET and higher education accountable for providing a high-quality education.

III. Key Research

A. Key Research on TVET

1. The Regional Challenges of TVET

(1) The Challenges Faced by Ten Economies

To question in the survey “In your economy, what regional challenges and difficulties do you have in TVET? Please tick √ in blank.”, the answers are as following (see table 11):

<Table 11> the answers from respondent economies

No.	Challenges and Difficulties	Severity				
		Critical	Above average	Average	Below average	None
1	Traditional mindset and discrimination held by society towards TVET	√√	√√	√√√	√√	
2	Lack of strong govt. support or policy backup			√√√	√√√√√	
3	Funding difficulties	√	√	√√√√	√√√	
4	Shortage of qualified teachers and trainers		√√	√√√√√		√
5	Difficulties for the TVET graduates to get employed		√	√√√	√√√	√
6	Curricula do not match industry needs, reform direly needed		√√	√√	√√√√√	
7	Lack of sufficient facility	√	√	√√√√	√	√
8	Graduates cannot go to a school of a higher grade		√√√	√	√√√	√√
9	System of TVET need to be modernized	√√	√	√√√√	√√	

* Although all the topics shown below are regarded as our challenges, it is difficult to assess each severity (Japan).

Compared with general education, “Funding difficulties,” “Lack of sufficient facility,” and “Traditional mindset and discrimination held by society towards TVET” are additional difficulties for TVET. “Shortage of qualified teachers and trainers” and “Curricula do not match industry needs, reform direly needed” are particular challenges to TVET institutions.

There are five issues universally relevant to APEC economies: (1) the economic relevance; (2) access and equity; (3) organization & management effectiveness; (4) quality of skills acquisition;

and (5) cost, financing and efficiency. These issues are especially acute for developing APEC members.

(2) Other challenges of TVET

From other research⁹, we know some other challenges of TVET: mismatches, educational attainment and efficiency, large informal sector, high youth unemployment, demographic shift and implications, image and mobility, how to stimulate private sector, balance between existing and emerging jobs, and middle income trap. We also know there are other¹⁰ big issues TVET has to tackle:

- Importance of private-public partnerships including financing of skills development for employability and responses to demand side forces and industry partnerships
- Importance of Domestic Qualifications Frameworks and Sector Skills Councils
- Vocationalization of formal education: secondary schooling and higher education in particular
- Breaking down the barriers between formal, informal and non-formal education and training, and placing an emphasis on lifelong learning
- TVET for poverty alleviation, 'decent work' and equity; expanding employment opportunities for youth and other marginalized or disadvantaged groups
- quality assurance; improving the status of TVET in communities
- Contribution to green growth and sustainable development
- Importance of 'soft' skills; key place of work-related values, attitudes and ethics
- Creating an effective 'bridge' between research, policy and practice in support of skills development for employability

2. Educational Responses of Ten Respondent APEC members

Facing the above challenges, all APEC economies had their own responses. From the answered questionnaire, for example, the following information was collected. To the question 2.2, "Please tick "√" at the blank on the right if there are responses which were taken by your economy and make orders for them by priority", the answer is as table 12:

<Table 12> the responses taken by the respondent economies

No.	Responses	
1	Domestic qualification framework	√√√√√√√√ (8)
2	Competence-based program	√√√√√√√√ (8)
3	More opportunities to access higher education	√√√√√√√√√ (9)
4	Improve the TVET quality	√√√√√√√√√√(10)
5	There is flexibility of access and delivery as well as permeability across the different parts of the system	√√√√√√√√ (8)
6	More options mixing general education and TVET	√√√√√√ (6)
7	Improved guidance and counseling	√√√√√√√√ (7)
8	Others(please describe)	

Compared with challenges, the responses seem more varied but still there are commonalities in the responses from both developed and developing economies. For example, "Improving the TVET quality (meet the need of industry)" is the most important response to the challenges raised. Responses include curriculum reform, "teaching factory or business center", strengthening the relationship between industry and schools, NQF, and competence-based program, etc. The "better development of graduates (meet to need of students and parents)" is the second most important response. More opportunities to access higher education, more options mixing general education and TVET, improved guidance and counseling, career education, subsidy funds, etc. are concrete measures.

⁹ *Skills development for employability and inclusive growth: emerging strategies and priorities in Asia's developing economies*, Brajesh Panth, Lead Education Specialist, SAHS, ADB, 2011

¹⁰ Rupert Maclean, The Hong Kong Institute of Education, *Skills development for employability and sustainable livelihoods in the Asia-Pacific*, ADB International Consultative Forum, 2011

The ten responding economies provided many good practices on how they are meeting the challenges of TVET:

Australia

- Additional funding
- Government will introduce a National Partnership to reform the VET system
- Improve qualification completions by quality and quantity
- Strengthen quality assurance
- COAG agreed to a revised National Agreement for Skills and Workforce Development and a new National Partnership on Skills Reform at its meeting on 13 April 2012.

Brunei

- Secure the funding required
- working with relevant industry players so that students and instructors are continuously adopted with the changing industry needs

Mexico

- New curriculum content will be more aligned to real industry needs
- Give VET students more opportunities to continue in to higher education

Chile

- The ministry has put into place grants to stimulate students to attend VET high schools and institutions
- To establish a fruitful dialogue between VET schools and industries

Indonesia

- Make the TVET graduate easier continue to higher grade
- Improve student's competences and skills that needed by industry or doing entrepreneur

Japan

- Promoting structured career education as well as vocational education ranging from early childhood education to higher education
- The goals regarding career education and vocational education were set in the Basic Plan for the Promotion of Education
- Making efforts for further improvement of career education and vocational education

New Zealand

- Introduction of new school qualification from 2002:the NCEA Levels 1-3
- "Creation of Industry Training Organizations (ITOs) and the Industry Training Federation (ITF)" and The "Youth Guarantee"

Chinese Taipei

- Reorganization of technical & vocational education system's structure
- Encourage schools to develop their own unique characteristics and specialty areas

The USA

- Business and industry has worked cooperatively with the US federal government to help define particular "career pathways." Many states have begun to adopt the maps of the career pathways and the 16 clusters.
- Develop strong relationships with businesses and other employers – such as help define course sequences, providing faculty to TVET providers, providing equipment, and providing reliable employment

China

- The National "Medium and Long-Term Plan on Education Reform and Development (2010-2020)" and "Medium and Long-Term Plan on Developing High-Skilled Workers (2010-2020)" targets :TVET should evolve into a modern system to meet the needs of high technology talents demand from industry and desirability of accessing qualified TVET from students and parents
- Strengthen TVET development by promoting school-enterprises partnership
- TVET colleges and schools should reform the curriculum content and delivery to meet the need from industry and local economy
- Introducing market mechanism, strengthening the interaction between employment and training to improve the relevance and effectiveness of the training
- Increase the Government's financial inputs
- Further involvement of stakeholders
- Strengthen the TVET in rural regions

B. Key Research on Higher Education Quality

The results from the questionnaire about higher education quality are listed below

1 . Concept of HEQ

(1) Definition of HEQ

Seven economies said they have the operational definition of HEQ in their economies and 8 Economies have the standard system of HEQ. But, these definitions or explanations with key words are quite different

(2) Degree of satisfaction on HEQ

Seven economies answered the question “How do you feel about higher education quality in your economy at present” with the following responses: 2 are “Dissatisfied”, 4 are “Satisfied” and 1 is “Very satisfied”. This is an interesting result when we compare the response to how stakeholders view higher education in their economy: “The industry and employers” in 6 economies and “the public” in 5 economies are “dissatisfied”.

(3) Some indicators related to HEQ

There are some indicators related to higher education among 9 economies.

<Table 13> some educational indicators among APEC (2010) [Quarter 3 of 2011]

Item	Australia	Chile	China	Japan	Mexico	NZ	Chinese Taipei	Thailand	USA
Has the compulsory education been implemented	11 years	--	9 years	9 years	9 years	Age 6-16	9 years	9 years	YES
Gross enrollment ratio in higher education	--	52%	25%	79.7%	34%	--	67.27%	56.21%	--
The number of higher education institutes	189	173	2,358	4,135	3,817	31	148	170	4,495
The total of full-time students in higher education	1,192,657	1,068,000	23,756,000	3,740,126	2,976,100	466,013	1,240,814	1,731,724	12,722,782 (2009)
Annual economic growth rate	2.7%	5%	10.3%	2.1%	3.5%	1.3%	10.88%	7.8%	1.3%
The ratio of unemployment	5.2%	7%	4.1%	5.4%	4.5%	6.6%	5.21%	1.04%	9%
The rate of unemployment in graduates	3.45%	--	--	9%	8.9%	--	5.62%	1.4%	4.5%

(4) Functions of Higher education

Nine economies had not reached agreement on the functions of higher education. Relatively, only two functions were recognized, “to do scientific research and innovation” and “to promote economic growth

2. Factors on higher education quality

(1) Degree of factors

There are a lot of factors which influence higher education quality in practice, but each factor seems to have a different effect in different economies. “Teaching forces in higher education” seems to be the most important factor. And, the factor of “Linkage between higher education with the society and business” is also ranked as important.

(2) Gender

Gender equity is one of the APEC’s priorities and may be a component of HEQ. Eight economies

agreed that “gender equity is an important component of higher education quality”, and another one economy said females had overtaken males in higher education enrollment.

(3) Top Priority

Five economies put as their top priority to “To improve the quality of higher education” and 3 economies ranked “To focus on the balancing the improvement and the expanding” as their top priority.

3. Ways to enhance higher education quality

(1) Quality assurance system

9 participating economies said they have “a clear and operational system in higher education quality assurance”, but the content among members is not the same based on their answers.

(2) Approach of evaluation

9 economies have “governmental agencies responsible for the monitoring and evaluation of higher education quality”; and 7 economies have “non-governmental independent agencies implementing the monitoring and evaluation of higher education quality”. 6 economies use “regular review by the peers or/and associate of HEI’s”. Only one economy mentioned “international ranking”.

(3) Emphasized Aspects

Economies ranked “to improve gainful employability of graduates” and “to increase the investment in HE” as their two most important aspects of quality. In addition, “to make the effective evaluation in HE” and “to carry out more global cooperation in HE” were ranked as the next most important aspects quality.

(4) Experiences

Through this survey, some valuable information about successful experiences or/and best practice in higher education quality improvement from economies are collected.

4. Perspective

(1) Challenges

All economies had pointed out their challenges in improving higher education quality. Obviously, these challenges are diverse among APEC economies.

(2) Focused fields

There are two areas for future work agreed to by economies to do in future among APEC: “to achieve a better understanding of quality and quality indicators” and “to research mechanisms in higher education quality assurance”.

IV. New directions/recommendations for next steps

Based on the APEC survey and studies we have done that have been focused on responding to the challenges of globalization, to prepare students with 21st century skills, and to be college and career ready, China and the Philippines suggest the priority area of “TVET and Higher Education Quality” should recommend to ministers at the 5th AEMM the following:

Suggestion1 (TVET)¹¹ We should improve the quality of TVET as well as higher education.

Possible Modalities of Cooperation

- Link policy engagement to capacity building to implement reform (Focus on needs of developing economies)
- Stakeholders involvement
- Public Private Partnerships
- Link with Aid Donors to fund reform and capacity building
- Policy Exchange

Priorities/Activities

¹¹ When education sectors and delivery are culturally grounded in widely different education and training systems, there are difficulties in developing modalities across APEC.

- Domestic Qualifications Framework (Based on the each economies' separate work on NQF, we could sharing good practice from developed members)
- QA in TVET in order to develop a common understanding of quality and quality assurance (Improving qualifications, professional and skills recognition by experiences sharing, good practice, study project, etc. We could leverage the work being undertaken through the ASEAN East Asia Summit TVET Quality Assurance Framework project: produce a technical and vocational education and training quality assurance framework for EAS economies, consisting of a set of principles, guidelines and tools which will help EAS economies develop, improve, reform, guide and assess the quality of their TVET systems)
- Identify Skills Needs of APEC (research project)
- Develop and assess student's 21st century skills (study project)
- ICT application for improving the quality (experiences sharing, good practice, etc.)
- Improve high quality international comparisons of TVET systems (enhancing data collection and research project)
- Promote and facilitate flexible content and delivery systems that meet the needs of college and career ready (Seminar)

Suggestion 2(TVET) We should improve lifelong TVET system in content and delivery.

Possible Modalities of Cooperation

- Link tertiary TVET programs to secondary TVET programs for lifelong learning and training
- Link learning to real world training for career ready
- Green skill training

Priorities/Activities

- Career counseling/education (experiences sharing, good practice, etc.)
- Integrated TVET content into general education (good practice, etc.)
- The opportunity of exchange and cooperation for the teachers and students around APEC members (Research project)
- Data collection in order to develop a common framework to the collection of data on cross-border education exchange and cooperation (research project)
- Develop a common understanding of effective approaches and frameworks to facilitate qualifications recognition (research project)

Suggestion 3(HEQ) We should make an agreement on the definition of Higher Education Quality in the context of globalization, knowledge-based economy, inclusive growth and qualified higher education for all.

In the coming of massive age of higher education, higher education is becoming a high focus in the society, which the changes and reforms of higher education are inevitably in time. The relationship between higher education and the external environment is more and more closely tighten. As the expansion of higher education and the frequent global mobility, the complex issues are increased. Although the investment both from the government sectors and from the student families in higher education is increasing gradually, the expenditure of higher education always seems to be limit. Although the higher education quality improvement is making progress, the industries and employers are still not satisfied with the graduates; their demands for higher education quality are increased in the present changing era. Toward the future HEQ among APEC, we should seek the basic common view on higher education quality with consideration the differences in histories and realities of members. To establish the inclusive development view of HEQ in respecting the differences among APEC is the first task in educational cooperation and exchange.

Possible Modalities of Cooperation

- Build mutual understanding on importance and definition of HEQ
- Link policy engagement to capacity building to implement reform(demand and supply)

Priorities/Activities

- Development of APEC Basic Framework of HEQ (indicators and common principles, assessment, etc.) through seminars, workshops and research activities.
- Identification and Share of Good Practices on Quality Assurance of HEQ (accreditation, certification or/and diploma recognition) through meetings and forums.

Suggestion 4(HEQ) All economies should set up the cooperative platform and mechanism TO RECOGNIZE the importance of HEQ in APEC

In the process of globalization, cross border higher education has been developed quickly. The personnel mobility and the institute union are also increasing in the world. Higher education has been given much high expectation in global economic competition. In the changing world, the HEQ has the dynamic features, which are relied on the external social environment and the internal educational development. As present, APEC members had known the importance of assurance and evaluation system in higher education in promoting quality improvement, and these approaches such as quality control, quality assurance, quality accreditation, quality evaluation mentioned by members at governmental and systematic levels have been recognized to some extent.

Possible Modalities of Cooperation

- Public Private Partnerships
- Policy reform and exchanges(Focus on needs of developing economies)
- Professionals and students exchanges(student, academic, and providers)
- Links with academics/industry

Priorities/Activities

- Capacity Building Program for Higher Education Institution among APEC.
- Joint Research Project on Higher Education Quality among APEC
- Study on new demands for HEQ in terms of 21st century skills,
- Investigation on the issues and barriers in cooperation and exchange among APEC
- Developing the examples of successful innovation in improvement of HEQ through cases studies

Suggestion 5(HEQ) We should build the regular dialogue and exchange activities

Globalization of higher education is also becoming the significant trend as the economical globalization. The information and communication are playing more important role. The new ideas from different parts in higher education quality improvement should be encouraged as well exchange and sharing of experiences and best practices are done. The open and interactive development in HEQ among APEC will be aimed to.

Currently, there are some experiences and lessons in quality assurance, accreditation and evaluation in higher education, which are the wealth in quality improvement. Anyway, the critical task for APEC is to build an open platform for releasing information and dialoguing in HEQ.

Possible Modalities of Cooperation

- Seminar , workshop, conference and website
(Capacity building, Access and equity, Effectiveness and efficiency, Teaching, research and social service, Governance and cooperation)

Priorities/Activities

- To Create online learning community or special website of HEQ for policy-makers , staff and researchers in APEC website
- To edit a e-newsletter of HEQ in APEC periodically
- To conduct regular on-line discussion on higher education quality
- To make professionals exchanges with bi-lateral or/and multi-lateral among APEC.

Ministerial Priority Area Paper

TVET and Higher Education Quality

The People's Republic of China,
the Philippines



5th APEC Education Ministerial Meeting
Gyeongju, Korea, 21-23 May, 2012

I. Background of the Priority Area (Technical /Vocational Education and Training)

- APEC members have achieved impressive growth rates in recent years.
 - by 2050, Asia could account for 51% of world GDP (27% in 2010), with a six fold increase in per capita income, to reach European levels of today(ADB,2011).
- Asia is also home to the largest number of the world's poor. Unemployment and underemployment remain big issues.
- Whether developed or developing, APEC economies are keen on finding appropriate talents for jobs and building a highly skilled workforce to maintain and increase competitive strength in global markets.
- A re-engineered, modernized and innovative TVET system, contributing to employability and sustainable livelihoods is very essential.

I. Background of the Priority Area (Higher Education Quality)

- 1 Due to the positive influence of economic growth, the global gross ratio in higher education increased from 18.1% in 1999 to 27.1% in 2009 (the World Bank).
- 2 The expansion of higher education in the past two decades leads to some debates and discussions, especially on the quality of higher education.
- 3 The term "quality" of higher education is difficult to clarify clearly. "higher education quality is a very complex issue, including the history and tradition, the culture and ancient wisdom, the economy and employment, the society and development, as well as the individual roles as a citizen" (GUNI, 2007).
- 4 How to implement the priority of higher education quality is an urgent task for all APEC members at all levels.

II. APEC Agenda Motivation (1)

A primary goal of APEC is regional economic integration, cross-border education and systemic reform, which can help members innovate in education institutions through competitive forces, benchmarking, organizational learning etc.

It will contribute to economic growth in the region through building the stock of highly skilled human capital, building educational capacity through partnerships, driving improvements in the quality and relevance of educational offerings, and contribute to social capital in the region through improved relations and understandings among APEC economies.

Today, people who enter the workforce cannot count on spending most of their working lives within one company. Learners of all ages need to master 21st century skills such as problem solving, critical thinking, data-driven decision making and pattern recognition to help them move from one stage of learning to another and from one industry to another.

II. APEC Agenda Motivation (2)

TVET and Higher Education both are very helpful for providing skilled workers with livelihoods financially more secure than their less educated peers.

TVET and Higher Education systems help students transit from school to career. Career counseling, internships, and programs that combine on-the-job and academic learning can help students become college and career ready.

Inclusive growth begins with inclusive education. Educators and policy makers should create infrastructure for TVET and Higher Education. Also we should hold the institutions of TVET and Higher Education accountable for providing a high-quality education.

III. Key Research (Technical /Vocational Education and Training)

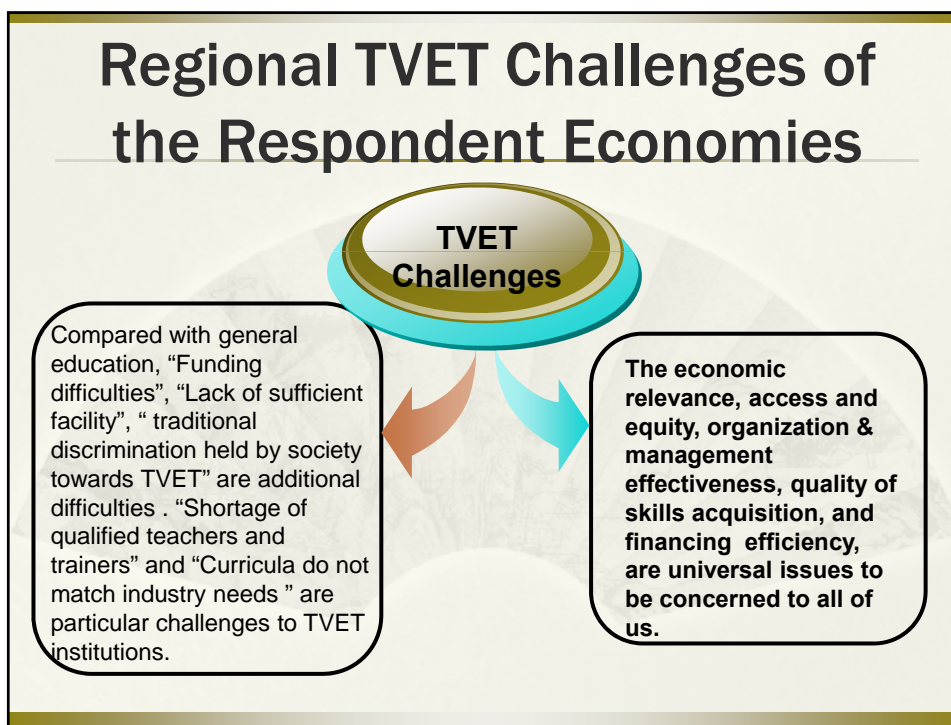
TVET systems are quite different among economies in dealing with students' age, length of programs, credentials, etc. It is difficult to estimate TVET enrollment. Some economies offer specialized courses and integrate courses in secondary level with tertiary level.

Eleven economies responded the survey.
Australia,
Brunei Darussalam,
Chile, China,
Indonesia, Japan,
Mexico, New Zealand,
Chinese Taipei, Thailand
and the United States.

Students entering Tertiary TVET are varied in education backgrounds and ages. Some members tertiary TEVT institutions are closely connected to secondary schools. In some economies with lifelong TVET systems students could access tertiary TVET by various approaches.

We do face some common challenges:

Regional TVET Challenges of the Respondent Economies						
No.	Challenges and Difficulties	Severity				
		Critical	Above average	Average	Below average	None
1	Traditional mindset and discrimination held by society towards TVET	√√	√√√	√√√	√√	
2	Lack of strong govt. support or policy backup			√√√	√√√√√√	
3	Funding difficulties	√	√√	√√√√	√√√	
4	Shortage of qualified teachers and trainers		√√√	√√√√√		√
5	Difficulties for the TVET graduates to get employed		√	√√√	√√√	√√
6	Curricula do not match industry needs, reform direly needed		√√√	√√	√√√√√	
7	Lack of sufficient facility	√	√√	√√√√	√	√
8	Graduates cannot go to a school of a higher level		√√√√	√	√√√	√√
9	System of TVET need to be modernized	√√	√	√√√√√	√√	



Educational Responses of Respondent APEC members

No.	The responses taken by the respondent economies	Number of economies
1	Domestic qualification framework	√√√√√√√√(8)
2	Competence-based program	√√√√√√√√(8)
3	More opportunities to access higher education	√√√√√√√√(9)
4	Improve the TVET quality	√√√√√√√√(10)
5	Flexibility of access and delivery as well as permeability across different parts of the system	√√√√√√√√(8)
6	More options mixing general education and TVET	√√√√√(6)
7	Improved guidance and counseling	√√√√√√(7)

III. Key Research

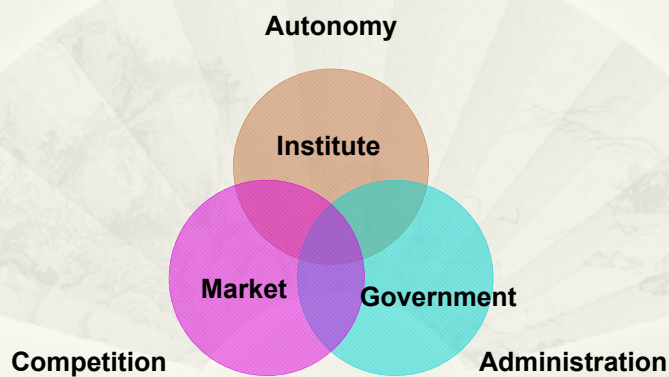
Main Results on HEQ from the Survey

- * Seven economies said they have the operational definition of HEQ in their economies, and 8 Economies have the standard system of HEQ, but the definitions of HEQ's key words are quite different.
- * 2 economies are "Dissatisfied with" their HEQ, 4 are "Satisfied" and 1 is "Very satisfied". **"The industry and employers" in 6 economies and "the public" in 5 economies are "dissatisfied"**.
- * Nine economies had not reached agreement on the functions of higher education. Only two functions were recognized, "to do scientific research and innovation" and "to promote economic growth"
- * There are two areas for future work agreed by economies in future among APEC: "to achieve a better understanding of quality and quality indicators" and "to research mechanisms in higher education quality assurance".

Critical issues in HEQ:
(1) Multi-dimensional Understanding on HEQ

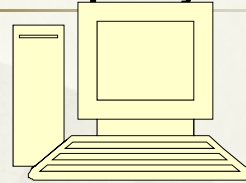


Critical issues in HEQ:
(2) Triangle relations in different higher education systems.



Critical issues in HEQ:

(3) Role of ICT in higher education quality



- * Open courses
- * Cross-border education
- * Talent/Student population mobility
- * Globalization
- * Corporation university
- * Lifelong learning

Critical issues in HEQ:

(4) Blended Participations from Stakeholders in higher education system

Stakeholder

- ◆ Government
- ◆ Society
- ◆ Industry
- ◆ Employer
- ◆ University
- ◆ Faculty
- ◆ Student
- ◆ Family

Participant

- * Decision-maker
- * Administrator
- * Worker
- * Evaluator
- * Client
- * Customer
- * User



Ways to enhance higher education quality

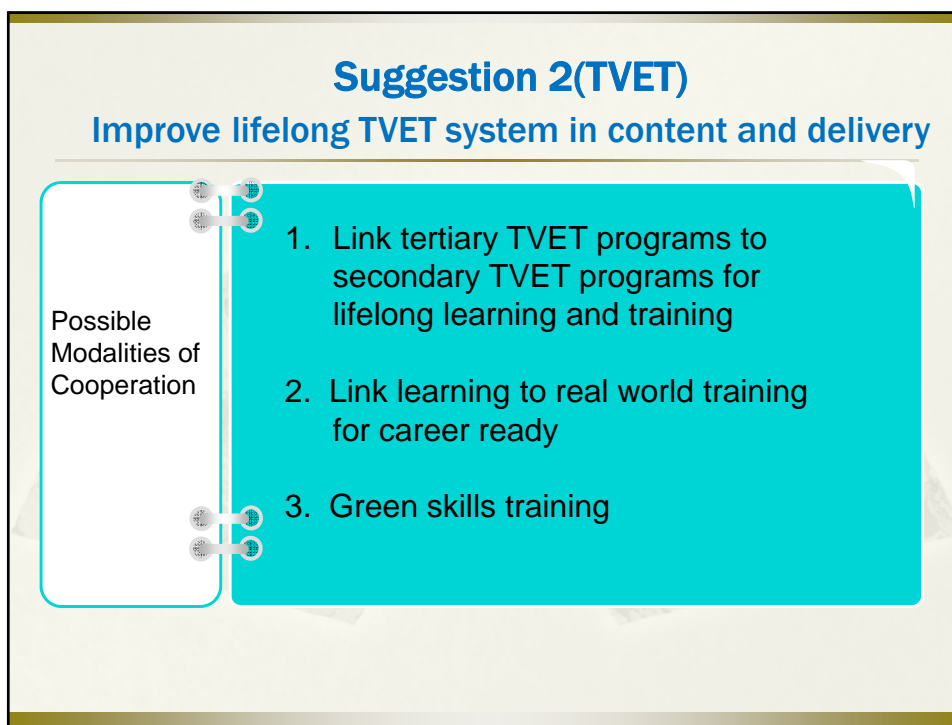
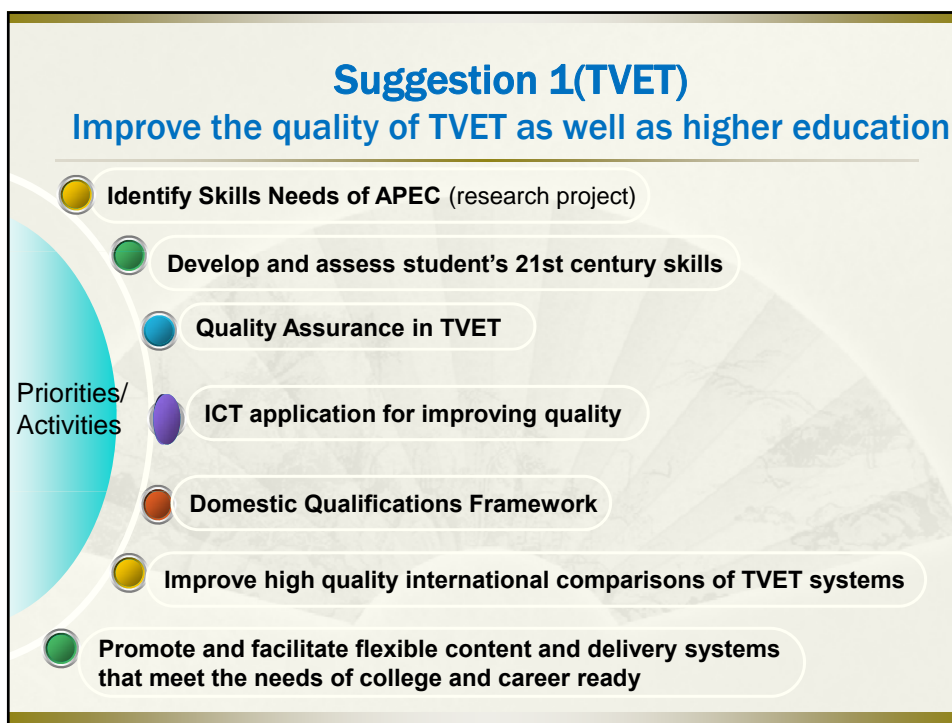
- * **Quality assurance system**
 - * To set up “a clear and operational system in higher education quality assurance”
- * **Emphasized Aspects**
 - * gainful employability of graduates;
 - * More investment;
 - * effective evaluation;
 - * more global cooperation
- * **Approaches of evaluation**
 - * governmental & non-governmental;
 - * peer review & international ranking
- * **Experiences**
 - * valuable information about successful experiences or/and best practice among APEC

Suggestion 1(TVET)

We should improve the quality of TVET as well as higher education



* When education sectors and delivery are culturally grounded in widely different education and training systems, there are difficulties in developing modalities across APEC.



Suggestion 2(TVET)

Improve lifelong TVET system in content and delivery

Priorities/
Activities

1. Career counseling/education
2. Integrate TVET content into general education
3. Exchange and cooperation among teachers and students around APEC members
4. Data collection to develop a common framework on cross-border education exchange and cooperation
5. Develop a common understanding of effective approaches and frameworks to facilitate qualifications recognition

Suggestion 3(HEQ)

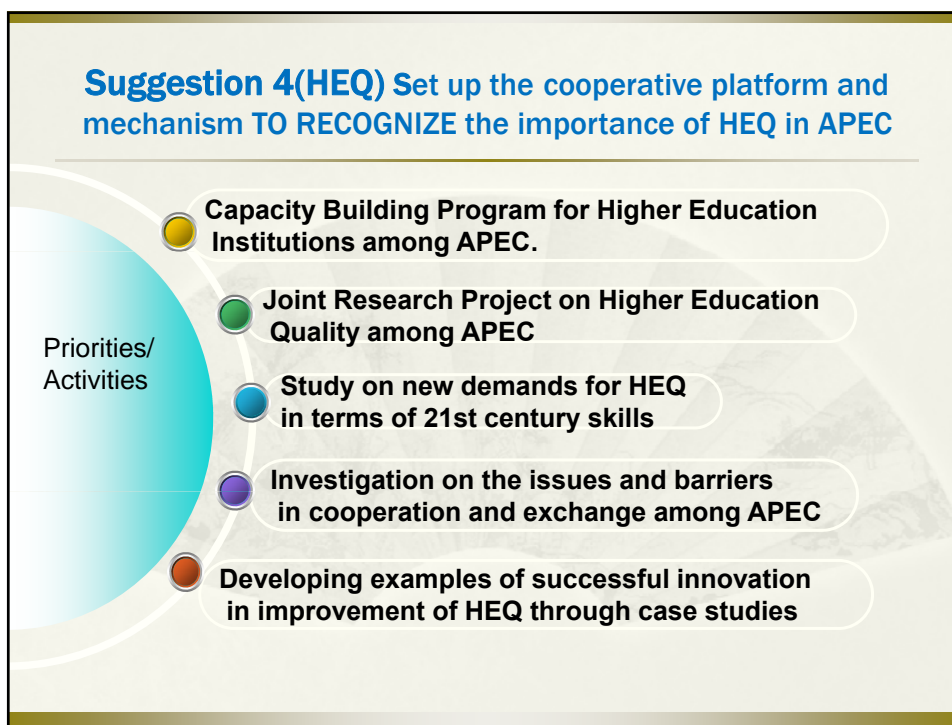
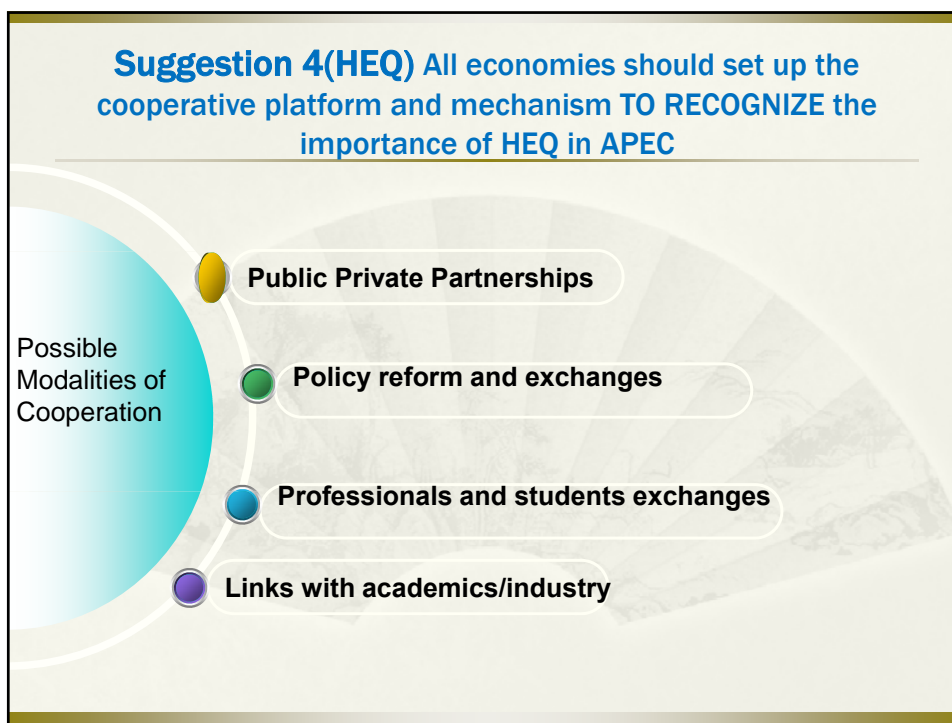
Reach an agreement on the definition of Higher Education Quality in the context of globalization, knowledge-based economy, inclusive growth and qualified higher education for all

Possible Modalities of Cooperation

- Build mutual understanding on importance and definition of HEQ
- Link policy engagement to capacity building to implement reform (demand and supply)

Priorities/Activities

- Development of APEC Basic Framework of HEQ (indicators and common principles, assessment, etc.) through seminars, workshops and research activities.
- Identification and sharing of Good Practices on Quality Assurance of HEQ (accreditation, certification or/and diploma recognition) through meetings and forums.



Suggestion 5(HEQ) We should build the regular dialogue and exchange activities in HEQ

Possible Modalities of Cooperation

- * Seminar , workshop, conference and website
- * (Capacity building, Access and equity, Effectiveness and efficiency, Teaching, research and social service, Governance and cooperation)

Priorities/Activities

- * To Create online learning community or special website of HEQ for policy-makers , staff and researchers in APEC website
- * To edit a e-newsletter of HEQ in APEC periodically
- * To conduct regular on-line discussion on higher education quality
- * To make bi-lateral or/and multi-lateral professional exchanges among APEC.

Thank you very much!



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5th APEC Education Ministerial Meeting
Gyeongju, Korea, 21-23 May, 2012