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ปีการศึกษา 2557

DEVELOPMENT OF INTERNAL QUALITY ASSURANCE INDICATORS OF FACULTY OF EDUCATION IN CAMBODIA

Mr. Sokhom Chan

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Education Program in Educational Measurement and Evaluation
Department of Educational Research and Psychology
Faculty of Education
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สุขุม จัน : การพัฒนาตัวบ่งชี้ประกันคุณภาพภายในของคณะครุศาสตร์ในประเทศกัมพูชา (DEVELOPMENT OF INTERNAL QUALITY ASSURANCE INDICATORS OF FACULTY OF EDUCATION IN CAMBODIA) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ศ. ดร.ศิริชัย กาญจนวาสี, 246 หน้า.

การวิจัยครั้งนี้มีวัตถุประสงค์หลักเพื่อพัฒนาโมเดลตัวบ่งชี้สำหรับประกันคุณภาพภายในของคณะครุศาสตร์ในประเทศกัมพูชา โดยมีวัตถุประสงค์เฉพาะ 2 ประการคือ 1) เพื่อสร้างโมเดลตัวบ่งชี้สำหรับประกันคุณภาพภายในของคณะครุศาสตร์ในประเทศกัมพูชา และ 2) เพื่อประเมินโมเดลตัวบ่งชี้สำหรับประกันคุณภาพภายในของคณะครุศาสตร์ในประเทศกัมพูชา ตัวอย่างที่ใช้ในงานวิจัยครั้งนี้ประกอบด้วย 3 กลุ่มได้แก่ กลุ่มที่ 1 ผู้เชี่ยวชาญด้านอุดมศึกษา จำนวน 4 คน และ ผู้เกี่ยวข้องกับคณะครุศาสตร์ในประเทศกัมพูชา จำนวน 4 คน กลุ่มที่ 2 อาจารย์ บุคลากร และ นักศึกษาในปีการศึกษา 2014 ในประเทศกัมพูชา จำนวน 800 คน และ กลุ่มที่ 3 รองคณบดีคณะครุศาสตร์ และ ผู้อำนวยการของสถาบันฝึกอบรมครูใน 6 ภูมิภาค จำนวน 11 คน เครื่องมือที่ใช้ในการวิจัยครั้งนี้มี 3 ประเภท คือ 1) แบบสัมภาษณ์กึ่งโครงสร้าง 2) แบบสอบถาม และ 3) แบบประเมิน สถิติที่ใช้ในการวิเคราะห์ข้อมูลสำหรับงานวิจัยครั้งนี้ได้แก่ สถิติเชิงบรรยาย การวิเคราะห์เนื้อหา และ การวิเคราะห์องค์ประกอบเชิงยืนยัน ผลการวิจัยสรุปได้ดังนี้

โมเดลตัวบ่งชี้สำหรับประกันคุณภาพภายในของคณะครุศาสตร์ในประเทศกัมพูชาที่พัฒนาขึ้นประกอบด้วย 6 องค์ประกอบ 22 องค์ประกอบย่อย และ 77 ตัวบ่งชี้ องค์ประกอบทั้งหมดได้แก่ 1) ภาวะผู้นำ 2) พันธกิจ การวางแผนเชิงกลยุทธ์ และ การเงิน 3) โปรแกรมการศึกษา 4) คุณภาพของอาจารย์ 5) ลูกค้าและการบริการสนับสนุน และ 6) สิ่งอำนวยความสะดวก

โมเดลตัวบ่งชี้สำหรับประกันคุณภาพภายในของคณะคณะครุศาสตร์มีความสอดคล้องกลมกลืนกับข้อมูลเชิงประจักษ์ ค่าน้ำหนักองค์ประกอบทั้ง 6 องค์ประกอบมีนัยสำคัญทางสถิติที่ระดับ .01 ทุกค่า และ มีขนาดความสำคัญตั้งแต่ 0.583-0.936 องค์ประกอบที่มีความสำคัญที่สุดต่อคุณภาพการศึกษาของคณะครุศาสตร์ในประเทศกัมพูชาคือคุณภาพของอาจารย์ รองลงมา โปรแกรมการศึกษา ลูกค้าและการบริการสนับสนุน พันธกิจ การวางแผนเชิงกลยุทธ์และการเงิน สิ่งอำนวยความสะดวก และ ภาวะผู้นำ

โมเดลตัวบ่งชี้สำหรับประกันคุณภาพภายในทั้งหมดนี้มีความเหมาะสมกับคณะครุศาสตร์ในประเทศกัมพูชา ตัวบ่งชี้ทั้ง 77 ตัวนี้สามารถตอบสนองต่อความต้องการของคณะคณะครุศาสตร์ และคณะสามารถนำตัวบ่งชี้ทั้งหมดนี้ไปใช้ประโยชน์ได้ในระดับสูง

ภาควิชา วิจัยและจิตวิทยาการศึกษา ลายมือชื่อนิสิต .....

สาขาวิชา การวัดและประเมินผลการศึกษา ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

ปีการศึกษา 2557

5683459027 : MAJOR EDUCATIONAL MEASUREMENT AND EVALUATION
KEYWORDS: INDICATORS OF EDUCATIONAL QUALITY / INTERNAL QUALITY ASSURANCE

SOKHOM CHAN: DEVELOPMENT OF INTERNAL QUALITY ASSURANCE INDICATORS OF FACULTY OF EDUCATION IN CAMBODIA. ADVISOR: PROF. SIRICHAI KANJANAWASEE, Ph.D., 246 pp.

The purpose of this research study was to develop a model of internal quality assurance indicators of faculty of education in Cambodia. The two specific objectives were 1) to construct a model of internal quality assurance indicators of faculty of education in Cambodia and 2) to validate the model of internal quality assurance indicators of the faculty. The sample included 3 respondent groups including 1) four experts of higher education and four stakeholders of faculty of education; 2) 800 teachers, staff, and students of faculty of education in the 2014 academic year; and 3) 11 associate deans of faculty of education and directors of regional teacher training centers in Cambodia. Three types of research instrument were used including the semi-structured interview form, questionnaire, and evaluation form. The descriptive statistics, content analysis, and confirmatory factor analysis were used in order to analyze the collected data. The results are concluded as follows:

The model was composed of 6 dimensions and 22 sub-dimensions with 77 indicators. These six dimensions included 1) leadership; 2) mission, strategic planning, and finance; 3) educational programs; 4) quality of academic staff; 5) customers and support services; and 6) physical facilities.

The model of internal quality assurance indicators of faculty of education in Cambodia fitted the empirical data and the six dimensions were important to ensure educational quality of faculty of education in Cambodia in that their factor loadings were statistically significant at the .01 level with the range from 0.583 to 0.936. Of the six dimensions, the most important to ensure educational quality was quality of academic staff, followed by educational programs; customers and support services; mission, strategic planning, and finance; physical facilities; and leadership which was of the least importance to ensure educational quality of the faculty.

The model of internal quality assurance indicators were really suitable for faculty of education in Cambodia in that all the indicators strongly reflect the needs of the faculty and these indicators would be achieved at a high level when applied in the faculty.

Department:	Educational Research and Psychology	Student's Signature	.....
		Advisor's Signature	.....
Field of Study:	Educational Measurement and Evaluation		
Academic Year:	2014		

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LIST OF ABBREVIATIONS

AACTE	American Association of Colleges of Teacher Education
ACC	Accreditation Committee of Cambodia
ACOS	Advisory Committee on Official Statistics
AIHW	Australian Institute of Health and Welfare
AUN	ASEAN University Network
BPEP	Baldrige Performance Excellence Program
EAQAHE	European Association for Quality Assurance in Higher Education
EQA	External Quality Assurance
HEI	Higher Education Institution
IQA	Internal Quality Assurance
JCSEE	Joint Committee on Standards for Educational Evaluation
MoEYS	Ministry of Education, Youth, and Sport
MUST	Macau University of Science and Technology
NIE	National Institute of Education
OHEC	Office of the Higher Education Commissions
ONESQA	Office for National Education Standards and Quality Assessment
PSRBU	Preah Sihanouk Raja Buddhist University
PSTTC	Pre-School Teacher Training Center
PTTC	Provincial Teacher Training Center
RGC	Royal Government of Cambodia
RTTC	Regional Teacher Training Center
UNAIDS	Joint United Nations Program on HIV/AIDS
UNESCO	United Nations Educational, Scientific, and Cultural Organization

CHAPTER 1
INTRODUCTION

1.1 Background and Problem Statement

The rapid change of the world in the 21st century has brought about challenges to individuals and societies, even education sectors (Schleicher, 2012). On the current trend of globalization, quality in higher education has become the most pressing and contemporary issue for discussion among higher education practitioners, researchers, and stakeholders. Learning standards these days are higher than they used to be in the previous decades in that students are in need of more in-depth knowledge and specific skills in order that they can compete with others on the job market (Darling-Hammond, 2006). Altbach, Reisberg, and Rumbley (2009) assure that higher education institutions (HEIs) should provide relevant educational programs with profound knowledge and requisite skills for students in order to live in a borderless economy of the 21st century globalization.

Similar to other countries in the world, Cambodia has paid much more attention to higher education quality since the many periods of civil wars and a tyrannical regime. Recently, the Royal Government of Cambodia (RGC) and the Ministry of Education, Youth, and Sport (MoEYS) have been trying to achieve a long-term vision, aiming "to establish and develop human resources of the highest quality and standards of morality in order to develop a knowledge-based society in Cambodia" (MoEYS, 2014, p. 12); yet, most HEIs have not actively collaborated with the MoEYS to achieve the radical vision. They have focused on what they get from students rather than what they have to provide for them. According to Vann (2012), most HEIs had served as business firms rather than the real education institution. They seemed to be selling out academic courses rather than providing relevant in-depth knowledge for their students. Continuing this unhealthy culture of devoting attention to the short-term benefit will definitely leave Cambodia and her higher education system behind. Similarly, Chet (2006) assured that the higher education sector in Cambodia had been facing two big challenges that could slow down the process of maintaining and enhancing educational quality including 1) devoting much attention to the short-term benefit and 2) expanding HEIs rapidly in the country without a quality assurance system in place.

In response to the new trend in the 21st century and the long-term vision, HEIs should guarantee that the production of human resources is valid and reliable in order to meet the demand of the country and compete against other countries in the world. It is universally accepted that quality of student learning leads to relative success for the 21st century economic context (Imig & Imig, 2007). Hence, HEIs should ensure that their students are qualified enough to meet these key demands. To achieve this, teachers play the most important role during the education process because the quality of student learning relies heavily on teacher quality (Raudenbush, Eamsukkawat, Di-Ibor, Kamali, & Taoklam, 1993). Similarly, Darling-Hammond (2006) claims that teachers' abilities are more important than other educational resources to ensure quality of student learning. Hence, pre-service teachers should be cautiously trained for the teaching profession.

Teachers, whose jobs are to engineer students' spirits, are the finished products of the faculty, institute, school, or center that involves producing human resources for the teaching career. Hence, such educational institutions should ensure that pre-service teachers are well equipped with content knowledge, pedagogy, professional ethics, and other necessary skills for the teaching career before they serve as in-service teachers.

This will be definitely achieved when the HEI creates an effective strategic plan to assemble and channel actual input resources into educational activities and develops a practical guideline for implementing, monitoring, assessing, and improving them. In this sense, criteria or standards of quality assurance are really important to ensure higher education quality.

To date, the Accreditation Committee of Cambodia (ACC) has formulated two guidelines so as to promote, enhance, and assure higher education quality in Cambodia. These are the criteria for Foundation Year Course Assessment and Minimum Standards for Institutional Accreditation. The first one is composed of six dimensions of quality including 1) management and good governance, 2) strategic planning, 3) educational programs, 4) quality of academic staff, 5) teaching and learning resources, and 6) student admission (ACC, 2010a). The other consists of nine dimensions of quality: 1) mission; 2) governing structure, management, and planning; 3) academic programs; 4) quality of academic staff; 5) students and student services; 6) learning services; 7) physical facilities; 8) financial plan and management; and 9) dissemination of information (ACC, 2011a). However, these external criteria or standards cannot well reflect the condition

or characteristics of all types and sizes of HEIs, especially the HEI with many faculties and departments, and the corresponding indicators seem to measure the input, process, and output rather than the outcome and impact of the education system (Bong, 2014). Therefore, it is better for each faculty to set their own criteria or standards of internal quality assurance (IQA) in order that more specific characteristics of the faculty will be reflected and the internal process of implementing, monitoring, assessing, and enhancing educational quality will be more accurate and reliable. However, to develop specific IQA criteria for each faculty, both national and international standards should be used as external sources for IQA indicator development (Stroupe, 2010) and the faculty context should be analyzed to compare and adopt these external standards (S. Mishra, 2007).

Accordingly, the researcher has decided to construct and validate a model of IQA indicators of faculty of education in Cambodia which will be consistent with national and international standards. The expected indicators will represent specific condition or characteristics of faculty of education in Cambodia during the process of monitoring, assessing, and improving the inputs, processes, outputs, outcomes, and impacts.

1.2 Research Questions

1) What dimensions of quality should be taken into account in order to ensure higher education quality of faculty of education in Cambodia and what indicators should be included into each dimension of quality?

2) What are important characteristics of the model of IQA indicators that satisfy the needs of faculty of education in Cambodia?

1.3 Research Objectives

1) To construct a model of IQA indicators of faculty of education in Cambodia.
2) To validate the model of IQA indicators of faculty of education in Cambodia.

1.4 Scope of the Study

The purpose of the research study was to develop a model of IQA indicators of faculty of education in Cambodia. The expected dimensions and indicators of quality would correspond to both national and international standards of quality assurance and cover undergraduate and postgraduate levels in both public and private HEIs in Cambodia. However, this research study would never include criteria for interpreting the expected indicators.

The participants of this study included experts of higher education; stakeholders of faculty of education; deans, academic staff, staff, and students of faculty of education in both public and private HEIs; and directors, teachers, and students of regional teacher training centers (RTTCs) in Cambodia in the academic year of 2014-2015.

The variables in this research study included IQA dimensions and indicators of faculty of education in Cambodia.

The validation of the model of IQA indicators of faculty of education in Cambodia was involved with the four standards of evaluation: utility, feasibility, propriety, and accuracy.

1.5 Definition of the Terms

Education quality is a multi-dimensional concept related to content standards (core competencies, relevant knowledge, and skills included into a subject area), educational standards (inputs, processes, and outputs), and performance standards (academic work and student achievement).

Quality assurance refers to the process of monitoring, assessing, enhancing, and maintaining educational quality by a quality assurance body in order that a desired level of standards or criteria of a system or the quality assurance body can be met or fulfilled.

Internal quality assurance refers to the ongoing process of monitoring, assessing, enhancing, and maintaining educational quality by the IQA body of faculty of education in Cambodia so as to see if the intended goals or stated objectives are being achieved.

Indicators refer to a group of interrelated variables or observable values used to reflect or measure the actual condition or characteristic of a component of a general or an education system during the process of monitoring and evaluation in order to compare such an actual condition to a predetermined objective or standard.

Standards are formal statements on expected levels of quality within curriculum, educational activities, and academic work and student achievement that must be attained by HEIs in order for them to be accredited.

Dimensions of quality refer to aspects, features, facets, or criteria of quality that require information from indicators of quality to reflect the actual state of faculty of education in Cambodia because they cannot be directly observed or measured during the IQA process.

Indicators of quality refer to observable variables or information used to indicate or measure the actual condition or characteristic of each component of an education system during the IQA process of faculty of education in Cambodia.

Faculty of education refers to any institution, faculty, college, center, or school in Cambodia that is involved with the production of human resources for the teaching profession.

Higher education institution refers to any institute, college, or school that provides higher education activities based on legally approved study programs at any level for students who graduate from high schools in Cambodia.

1.6 Significance of the Study

This study aimed to develop a model of IQA indicators of faculty of education in Cambodia through exploring both national and international criteria or standards of quality assurance; experts' and stakeholders' views on educational quality of faculty of education in Cambodia; and teachers', staff's, and students' perception about the appropriateness of the constructed IQA indicators for the context of faculty of education in Cambodia. Based on the techniques of data collection as well as the data analysis design, the research study will provide:

1. An alternative model of IQA indicators of faculty of education in Cambodia in order that they are able to implement, monitor, assess, evaluate, enhance, and maintain educational quality of all their educational programs.

2. An awareness of levels of appropriateness or importance of the expected IQA dimensions, sub-dimensions, and indicators of faculty of education in Cambodia so that they can have proper decision-making for maintaining and enhancing educational quality.

3. Appropriate IQA indicators consistent with the ACC's minimum standards for institutional accreditation, the MoEYS's long-term vision, and the regional and global trends in the 21st century.

CHAPTER 2
LITERATURE REVIEW

The literature review was an extremely important part to construct IQA indicators of faculty of education in Cambodia and to develop valid and reliable instruments for this research study. This was able to guarantee that the expected IQA indicators would be suitable for and beneficial to faculty of education in Cambodia. This literature review falls into six parts: 1) education system in Cambodia, 2) higher education, 3) concepts of indicators and indicator construction, 4) quality assurance, 5) relevant research studies, and 6) identification of research conceptual framework.

2.1 Education System in Cambodia

In this part of the literature review, the researcher has studied a specific context of education in Cambodia so that the expected IQA indicators would well reflect the characteristics of faculty of education in Cambodia. This review falls into four parts including 1) education reform, 2) general education, 3) higher education development, and 4) teacher education and stakeholders in Cambodia.

2.1.1 Education Reform in Cambodia

Although Cambodia had an education system since the 12th century, there were no remarkable education reforms until the French colonization in 1863. It is noted that in the early 20th century the French introduced their education system to Cambodia (Dy, 2004). So, from the early 20th century until 1975, Cambodia followed the French education model. During the colonization period, the Cambodian education system was categorized into primary, secondary, and higher education and specialized technical and vocational levels (Seng, 2007).

In the early 1980s, Cambodia still faced political conflict and instability so it was really difficult within the recreation of the education system because of the lack of both human and physical resources caused by Pol Pot regime. In the 1990s, some external assistance from donor agencies and nongovernmental organizations started to exist, so the Government set out a 5-year education investment plan from 1995 to 2000 (Forsberg & Ratcliffe, 2003).

From the early 1980s to 1996, three education reforms were put into practice in Cambodia. These included 1) the 10-year education system in the early 1980s (4-year

primary, 3-year lower secondary, and 3-year upper secondary), 2) the 11-year education system in 1986 (5-year primary, 3-year lower secondary, and 3-year upper secondary), and 3) the 12-year education system in 1996 (6-year primary, 3-year lower secondary, and 3-year upper secondary) (Seng, 2007).

In 2000, the RGC carried out another education reform by using diverse criteria for human resource development in order to compete with both under-developed and developing countries within the region (RGC, 2002). The RGC has been committed to provide equal opportunities to Cambodian children and youth to access education by 2015 through "Education For All" (EFA) (MoEYS, 2005).

With the long-term vision to develop a knowledge-based society in Cambodia, the RGC and the MoEYS have taken into account an in-depth education reform that will respond to the new trends of regionalization and globalization in the 21st century. To ensure this, all aspects of educational provision have been taken into account including the early childhood education, primary education, secondary and technical education, higher education, non-formal education, youth development, and physical education and sport (MoEYS, 2014). Meanwhile, the ACC has been trying hard to help HEIs with the two types of guidelines on quality assurance. However, there has been no quality assurance for general education in Cambodia yet.

2.1.2 General Education in Cambodia

To date, general education system in Cambodia falls into three levels including pre-school, primary, and secondary education. The pre-school education is a three-year optional education for children from the age of 3 to 5 (UNESCO, 2008). This first step of education can be provided within a primary school where pre-school teachers are available. The primary education is a six-year compulsory education for students at the age of 6 to 11 (UNESCO, 2008). The secondary education is divided into two types: lower secondary and upper secondary education. The lower secondary education is a 3-year compulsory education for students at the age of 12 to 14 while the upper secondary education is a 3-year optional education for students at the age of 15 to 17 (UNESCO, 2008). Lower secondary students are required to pass the Grade 9 National Examination in order to move to the upper secondary education or they can have another choice to go for vocational training programs provided by the Ministry of Labor and Vocational Training. After the completion of the upper secondary education, students have to take

the Grade 12 National Examination in order to go for higher education. Students who pass the exam can study for a bachelor degree whereas those who fail in the exam have to take courses at associate levels before moving to bachelor levels.

2.1.3 Higher Education Development in Cambodia

Higher education is developed to provide the country with human resources and updated knowledge utilized for self-dependence, sustainable development, and regional and global competitions. The importance of higher education in Cambodia has been gradually increased since the 1990s.

Cambodia has an interesting history of higher education among others within Southeast Asia and the world. Cambodia became a powerful kingdom, Khmer Empire, in the 12th century. During the period, two higher learning institutions were established in Preah Khan Temple and Taprom Temple and administered by Andradevy, the queen of King Jayavarman VII (1181-1220). During that time, 18 national intellectuals with Doctoral degrees in the fields of culture and religion and 740 teachers were involved with the production of human resources throughout the country and the popular subjects were Khmer basic literature, Buddhism, culture, and social life skills (PSRBU, 2009).

After the decline of the Khmer Empire in the 15th century, those two higher learning institutions were closed on account of wars and political instability within the country. During this period, pagodas became the best place for educating males and transforming knowledge about Buddhism, Khmer basic literature, and social life skills (Dy, 2004). Remarkably, females were not allowed to access education during this period in that the teachers were only Buddhist monks and the students had to stay and work in the pagoda.

From 1863 to 1953, Cambodia was under the French colonization. During the period, the French colonial government wanted to upgrade the education system in Cambodia to a French system (Clayton, 1995). As the result of this attempt, many public schools and the first higher learning institution, National Institute of Juridical, Political, and Economic Science, were established. This institution was intended for students who wanted to work as civil servants in the colonial government (J. A. Tully, 2002). However, the French colonial government was afraid to establish more HEIs and enhance education because this enhancement would become an obstacle to their control over Cambodia

(Clayton, 1995). Hence, the French education system was never provided until the early 20th century (Dy, 2004).

After the French colonization was over in 1953, Prince Norodom Sihanouk tried hard to promote educational policies from general education to higher education in order to develop the country (Dy, 2004). Through the new educational policies and some recommendations from UNESCO, more opportunities to access general education existed throughout the country, even in rural areas. Furthermore, according to Chhum (1973), 15 HEIs were established from 1953 to 1970 including the National Institute for Law, Politics, and Economics and the Royal Medical School (1953); the Buddhist University (1954); the Royal School for Public Administration (1956); the National Institute of Pedagogy (1958); the National School of Commerce, the Faculty of Science and Technology, and the Faculty of Arts and Humanitarian studies (1959); the Royal Khmer University (1960); the University of Technology, the University of Kampong Cham, the University of Takeo-Kampot, the University of Agronomy, and the University of Fine Arts (1965); and the University of Battambang (1967).

From 1970 to 1975, Marshal Lon Nol ruled the country under the support of the United States and South Vietnam (J. Tully, 2005). Marshal Lon Nol ousted Prince Norodom Sihanouk in 1970, ended the monarchy, and formed a new government, the Khmer Republic (Kiernan, 2002). The higher education sector significantly declined those days because most institutions from the previous Government were destroyed or closed due to ideological disputes, cold war, and lack of qualified academic staff and education facilities (Chhum, 1973). Only eight HEIs were left including the Phnom Penh University (renamed from the Royal Khmer University), the Buddhist University, the University of Agronomy, the University of Technology, the University of Fine Arts, the University of Kampong Cham, the University of Battambang, and the University of Takeo-Kampot, which was destroyed by war in 1970 (Chhum, 1973).

From 1975 to 1979, Cambodia felt into a tyrannical regime, ruled by Pol Pot, and a new Government, Democratic Kampuchea, was established. During the period, Pol Pot eliminated the previous education system and set up a new one that aimed to promote their socialism (Clayton, 1998). Under this regime, many people were killed, especially officials, army officers, soldiers, and academic staff from the Government of Khmer Republic (Kiernan, 2002; Tan, 2007).

In 1979, after the collapse of Democratic Kampuchea came the strong support of Vietnam and the Soviet Union, which led to a new government existence, called the People's Republic of Kampuchea (1979-1989) (Clayton, 1999; Dy, 2004). During the period, foreign scholarship opportunities were provided to 2,650 Cambodian students by some universities in Eastern-bloc countries including the Soviet Union, Vietnam, East Germany, Cuba, Bulgaria, Hungary, and Czechoslovakia, and five HEIs were established so as to provide political and technical trainings (Clayton, 1999). These included the Faculty of Medicine, Dentistry, and Pharmacy (1979); the Teachers' Training College (1980); the Khmer-Soviet Friendship Higher Technical Institute (1981); the Economics Institute (1984); and the Agricultural Institute (1985). It is noted that the civil war that was made by the ruling Government, the Democratic Kampuchea, and the other two smaller non-communist parties led by Sihanouk and Son Sann still continued until the Paris Peace Accord was signed in 1991 (Clayton, 1999; Tan, 2007).

Luckily, the higher education system in Cambodia has been recreated since the civil war was over in the 1990s so as to meet the demand of the market and society (Chet, 2006). To date, the RGC and the MoEYS have been actively trying to develop human resources of high knowledge and professional ethics for the new global trend and competition in the 21st century.

All in all, Cambodia started her higher education in the 12th century but there were no stable provisions of higher education until the 1990s because of the civil war, political instability, and tyrannical regime. Since then, the higher education sector in Cambodia has been seriously taken care of and considered the most important place for the production of qualified human resources for the country.

2.1.4 Teacher Education and Stakeholders in Cambodia

Teacher education is conducted through faculty of education in Cambodia which, in this research study, is defined as the faculty, institution, school, or center involved with producing human resources for the teaching career. In fact, teaching is a profession which needs trainings for either a short or long time because it is concerned with the application of knowledge, skills, attributes, and value added that are designed to meet the needs of individuals, institutions, or society via the diversity of teaching methods. However, some teachers at school or college have never been trained as teachers, which may lead to the failure of achieving student learning outcomes. To be more successful

for the teaching profession, all teachers of the 21st century should be equipped with technology, pedagogy, and content knowledge (Harris & Hofer, 2011; P. Mishra & Koehler, 2006), educational measurement and evaluation, research methodology, and other necessary skills for the teaching profession. Hence, faculty of education should make sure that the three mentioned elements are provided to their prospective teachers.

To date, five types of institutions concerned with this type of production are under the administration of the MoEYS in Cambodia. These include 1) the faculty or department of education in HEIs, 2) the National Institute of Education (NIE) in Phnom Penh; 3) the six RTTCs within the six regions of Cambodia, 4) the Provincial Teacher Training Centers (PTTCs) in each province, and 5) the Pre-School Teacher Training Center (PSTTC) in Phnom Penh. These institutions have been producing teachers in different levels and purposes. The faculty or department of education in each HEI is responsible for the production of human resources of the education field of all degree levels. However, if bachelor students from such an HEI want to work in state schools they have to go to the NIE for one more year. The NIE bears responsibility to provide a one-year educational program for graduate students to become upper secondary school teachers. The RTTC provides a 2-year educational program for upper secondary school students to become teachers at lower secondary education levels. The PTTC has its own role to provide a 2-year educational program for upper secondary school students in order to serve as primary school teachers. The PSTTC provides a 2-year educational program for upper secondary school students to become pre-school teachers.

To be successful in maintaining and enhancing educational quality within these institutions, different types of stakeholders should actively collaborate in producing and improving both pre- and in-service teachers. These stakeholders include 1) faculty or department of education, 2) schools or other HEIs, 3) students and their parents, and 4) key communities and society.

1) Faculty or department of education bears first responsibilities to start with educational quality assurance. They should utilize qualified human resources to educate pre-service teachers; monitor, evaluate, and improve all educational activities; and assess work performances and student leaning outcomes. Besides, they should communicate with their stakeholders to update all kinds of information including the needs of and

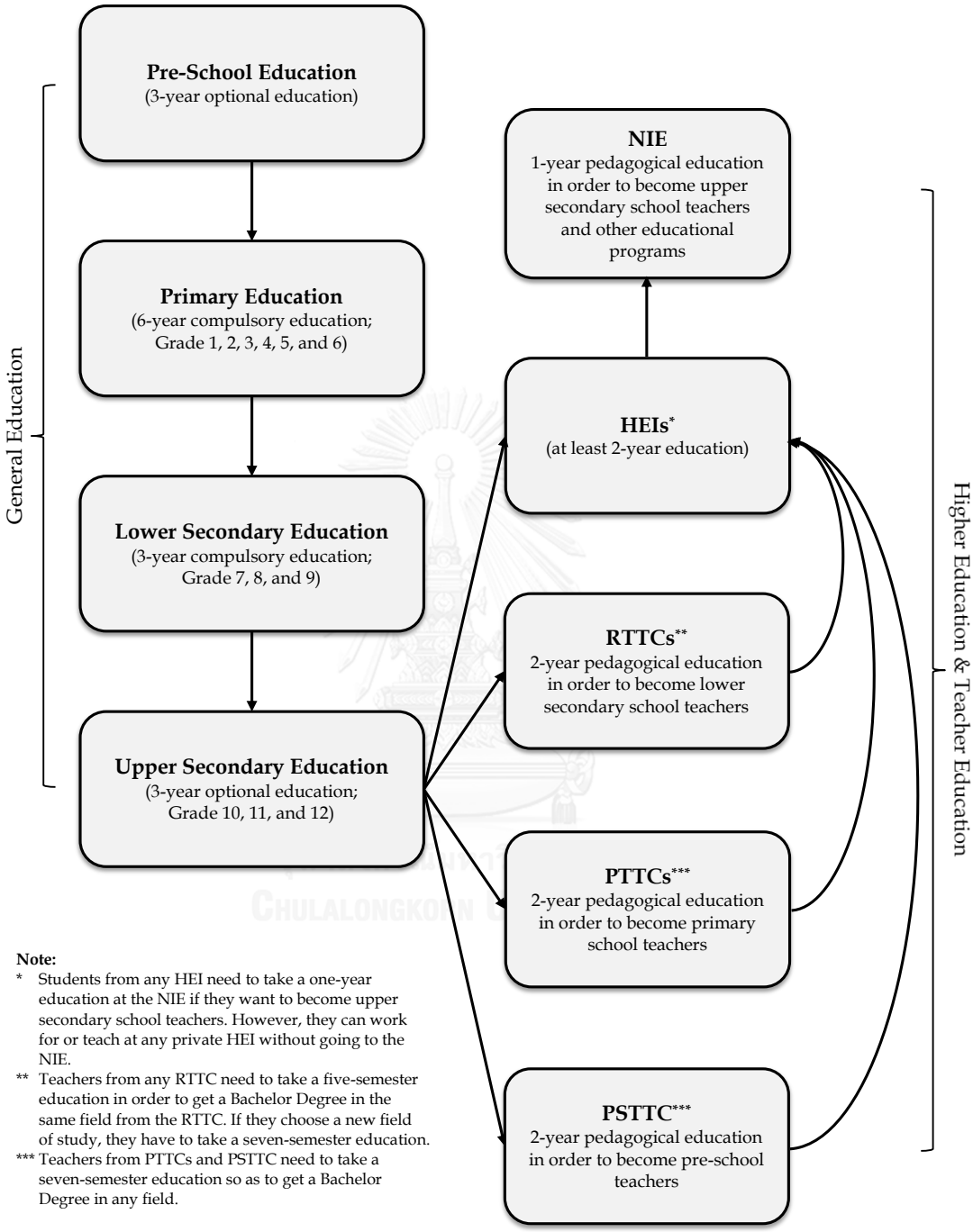
feedback from each HEI or school that employs their graduates, students and their parents, and key communities and society.

2) Schools and HEIs are connected with in-service teachers. Monitoring and assessing these teachers are their responsibilities. They need to determine both strengths and weaknesses of these products and give feedback to the faculty or department of education in order to assure quality for the next production cycle.

3) Students and their parents are treated as stakeholders directly affected from the faculty or department of education. They have rights to criticize and provide some constructive feedback for the faculty so that the production of human resources for the teaching profession can meet their demands. Also, parents have to closely work with the faculty to direct their children into the right habit of learning.

4) Key communities and society are extremely significant for community or social change or development. Collaborating with the faculty is imperative in order to reflect what has been produced by the faculty and give feedback for improvement. Key communities and society can also communicate with the faculty to identify social or community needs so as to serve the demand of the country.

Figure 2.1: Education system in Cambodia



Note:

* Students from any HEI need to take a one-year education at the NIE if they want to become upper secondary school teachers. However, they can work for or teach at any private HEI without going to the NIE.

** Teachers from any RTTC need to take a five-semester education in order to get a Bachelor Degree in the same field from the RTTC. If they choose a new field of study, they have to take a seven-semester education.

*** Teachers from PTTCs and PSTTC need to take a seven-semester education so as to get a Bachelor Degree in any field.

2.2 Higher Education

This part of the literature review was the most important step to determine current dimensions and indicators of higher education quality from national and international standards so that they would be included into the model of IQA indicators of faculty of education in Cambodia. So, the researcher has explored important concepts of higher education and guidelines on quality assurance. This review falls into two parts: 1) roles and importance of higher education and 2) dimensions of quality in higher education.

2.2.1 Roles and Importance of Higher Education

Higher education provides qualified human resources of different fields that are needed to tackle all kinds of challenges and constraints within all parts of the country for a sustainable development to survive in a more competitive world. The production of human resources of high quality increases only if HEIs performs appropriate roles and responsibilities.

The responsibilities of higher education include 1) making students ready for the careers of teaching and research, 2) offering academic and training courses responsive to the needs of key communities, 3) accepting students of different background in order to provide the widest sense of many aspects of lifelong education, and 4) promoting international cooperation (UNESCO, 1996).

According to Cortese (2003), the responsibilities of higher education in creating a sustainable future are 1) to generate new theories, concepts, or ideas; 2) to comment on society and its challenges; and 3) to engage in the experimentation for sustainable living. Similarly, a great university should bear three important responsibilities including 1) providing best education to the students, 2) conducting research and development and disseminating knowledge; and 3) participating in community or social activities (Levin, Jeong, & Ou, 2006).

Another author, S. Mishra (2007), stresses that higher education should play the most important role in equipping the country with qualified human resources of urgent fields, economic growth, scientific and technological advancement, and opportunities for lifelong learning.

It is seen that higher education has been acting as a catalyst for social progress, economic growth, and sustainable development within a country. It can lead to higher earnings and lower unemployment (Card, 1999); lower crime, better health, and greater

civic participation (Lochner, 2011); and greater job satisfaction, a sense of achievement, and working in higher status jobs (Oreopoulos & Salvanes, 2011).

2.2.2 Dimensions of Quality in Higher Education

Quality enhancement has become a radical challenge in the education field these days. Many organizations, institutions, and even business companies have been trying to create or adopt many concepts of dimensions and indicators of quality that they can use as a guideline towards national, regional, and global accreditation.

2.2.2.1 Concepts of Dimensions of Quality in Higher Education

Higher education quality is achieved by an institutional culture of total quality care, not total quality management (Barnett, 1992). Barnett stresses four factors which directly affect higher education quality including 1) teaching and learning, 2) student assessment, 3) staff development, and 4) educational programs and other four factors that have indirect relationship to educational quality including 1) academic development plan; 2) research; 3) recruitment, administrations, and counselling processes; and 4) career prospects.

Owlia and Aspinwall (1996) suggest a conceptual framework consisting of six dimensions of quality in higher education. These include 1) tangibles (e.g. modern and sufficient facilities, support services, and interesting learning environment), 2) content (e.g. relevant curriculum, effectiveness, primary knowledge, communication skills and team work, flexibility of knowledge, and use of information technology), 3) competence (e.g. sufficient staff, theoretical and practical knowledge, qualifications, interpersonal skills, and teaching experience), 4) attitude (e.g. understanding the needs of students, counselling services, and emotional support for students), 5) delivery (e.g. effective presentation, timeliness, fair examinations, feedbacks from students, and encouraging students), and 6) reliability (e.g. trustworthiness, giving valid award, keeping promise, matching the stated goals, and dealing with complaints and other problems).

Similarly, article 11 of the UNESCO's world declaration on higher education for the 21st century states that each HEI should cater for the multi-faceted concepts of dimensions of quality including 1) teaching and curriculum, 2) research and scholarship, 3) academic staff, 4) students, 5) infrastructure, and 6) academic environment (UNESCO, 1998).

To meet the demand of the 21st century knowledge and skills, the American Association of Colleges of Teacher Education (AACTE) and the Partnership for the 21st Century Skills recommend five educational support systems in educator preparation including 1) standards, 2) assessments, 3) curriculum and instruction, 4) professional development, and 5) learning environment (AACTE, 2010).

In current practice, Many HEIs have taken into account three main factors so as to make their students succeed throughout their college lives including 1) improving orientation, induction, and student support services; 2) enhancing student welfare and learning support; and 3) providing better opportunities for student voice (Morgan & Brown, 2010).

2.2.2.2 Guidelines on Dimensions of Quality in Higher Education

Higher education quality is the most pressing and contemporary issue of the 21st century. Many quality assurance bodies have been trying to develop standards or criteria of both IQA and EQA to maintain, enhance, and assure educational quality of the institution. However, the standards or criteria of six educational quality assurance bodies have been explored in order to identified dimensions and indicators of higher education quality in order that they would be included into the model of IQA indicators of faculty of education in Cambodia. These educational quality assurance bodies were the European Association for Quality Assurance in Higher Education (EAQAHE), the Office of the Higher Education Commissions (OHEC), the Office for National Education Standards and Quality Assessment (ONESQA), the ASEAN University Network (AUN), the ACC, and the Baldrige Performance Excellence Program (BPEP).

The EAQAHE has developed IQA standards for European HEIs so that they can not only achieve the intended goals but also live up to the international standards of quality. The purposes of the standards include 1) improving higher education quality for students in the European Higher Education Area, 2) helping European HEIs with quality management and enhancement and their institutional autonomy, 3) forming a background for the process of quality assurance, and 4) making the process of EQA understandable for those involved. These standards are 1) quality assurance policies and procedures, 2) academic programs, 3) student assessment, 4) academic staff, 5) student support and teaching and learning resources, 6) information system, and 7) public information (EAQAHE, 2009). More information is shown in Table 2.1.

Table 2.1: Internal quality assurance standards of EAQAHE

Standards	Specifications
1. Quality Assurance Policies and Procedures	1) Teaching-research relationship within the institution 2) Institution's strategy for quality and standards 3) Quality assurance system 4) Responsibilities of faculties, departments, schools, and other units and individuals for quality assurance 5) Student involvement in quality assurance 6) Policy on implementation, monitoring, and revision
2. Academic Programs	1) Development of the intended learning outcomes 2) Curriculum and program design and content 3) Specific needs of different modes of program delivery 4) Program approval procedures 5) Monitoring of the progress and achievement of students 6) Regular program reviews 7) Regular feedback from stakeholders 8) Participation of students in quality assurance activities
3. Student Assessment	1) Mechanisms for measurement of students' achievement 2) Diagnostic, formative, and summative assessment 3) Publication of clear marking criteria 4) Adequacy and quality of assessors 5) Clear examination regulations and procedures
4. Academic Staff	1) Full knowledge and understanding 2) Necessary skills and experiences 3) Transparency in staff recruitment and appointment 4) Staff development and promotion policy
5. Student Support and Teaching and Learning Resources	1) Physical support 2) Human support 3) Access to learning resources and other support mechanisms 4) Plan to monitor, review, and improve the effectiveness of the support services
6. Information System	1) Information collection and analysis systems 2) Student progression and success rates 3) Employability of graduates 4) Students' satisfaction with their programs and teaching effeteness 5) Profile of the student population and learning recourses available and their costs 6) Key performance indicators
7. Public Information	1) Up-to-date and accurate information about the programs and awards 2) Publication of intended learning outcomes 3) Teaching, learning, and assessment procedures 4) Learning opportunities for students

Source: European Association for Quality Assurance in Higher Education (2009)

In response to quality assurance in Thai higher education, both IQA and EQA bodies, the OHEC and ONESQA, collaborate with each other to help HEIs provide quality education for students with their own standards of quality. The OHEC has set nine dimensions of quality: 1) vision, mission, goal, and planning; 2) academic programs and services; 3) student services and information system; 4) research and innovation; 5) society support; 6) arts and culture preservation; 7) leadership and governance; 8) financial management; and 9) IQA system (OHEC, B.E. 2553). The ONESQA stresses six dimensions of quality including 1) graduate quality, 2) research and innovation, 3) society support, 4) culture preservation, 5) management and development, and 6) IQA system (ONESQA, B.E. 2554). More information on the dimensions and specifications in the two standards is shown in Table 2.2.

Table 2.2: Dimensions and indicators of quality of OHEC and ONESQA

Dimensions	**Indicators of OHEC**	**Indicators of ONESQA**
1. Vision, Mission, Goal, and Planning	1) Planning process	1) The result of planning consistent with vision, and mission of the institution 2) The result of planning based on the strength
2. Academic Programs and Services	1) Mechanisms for curriculum management and development	
	2) Number of regular lecturers with Doctoral degrees	
	3) Number of regular lecturers with professional position	
	4) Staff and teaching staff development system	1) Teaching staff development
	5) Library, learning supports, and learning environment	
	6) System and mechanisms for learning management	
	7) Mechanisms for achievement development based on national qualifications framework	1) Number of doctoral dissertations published (inter) nationally
	8) Level of accomplishment of good personality for students	
3. Student Services and Information Systems	1) Mechanisms for consulting and information system	
	2) System and mechanisms for student service support	

Table 2.2 (Cont.)

Dimensions	Indicators of OHEC	Indicators of ONESQA
4. Research and Innovation	1) System and mechanisms for development of research and innovation results	
	2) System and mechanisms for knowledge management from research and innovation	1) Number of researches or innovative work published (inter) nationally 2) Number of research useful to institution or society 3) Number of academic outputs certified (inter) nationally
	3) Financial support for research and innovation based on the number of lecturers	
5. Society Support	1) System and mechanisms for academic services for society	1) Result of introducing knowledge and experience from providing academic services to teaching and learning and research
	2) Process of academic services for society support	1) Result of learning and strengthening external community or organization 2) Result of suggesting or solving problems in different parts of society
6. Arts and Culture Preservation	1) System and mechanisms for arts and culture preservation	1) Arts and culture promotion and support 2) Development of aesthetics in the dimensions of culture
7. Leadership and Governance	1) Leadership of the governing board members and all managers	1) Roles and duties of the institutional council 2) Roles and duties of the institutional administrators
	2) Institutional development for institutions for learning	
	3) Information system for management and decision making	
	4) Risk management system	
8. Financial and budget Management	1) Monetary and budget management system	
9. IQA System	1) System and mechanisms for IQA	1) Result of internal quality assessment by higher bodies

Sources: Office of the Higher Education Commissions (B.E. 2553) and
Office for National Education Standards and Quality Assessment (B.E. 2554)

To serve similar purposes of quality enhancement, the AUN has revealed the revised AUN quality assurance model for a program level in higher education. This consists of 15 criteria of quality including 1) intended learning outcomes, 2) program specification, 3) program structure and content, 4) teaching and learning strategy, 5) academic staff, 6) support staff, 7) students, 8) student advice and support services, 9) student assessment, 10) quality assurance of teaching and learning process, 11) staff development, 12) physical facilities and infrastructures, 13) stakeholders feedback, 14) output, and 15) stakeholder satisfaction (AUN, 2011). More information on each criteria and specifications is shown in Table 2.3.

Table 2.3: Criteria of quality assurance model for program levels of AUN

Criteria	**Specifications**
1. Intended Learning Outcomes	1) Clarity of intended learning outcomes 2) General and specific knowledge and skills coverage 3) Relevance to stakeholders' needs
2. Program Specification	1) Development and implementation of program specification 2) Clarity of program specification 3) Dissemination of program specification
3. Program Structure and Content	1) Clarity of program structure 2) Balance between general and specific knowledge and skills 3) Relevance to the institution's vision and mission 4) Contribution based on intended learning outcomes 5) Update on program structure and content
4. Teaching and Learning Strategy	1) Clarity of teaching and learning strategy 2) Research-based teaching and learning 3) Good learning environment 4) Learning opportunities for improvement
5. Academic Staff	1) Adequacy and competency of academic staff 2) Transparency in academic staff recruitment and promotion 3) Academic staff's roles, responsibilities, and workload 4) System and mechanisms of academic staff evaluation 5) Training needs and plan 6) Policy on termination, re-employment, and retirement
6. Support Staff	1) Adequacy and competency of support staff in libraries, laboratories, computer labs, and student services office 2) Training needs and plan 3) Policy on termination, re-employment, and retirement
7. Students	1) Student admission policy 2) Adequate student admission process 3) Student workload

Table 2.3 (Cont.)

Criteria	Specifications
	4) Credit system policy 5) Participation in academic and non-academic activities
8. Student Advice and Support	1) System and mechanisms for monitoring students' progress 2) Academic advice, support, and feedback 3) Evaluation on academic advice, support, and feedback
9. Student Assessment	1) System and mechanisms for student assessment 2) Relevance to intended learning outcomes and content 3) Dissemination of assessment methods and criteria
10. Quality Assurance of Teaching and Learning Process	1) Curriculum design, review, and approval process and minutes 2) Stakeholder-based curriculum development 3) System and mechanisms for teaching and learning assessment 4) Evaluation on teaching and learning from stakeholders
11. Staff Development	1) Policy and plan on the needs for training and development for all staff members 2) Relevance to staff's needs
12. Physical Facilities and Infrastructure	1) Adequacy of lecture facilities 2) Adequate and up-to-date libraries, laboratories, listening labs, and computer labs 3) Policy on health, safety, and environment 4) Maintenance plan 5) Evaluation on physical facilities and infrastructure from stakeholders
13. Stakeholder Feedback	1) System and mechanisms for stakeholders feedback
14. Output	1) Graduate and employment statistics 2) Research outputs 3) Employer feedback
15. Stakeholder Satisfaction	1) System and mechanism for measuring stakeholders satisfaction

Source: ASEAN University Network (2011)

In response to quality assurance in higher education in Cambodia, the ACC has established nine minimum standards for institutional accreditation including 1) mission; 2) governing structure, management, and planning; 3) educational programs; 4) quality of academic staff; 5) students and student services; 6) learning services; 7) physical facilities; 8) financial plan and management; and 9) information dissemination (ACC, 2011a). More information about the minimum standards and corresponding indicators is shown in Table 2.4.

Table 2.4: Dimensions and indicators of quality of ACC

Dimensions	Indicators
1. Mission	1) Clarity of mission of HEIs 2) Mission review, analysis, and revision 3) Dissemination of the mission and the results of the mission review, analysis, and revision to stakeholders
2. Governing Structure, Management, and Planning	1) Transparency in selection and nomination of all members 2) Role and duties of governance board members 3) Management structure and administrative system 4) Staffing and resource allocation 5) Planning and evaluation
3. Educational Programs	1) Transparency in selection and nomination of the committee of curriculum development 2) Regulation and role and duties of the members of the committee of curriculum development 3) Contents and organization of curriculum 4) Credit system and credit transfer 5) Teaching and learning effectiveness 6) Student's learning assessment 7) Research and innovation 8) Internal quality assurance system 9) Efficient filing management and maintenance system 10) Curriculum development and review
4. Academic Staff	1) Role and duties and responsibilities 2) Qualification and experiences 3) Terms and conditions of employment and promotion policy 4) Academic freedom and capacity development 5) Adequacy of academic staff
5. Students and Student Services	1) Students' admission requirements 2) Necessary requirements for each degree level program 3) Tuition fee policies 4) Scholarship awarding 5) Institutional services for students 6) Participation in community services
6. Learning Services	1) Adequacy of learning resources with quality and modernity 2) Library administration and services 3) Financial support 4) Supporting resources for teaching, learning, and research 5) Computers and internet services
7. Physical Facilities	1) Planning, management, and maintenance of facilities 2) Adequacy of facilities 3) Health, safety, and security issues

Table 2.4 (Cont.)

Dimensions	Indicators
8. Financial Plan and Management	1) Adequacy of financial resource 2) Financial planning, budgeting, and auditing 3) Effective use of finance 4) Financial reports
9. Information Dissemination	1) Mission and students' expectations 2) Governing structures and administration 3) Tuition fees and other services 4) Scholarship awarding 5) Managerial decision 6) Conditions and number of students admitted into each faculty and specialization 7) Principles of academic requirements for various programs 8) Curriculum, policies, and other institutional regulations 9) Annual reports 10) Documents related to academic programs and the contribution of HEIs to develop in Cambodia 11) Accreditation results 12) Strategic plan on the development of higher education institutions so as to improve quality

Source: Accreditation Committee of Cambodia (2011a)

Similar to the previously-mentioned educational quality assurance bodies, the BPEP has established and applied education criteria for performance excellence in order that business schools, colleges, and universities can reach stated goals, improve results, and become more competitive. Moreover, this quality assurance body plays three vital roles in strengthening the competitiveness of the United States including 1) improving performance practices, capabilities, and results of U.S. organizations; 2) communicating and sharing best practices among U.S. organizations; and 3) serving as an effective instrument for the organization to understand and manage their performance, guide their strategic plan, and learn more about their organization. The BPEP's criteria of quality include 1) leadership; 2) strategic planning; 3) customer focus; 4) measurement, analysis, and knowledge management; 5) workforce focus; 6) operations focus; and 7) results (BPEP, 2013). More information about the criteria and their characteristics is shown in Table 2.5.

Table 2.5: Dimensions and indicators of quality of BPEP

Dimensions	Indicators
1. Leadership	1) vision, values, and mission 2) communication and organizational performance 3) organizational governance 4) legal and ethical behavior 5) societal responsibilities and support for key communities
2. Strategic Planning	1) strategy development process 2) strategic objective 3) action plan development and deployment 4) performance projections
3. Customer Focus	1) listening to students and other customers 2) determination of student and other customer satisfaction and engagement 3) program and service offerings and customer support 4) building relationships with students and other customers
4. Measurement, Analysis, and Knowledge Management	1) performance measurement 2) performance analysis and review 3) performance improvement 4) organizational knowledge 5) data, information, and information technology
5. Workforce Focus	1) workforce capability and capacity 2) workforce climate 3) workforce performance 4) assessment of workforce engagement 5) workforce and leader development
6. Operations Focus	1) program, service, and process design 2) process management 3) cost control 4) supply-chain management 5) safety and emergency preparedness 6) innovation management
7. Results	1) student learning and student-focused process results 2) work process effectiveness results 3) supply-chain management results 4) student- and other customer-focused results 5) workforce results 6) leadership, governance, and societal responsibility results 7) budgetary, financial, and market results

Source: Baldrige Performance Excellence Program (2013)

In conclusion, most of the dimensions of quality of the above six educational quality assurance bodies are consistent with each other. These include 1) leadership and good governance; 2) mission, strategic planning, and finance; 3) educational programs and services; 4) workforce focus; and 5) customers and support services. However, their specifications or characteristics seem to be a little different. The BPEP, the EAQAHE, the AUN, the OHEC, and the ACC focus on the input, process, and output while the ONESQA pays much more attention to the output, outcome, and impact of a system. Table 2.6 will present the synthesis of dimensions and specifications of quality of higher education from the six educational quality assurance bodies.

Table 2.6: Dimensions and specifications of higher education quality

Dimensions/ Sub-Dimensions	**Specifications**	**BPEP**	**EAQAHE**	**AUN**	**OHEC**	**ONESQA**	**ACC**
Dimension 1: Leadership and Good Governance							
1.1 Senior Leadership	1) Vision and values setting and deployment to workforce, students, and other key customers	✓			✓		
	2) Actions and commitment to legal and ethical behavior	✓			✓		
	3) A culture of creating a sustainable organization	✓			✓		
	4) Communication and engagement with the entire workforce, students, and other key customers	✓			✓		
	5) Creation of a focus on action	✓			✓		
1.2 Governance and Societal Responsibilities	1) Transparency in selection and legal nomination of governance board members, and disclosure policies	✓					✓
	2) Clear overall governing structure and separated structures in each faculty	✓					✓
	3) Regulation and role and duties for governance board members	✓					✓
	4) Accountability for the management's actions	✓					
	5) Fiscal accountability	✓					
	6) Independence and effectiveness of internal and external audits	✓					

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
	7) Risk management	✓			✓		
	8) Ethical behavior in all interactions	✓			✓		
	9) Societal well-being	✓					
	10) Active support for communities and society	✓					✓
	11) Dissemination of governance structures	✓					✓
	12) Evaluation of governance board members' performance	✓			✓		
Dimension 2: Mission, Strategic Planning, and Finance							
2.1 Mission	1) Clear mission (proper procedure, protection of interests and development of the country, research-based decision making, and consistency with the resources of the institution)						✓
	2) Mission review, analysis, and revision based on research results						✓
	3) Regular measurement for the levels of accomplishment of the mission	✓					✓
	4) Dissemination of mission and the result of mission review, analysis, and revision to stakeholders						✓
2.2 Strategy Development	1) Strategic planning process	✓			✓		
	2) Strategy considerations	✓			✓		
	3) Work systems and core competencies	✓			✓		
	4) Key strategic objectives	✓			✓		
	5) Strategic objective considerations	✓			✓		
2.3 Strategy Implementation	1) Action plan development	✓					
	2) Action plan implementation	✓			✓		
	3) Resource allocation	✓			✓		✓
	4) Workforce plans	✓					
	5) Performance measures	✓			✓		
	6) Action plan modification	✓			✓		
	7) Performance projections	✓					
	8) Dissemination of strategic plan to stakeholders						✓

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
2.4 Finance	1) Long-term financial planning consistent with the mission of the institution	✓			✓		✓
	2) Adequate monetary reserves in a bank to ensure sustainability of programs provided				✓		✓
	3) Annual budget planning with clear financial management policies	✓			✓		✓
	4) On-going plans for ensuring internal quality improvement	✓			✓		✓
	5) Regular internal and external audits on the use of finance and financial reports	✓			✓		✓
Dimension 3: Educational Programs							
3.1 Curriculum Design	1) Transparency in selection and nomination of the committee of curriculum development				✓		✓
	2) Regulation and role and duties of the members of the committee of curriculum development				✓		✓
	3) System and mechanisms for the request of new curriculum and the adjustment of the existing ones		✓	✓	✓		
	4) Consistency with national policies, the needs of society, the mission of the institution, and society-based research		✓	✓	✓		✓
	5) Proper subjects/courses in the program provided in each faculty (syllabus, objectives, contents and references, number of credits, student assessment and teaching method, and grading system)	✓	✓	✓	✓		✓
	6) Credit system and credit transfer policies			✓			✓
	7) Curriculum development and review based on the demand of society	✓	✓	✓	✓		✓
3.2 Teaching and Learning Effectiveness	1) Teaching procedures and methods based on student learning outcomes		✓	✓	✓		✓
	2) Value added and motivation for good teaching and learning	✓					✓

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
	3) Other educational services supporting effective teaching-learning process (library, laboratory, textbooks, references, equipment, facilities, the Internet, research center, and financial support)	✓	✓	✓	✓		✓
	4) Good learning environments			✓	✓		✓
	5) Dissemination of curriculum to stakeholders	✓		✓	✓		✓
	6) Dissemination of syllabus, objectives, expected learning outcomes, teaching and learning assessment procedures of each subject/course	✓	✓	✓			✓
	7) Sufficient time for each subject/course						✓
	8) Effective mechanisms for absenteeism						✓
	9) Presentation from subject matter experts	✓			✓		
	10) Research-based teaching and learning		✓	✓	✓		
	11) Evaluation on students' satisfaction on each subject		✓	✓	✓		
	12) Survey with job providers on the characteristics needed for prospective employees	✓			✓		
3.3 Assessment of Student Achievement	1) Effective mechanisms for student assessment based on learning outcomes	✓	✓	✓	✓		✓
	2) Dissemination of the mechanisms for student assessment at the beginning of the course		✓	✓			✓
	3) Appropriate time for assessment results						✓
	4) Effective mechanisms for improving student learning outcomes	✓			✓		✓
3.4 Research and Innovation	1) Transparency in selection and nomination of the research committee						✓
	2) Regulation and role and duties of the members of the research committee						✓
	3) Research plans and principles						✓
	4) Previous research results						✓
	5) Effective mechanisms for conducting and improving research and innovation	✓	✓		✓		✓

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
	6) Effective mechanisms for managing knowledge from the research and innovation	✓			✓		
	7) Training on research skills for academic staff				✓		
	8) Dissemination of research plans and previous research results				✓		✓
	9) Financial support for research and innovation	✓			✓		✓
3.5 IQA System	1) Transparency in selection and nomination of the members of IQA body						✓
	2) Regulation and role and duties of the members		✓				✓
	3) System and mechanisms of IQA	✓	✓		✓	✓	
	4) Institution's strategy for quality and standards		✓				
	5) Policy on teaching-research relationship within the institution	✓	✓				
	6) Implementation of IQA	✓	✓		✓	✓	
	7) Policy improvement, monitoring, and revision of IQA system	✓	✓		✓	✓	
	8) Dissemination of the results of IQA and plans for performance improvement				✓		✓
Dimension 4: Workforce Focus							
4.1 Workforce Recruitment	1) Proper and clear procedure in recruiting, hiring, placing, and retaining workforce members	✓	✓	✓			✓
	2) Regulation and role and duties of workforce members	✓		✓			✓
	3) Sufficient workforce members with appropriate degrees in place	✓		✓			✓
	4) Full knowledge and understanding		✓	✓	✓		
	5) Necessary skills and experiences		✓	✓	✓	✓	
	6) Communication skills in teaching		✓	✓	✓	✓	
4.2 Workforce Environment	1) Assessing workforce capability and capacity needs (skills, competencies, and certifications)	✓		✓	✓		✓

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
	2) Organizing and managing workforce to achieve the stated goals	✓			✓	✓	✓
	3) Preparing workforce for changing capability and capacity needs	✓	✓	✓	✓	✓	
	4) Workplace environment to improve workforce health and security and workplace accessibility	✓			✓	✓	✓
	5) Workforce support through services, benefits, and policies	✓	✓	✓	✓		✓
4.3 Workforce Engagement	1) Determination of key elements of engagement affecting workforce engagement for different workforce groups	✓					
	2) Organizational culture of open communication, high-performance work, and an engaged workforce member	✓					
	3) Performance management system supporting higher performance and workforce engagement	✓			✓		
	4) Assessment of workforce engagement through both formal and informal methods and measures	✓		✓	✓		
	5) Correlation between the findings from the assessment and key organizational results	✓			✓		
Dimension 5: Customers and Support Services							
5.1 Student Admission Requirements	1) Requirements and policies in response to the mission, goals, educational programs, and resources of the institution			✓			✓
	2) Proper criteria for student enrollment in each level (Bachelor's, Master's, or Doctoral degree)			✓			✓
	3) Dissemination of the requirements, policies, and criteria for student enrollment in each program within each level			✓			✓

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
5.2 Tuition Fee	1) Clear tuition fee policies						✓
	2) Clear policies for fee refund in case of bankruptcy or failure to fulfill the stated number of credits						✓
	3) Dissemination of tuition fees						✓
5.3 Scholarship	1) Transparency in scholarship awarding						✓
	2) Dissemination of scholarship awarding						✓
	3) Dissemination of scholarship grantees						✓
5.4 Student Services and Information Systems	1) System and mechanisms on student services				✓		
	2) Policies on students' rights and responsibilities		✓				✓
	3) Counselling services for academic performance	✓	✓	✓	✓		✓
	4) Accommodation, canteens, and first aid	✓	✓	✓	✓		✓
	5) Sufficient bookstores		✓	✓			✓
	6) Opportunity in student association, alumni, and community services	✓		✓	✓		✓
	7) Information systems for students and alumni		✓		✓		✓
	8) Evaluation on student services delivery for development if needed			✓	✓		
5.5 Voice of the Customer	1) Listening to, interacting with, and observing current students and other customers to obtain actionable information	✓		✓			
	2) Listening to former, potential, and competitors' students and other customers for actionable information and feedback on the quality of educational programs and services	✓		✓			
	3) Determination of student and other customer satisfaction, engagement, and dissatisfaction	✓					
	4) Students' and other customers' satisfaction with the competitors	✓					

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
5.6 Customer Engagement	1) Determination of student, other customer, and market requirements for educational program and service offerings	✓			✓		✓
	2) Help for students and other customers with seeking information and support	✓			✓		✓
	3) Use of information from stakeholders to identify current and anticipate future student and other customer groups and market segments	✓					
	4) Building and managing relationship with students and other customers	✓					
	5) Managing students' and other customers' complaints to recover confidence and enhance satisfaction and engagement	✓					
5.7 Social Support	1) System and mechanisms for social support				✓		
	2) Survey on the real needs of community				✓		
	3) Evaluation on the social support				✓		
5.8 Arts and Culture Preservation	1) System and mechanisms for culture support				✓		
	2) Culture dissemination to public				✓		
	3) Evaluation on the culture support				✓		
Dimension 6: Operations Focus							
6.1 Work Process	1) Designing educational programs and services and work process to meet all key requirements	✓					
	2) Determination of key educational program and service requirements and key work process requirements	✓					
	3) Implementing, monitoring, measuring, and improving day-to-day operation of work process to meet requirements	✓					
	4) Determination of key support processes	✓					
	5) Program, services, and process improvement to increase student learning and improve educational programs and services and performance	✓					

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
6.2 Operational Effectiveness	1) Controlling the overall cost of work process	✓					
	2) Selecting and positioning qualified suppliers to enhance performance and students' and other customers' satisfaction, measuring suppliers' performance, and providing feedback to suppliers	✓					
	3) Providing a safe operating environment and preparing a system for disasters and emergencies	✓					
	4) Innovation management	✓					
Dimension 7: Physical Facilities							
7.1 Physical Facilities and Equipment	1) Sufficient buildings, classrooms, meeting rooms, offices, restrooms, parking lot, and others for sport and other activities		✓	✓			✓
	2) Sufficient telecommunication facilities			✓			✓
	3) Safety- and secure-based building structures			✓			✓
7.2 Management and Maintenance	1) Development and review of the management plan of physical facilities		✓	✓			✓
	2) Regular inventory controls						✓
	3) Plan for land, building, and other physical infrastructures for future expansion		✓	✓			✓
Dimension 8: Results							
8.1 Students and other Customers	1) Current indicators of student learning outcomes, graduation, and employment	✓		✓	✓	✓	
	2) Current indicators of student and other customer satisfaction and dissatisfaction	✓			✓		
	3) Current indicators of graduate's theses or dissertations published or disseminated nationally or globally				✓	✓	
	4) Current indicators of student and other customer engagement	✓		✓	✓		
	5) Current indicators of social support				✓	✓	
	6) Current indicators of arts and culture preservation				✓	✓	

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
	7) Current indicators of the development of aesthetics in the dimension of culture				✓	✓	
	8) Current indicators of using knowledge and experiences from the social support in teaching-learning and research improvement				✓	✓	
8.2 Research and Innovation	1) Current indicators of published or disseminated research or innovation			✓	✓	✓	
	2) Current indicators of the use of research or innovatory outputs towards the community				✓	✓	
	3) Current indicators of professional outputs of academic staff				✓	✓	
8.3 Staff Members	1) Current levels and trends in key measures of staff capability and capacity	✓					
	2) Current levels and trends in key measures or indicators of staff climate	✓					
	3) Current levels and trends in key measures or indicators of staff engagement and satisfaction	✓					
	4) Current levels and trends in key measures or indicators of staff and leader development	✓					
8.4 Senior Leadership and Governance	1) Current results for key indicators of senior leaders' communication and engagement with the staff, students, and other customers to deploy the vision and values, encourage two-way communication, and create a focus on action	✓				✓	
	2) Key current findings and trends in key measures/indicators of governance and internal and external fiscal accountability	✓				✓	✓
	3) Current results for key measures or indicators of meeting and surpassing regulatory, legal, and accreditation requirements	✓					

Table 2.6 (Cont.)

Dimensions/ Sub-Dimensions	Specifications	BPEP	EAQAHE	AUN	OHEC	ONESQA	ACC
	4) Current results for key measures or indicators of ethical behavior and of stakeholder trust in senior leaders and governance	✓				✓	
	5) Current results for key measures or indicators of the fulfillment of societal responsibilities and support for key communities and society	✓					
	6) Current results for key measures or indicators of the achievement of the organizational strategic plans and action plans	✓				✓	
8.5 Budget, Finance, and Market	1) Current level and trends in key measures or indicators of budgetary and financial performance	✓			✓		
	2) Current levels and trends in key measures or indicators of market performance within the institution (market share, market share growth, and market entered)	✓					

Sources: Baldrige Performance Excellence Program (2013),
European Association for Quality Assurance in Higher Education (2009),
ASEAN University Network (2011),
Office of the Higher Education Commissions (B.E. 2553),
Office for National Education Standards and Quality Assessment (B.E. 2554), and
Accreditation Committee of Cambodia (2011a)

2.3 Concepts of Indicators and Indicator Construction

In this part of the literature review, the researcher has explored some important concepts of quality and effective approaches to indicator construction and validation. This review focuses on five parts including 1) definition of indicators, 2) classification of indicators, 3) uses of indicators, 4) characteristics of effective indicators, 5) approaches to indicator construction, and 6) validation of indicators.

2.3.1 Definition of Indicators

There is no single definition of an indicator among policymakers, administrators, planners, academics, and researchers. They have provided different definitions based on their purposes and experiences. Below are some definitions of the word.

The American dictionary defines an indicator as ‘an instrument used to monitor the operation or condition of an engine, furnace, electrical network, reservoir, or other physical system’ (Pickett, 2006). The Oxford dictionary defines the word as ‘a sign that shows you what something is like or how a situation is changing’ (Hornby, 2000). These definitions seem to be a little different but both reflect the condition of something being monitored or measured in a system.

Johnstone (1981) describes an indicator as a group of related variables selected to indicate the observable or measurable condition or characteristics of each component of a general or an education system.

Another definition is that an indicator is statistical information used to indicate the actual state or condition of each component, monitor or measure its progress level, and improve its achievement level so as to help with proper decision-making within a system (AIHW, 2008; UNAIDS, 2010). Similarly, Kanjanawasee (B.E. 2554) defines an indicator as a group of variables or observable value used to indicate or measure the actual state or condition of the input, process, and output of a system.

In summary, an indicator refers to a group of interrelated variables or observable values used to reflect or measure the actual condition or characteristics of a component of a general or an education system during the process of monitoring and evaluation so as to compare such actual condition to a predetermined objective or standard.

2.3.2 Classification of Indicators

Indicators can be classified based on how they are constructed and what they are used for. However, which method should be used depends on the developer. According to Johnstone (1981), indicators are classified based on three approaches: 1) input variable selection for indicator construction, 2) indicator interpretation, and 3) education system monitoring and evaluation.

1) Three kinds of indicators are categorized based on input variables selected to construct an indicator including representative, disaggregative, and composite indicators. The representative indicator refers to a single variable selected to represent a concept of

a system; the disaggregative indicator, many variables gathered and redefined to reflect a system; and the composite indicator, many theoretically-interrelated variables combined to represent a single value for an education system. In practice, the composite indicator is more suitable and accurate for a complex system, especially an education system, than the other two because they are developed depending on a theoretical framework and empirical data. Selecting only one variable or collecting and redefining many variables to represent or reflect such a complex system is difficult and time consuming and may lead to errors or biases because of personal judgment.

2) How indicator values are interpreted determines three main categories of indicators: criterion-referenced, norm-referenced, and self-referenced indicators. The criterion-referenced indicator refers to any indicator that is developed to compare the actual condition of each component of a system with a specified criterion in that system; the norm-referenced indicator, to compare the actual condition of each component of a system with that of the same component of another system at the same time period; and the self-referenced indicator, to compare the condition of each component of a system with that of the same component of that system at the different time period. In practice, the criterion-referenced indicator is suitable for an evaluation on plan implementation; the norm-referenced indicator, for cross-cultural and cross-national researches; and the self-referenced indicator, for monitoring of education system development.

3) During the monitoring and evaluation process of an education system, three kinds of indicators are grouped including input, process, and output indicators. The input indicator refers to an indicator constructed to monitor if sufficient input resources of an education system have been assembled and channeled into proper educational activities; the process indicator, to monitor how the educational activities are conducted to produce satisfactory results; and the output indicator, to evaluate the results in order to see if the predetermined objectives or standards of the education system are being achieved.

2.3.3 Uses of Indicators

Johnstone (1981) assures that indicators can be constructed and used in the same ways and for the same purposes in a general or an education system. In the education sector, indicators can be used 1) to set the policy of an education system, 2) to monitor the education system, 3) to offer some comments on the level of achievement of the

intended goals of the education system, 4) to reflect the characteristics of the education system in research, and 5) to classify the education system.

1) It is really important to set the policy of an education system to reflect the intended goals or objectives. These goals or objectives must be specific, measurable, or observable. Without using an indicator, the policy is usually stated in general terms, which is difficult for real implementation. Hence, the institution has to construct and use effective indicators while setting the policy to determine specific characteristics to be improved or changed within the education system.

2) The input and process of an education system are to be monitored carefully so that the satisfactory output is guaranteed within the institution. So, good indicators are to be developed to monitor the input resources and educational activities in order that the intended goals or objectives can be achieved.

3) The results of an education system are to be assessed to see if the intended goal or objectives are being achieved. When these have not been fully achieved, good indicators can indicate the remaining requirements. Hence, the assessor has to provide some nominative comments on the system being evaluated by using indicators that are neutral to the system from the beginning until the end of the evaluation process.

4) The characteristics of an education system are difficult to be represented by single variables because it is difficult to describe the complicated dimensions of the system. So, researchers need to set possible indicators to reflect such a complex system when conducting research studies to develop the education system.

5) Indicators are considered important to assess and classify education systems. In the 21st century, experts have developed many more indicators of educational quality in order to measure, assess, and rank schools, colleges, institutes, and universities both nationally and internationally because effective indicators provide a valid and reliable comparison and ranking of the education systems.

2.3.4 Characteristics of Effective Indicators

Indicators are really useful for monitoring, assessing, and improving quality in a system. They can identify how well the system is functioning. When an indicator is not effective enough to reflect or measure the condition or characteristic of a component of the system, the indicator interpretation might not be accurate and reliable. Hence, it is

necessary that effective indicators be constructed to represent the concept of a system, especially an education system.

Johnstone (1981), Kaiser and Yonezawa (2003), and Kanjanawasee (B.E. 2554) assure that there are some requirements that an indicator should fulfil to make itself an effective one. Basically, effective indicators should 1) reflect or measure the condition or characteristic of something that is measurable or observable, related to the system being measured and the predetermined goal or objectives, and important to the user or stakeholders; 2) offer identical results when repeatedly used under similar conditions and up-to-date information for timely policy setting; and 3) be understandable for the user or stakeholders and feasible for data collection, analysis, and interpretation.

Additionally, effective indicators should offer neutral information to the system being evaluated (Johnstone, 1981; Kanjanawasee, B.E. 2554). In this case, they reflect both strengths and weaknesses or focus on both success and failure of the system. Also, the indicator scale should be sensitive enough to indicate differences or changes of the components being measured (ACOS, 2009; Kanjanawasee, B.E. 2554).

However, Kaiser and Yonezawa (2003) assure that indicators should not be used in isolation because a single indicator cannot well reflect a complex system, especially an education system. Hence, it is imperative that a set of indicators be used to indicate different but interrelated aspects of such a system. But the indicators of the set must not be strongly correlated.

2.3.5 Approaches to Indicator Construction

How an indicator is constructed is a little different among developers. Basically, indicators are constructed based on three main approaches: pragmatic, theoretical, and empirical approaches (Johnstone, 1981). The pragmatic approach is that a number of variables are selected in order to construct an indicator when the developer thinks they are correlated and relevant to the system being measured (Kanjanawasee, B.E. 2545). The theoretical approach is the way that a number of variables are selected to construct an indicator when the developer thinks that they are interrelated in theory or when the developer decides in advance on which variables should be combined. The empirical approach is to construct an indicator via the analysis of empirical data (Kanjanawasee, B.E. 2545). The empirical approach is more accurate and reliable than the other two in

that the decision to select possible variables is made based on statistical analysis, not an individual's judgment.

In response to the construction of an effective indicator, the Advisory Committee on Official Statistics (ACOS) suggests five essential steps: 1) identifying the intended user or stakeholders and purposes of indicators, 2) designing a conceptual framework, 3) selecting and designing indicators, 4) interpreting and reporting indicators, and 5) maintaining and reviewing indicators (ACOS, 2009).

1) First, the developer has to clearly identify who will need and use indicator findings and for what these findings will be used. These two important things enable the developer to limit the scope of indicator construction.

2) Second, the developer has to create a conceptual framework, which is about important theories, concepts, or previous research studies that might be relevant to the expected indicators, in order to ensure effective indicators for the selected topic.

3) Third, the developer has to consult subject matter experts and the intended user or stakeholders about the designed conceptual framework and selection criteria in order to determine possible dimensions and indicators.

4) Fourth, the developer has to involve the intended user or stakeholders in the step of interpreting and reporting indicator findings in order to ensure that the indicator findings and interpretation can serve their needs. Then, the developer has to report the information on the conceptual framework, indicator design and analysis, description of indicators, data sources, comments on each indicator, and modification of indicator findings to the intended user or stakeholders for timely decision-making.

5) Finally, it is very important for the developer to conduct a periodic review of the constructed indicators in order to maintain or modify them based on the actual condition of the system. This can be done and achieved through public meetings; focus group discussions; or consultation with subject matter experts, the intended user or stakeholders, and other interested groups.

2.3.6 Validation of Indicators

Besides the indicator examination and selection, there is another important step for the developer. It is the indicator validation, which is involved with making all the examined and selected indicators officially acceptable or approved by evaluating the indicator findings with the intended users or stakeholders.

Evaluation would provide both advantages and disadvantages to the system being evaluated. Therefore, it should be conducted accurately in order that its results may not hamper the progress or performance of that system. To achieve this, the developer should conduct an indicator validation depending on the four standards of evaluation: utility, feasibility, propriety, and accuracy (JCSEE, 1981; Kanjanawasee, B.E. 2554).

2.3.6.1 Utility Standard

The utility standard is intended to guarantee that the evaluation result meets the needs of the intended user or stakeholders of an evaluation. This standard includes seven requirements: evaluator credibility, stakeholder identification, information scope and selection, value identification, report clarity, report timeliness and dissemination, and evaluation impact.

It is imperative that the evaluation be conducted by a team of competent and trustworthy people in the field of evaluation so that the evaluation result is accurate and reliable.

To evaluate a program, the evaluator should clearly identify the intended user or stakeholders of the program being evaluated to assess their different perspectives and needs and gather all information relevant to such needs. Furthermore, the evaluator should clearly identify individual and cultural values relevant to these needs, current laws, and mission and goals of the program so as to support the purposes, processes, and judgments of the evaluation.

The evaluation result should be clearly reported with a full description of the program and its context and the evaluation purposes, procedures, and findings. Then, the evaluation report should be disseminated to the intended user or stakeholders for timely decision-making.

To encourage and support the intended user or stakeholders to use the findings, the evaluator should involve them throughout the evaluation process, show them how to use the findings, conduct feedback workshops on the application of the findings, and provide follow-up assistance in interpreting and applying the findings.

2.3.6.2 Feasibility Standard

The feasibility standard is intended to ensure that the evaluation is performed in a practical, diplomatic, and cost-effective manner. Such a standard focuses on three requirements: practical procedures, political viability, and cost effectiveness.

The evaluator should make the evaluation methods and instruments as easy as possible for the evaluation staff to understand and use and contact individuals of various groups to attain the balance of cultural and political needs and interests. In addition, the evaluation resources should be allocated effectively and efficiently.

2.3.6.3 Propriety Standard

The propriety standard is applied to guarantee that the evaluation is performed in a legal and ethical manner and that those involved in or affected by the evaluation or its results is promoted with great respects and attention. This standard is concerned with eight requirements: formal agreements, conflicts of interest, service orientation, rights of human subjects, human interactions, complete and fair assessment, disclosure of findings, and fiscal responsibility.

The evaluator should negotiate obligations with the user or stakeholders based on their needs, expectations, and cultural contexts and put these negotiated obligations into formal agreements. Also, a conflict of interest should be honestly identified and negotiated early in the evaluation in order that it may not compromise the evaluation processes and results.

Moreover, the evaluator should design the evaluation to meet the needs of the intended user or stakeholders and respect, protect, and maintain their rights and dignity.

It is necessary that the evaluator be fair to reflect actual condition and provide all aspects of information about both strengths and weaknesses and both intended and unintended outcomes of the program being evaluated and that a full description of the evaluation purposes, findings, conclusion, limitations, and recommendations be clearly reported to the user or stakeholders depending on the negotiated obligations. It is really important that the evaluator and evaluation staff be accountable for the allocation and expenditure of the evaluation resources during the evaluation processes.

2.3.6.4 Accuracy Standard

The accuracy standard is applied to guarantee that the evaluation is conducted with appropriate techniques and procedures so as to provide valid findings, conclusions, limitations, and recommendations for the program being evaluated. Such a standard is involved with twelve requirements: program documentation, context analysis, described purposes and procedures, defensible information sources, valid information, reliable

information, analysis of quantitative information, analysis of qualitative information, systematic information, justified conclusions, impartial reporting, and meta-evaluation.

The evaluator should gather enough information from various written sources, especially the technical report on the program operations, in order to clearly describe the program being evaluated and analyze its context based on many different features including the program itself, society, politics, and economics in order to set scope of the evaluation. Additionally, the evaluator should sufficiently and precisely describe the evaluation purposes and procedures early based on various types of the intended user or stakeholders, but the purposes can be modified throughout the evaluation.

To produce a valid and reliable evaluation result, the evaluator should clearly identify data collection methods and instruments and respondents in the evaluation to provide specific information sources. All items or questions in the instrument should be designed based on the needs of the intended user or stakeholders and the data from the respondents should be carefully analyzed and interpreted in order to ensure high validity. The evaluator should identify possible factors that may reduce reliability and each instrument should be tried out or compared with a previous one that can measure similar constructs or behaviors in order that high reliability can be guaranteed.

A specific data analysis design should be clearly developed and employed for either quantitative or qualitative data based on the evaluation instrument. Additionally, all information collected, processed, analyzed, and reported should be systematically reviewed for error detection and correction.

The evaluation conclusion should be clearly justified in accordance with the cultures and contexts of the program being evaluated in order that the intended user or stakeholders can access and use the findings. Besides, the reporting procedures of the evaluation should be free from distortions, misconceptions, and errors that are caused by personal feelings or judgments. More importantly, the program and its evaluation results should be meta-evaluated by another evaluator to see if these results are valid and reliable.

Likewise, Kanjanawasee (B.E. 2554) assures that a quality evaluation should be conducted by a team of qualified evaluators rather than a single one and the evaluators should be independent of the program being evaluated. The evaluation findings should be useful for decision makers in order to improve or develop the program. In addition,

the research-based evaluation may reduce the usefulness of the evaluation result while the evaluation that focuses on the usefulness of the evaluation result may provide the lack of reliability.

In conclusion, designing and examining indicators are really important during the process of indicator construction, but validating them is much more important because they will be contextualized and accepted by the intended user or stakeholders. Hence, a good indicator should pass the four standards of evaluation to reflect 1) the needs of the intended user or stakeholders; 2) practicality and frugality; 3) legality, ethics, and respects to the intended user or stakeholders; and 4) valid and reliable information for the intended user or stakeholders.

2.4 Quality Assurance

Within this part of the literature review, important concepts of quality assurance has been explored in order to ensure that the expected indicators can be used in the IQA process of faculty of education in Cambodia of the 21st century. This required analyzing concepts of educational quality and quality assurance from the national and international contexts. This review falls into four parts: 1) concepts of quality and quality assurance, 2) quality assurance system in higher education, 3) advantages of quality assurance in higher education, and 4) quality assurance in higher education in Cambodia.

2.4.1 Concepts of Quality and Quality Assurance

The concepts of quality and quality assurance were originally created and applied in the 20th century by business and industry companies but now in education and other public services sectors (S. Mishra, 2007). So far, these have been differently seen and defined based on different perspectives of the individual and society (Green, 1994).

2.4.1.1 Quality

The American dictionary defines quality as ‘the high standard of a person or thing’ (Pickett, 2006) while the Oxford dictionary defines the word as ‘the standard of something when it is compared to other things like it or how good or bad something is’ (Hornby, 2000).

According to some literatures, quality can be viewed in seven different notions including 1) uniqueness, 2) excellence, 3) flawlessness, 4) standard fulfilment, 5) fitness for purpose, 6) value for money, and 7) transformation.

1) Traditionally, quality is viewed as *uniqueness*. Something is labeled a quality product when it is distinct or elitist (Green, 1994; Harvey & Knight, 1996) and conveys great prestige or high value to its owner or user (Green, 1994; Sallis, 2002). Quality as uniqueness appears clearly different from others as very few people are able to attain it. According to Pfeffer and Coote, quality of this type is admired and wanted by most people but attained by only few of them (as cited in Sallis, 2002, p. 12). Sallis (2002) assures that this notion of quality is based on the rarity and expensiveness of a product (e.g. the Pyramids and the Rolls Royce). Hence, such a concept is seen in a few elite institutions because most students cannot afford it and most institutions do not aim to provide elite education. However, Pfeffer and Coote argue that such quality is attained via most people's perception of distinctiveness and inaccessibility rather than assessment criteria (as cited in Harvey & Knight, 1996, p. 2). Similarly, Sallis (2002) assures that this notion of quality is perceptual. Church claims that this concept does not fit with the education context in that no dimensions of quality are identified for quality assessment (as cited in Harvey & Knight, 1996, p. 2). Also, Lomas (2002) claims that this concept of quality is much suitable for elite education but it becomes useless once mass education is concerned.

2) Quality is understood as *excellence* (Harvey & Knight, 1996). Something attains quality when it exceeds high standards. It is similar to the uniqueness notion of quality as it is hard to attain for most people. Such a concept of quality focuses on the input and output rather than the process of an education system because it is believed that quality results are produced from only the input of high class or standard although whatever process has been applied. It means best learning outcomes are achieved only when the institution selects best students for each program, hire best academic staff to teach them, and offer facilities of high standard to support their learning, teaching, and research activities. Although the Department of Trade and Industry and Council for Industry and Higher Education prove that the excellence notion of quality is seen in the higher education context in the United Kingdom (as cited in Harvey & Knight, 1996, p. 3), Green (1994) claims that it does not fit well with higher education in general as the criteria used to assess the quality of a few elite HEIs, Oxford or Cambridge university, cannot reflect the quality of other normal institutions.

3) Crosby (1984), Harvey and Knight (1996), and Juran (1999) assure that if a product or service meets a particular specification with no faults it surely attains quality. This notion is known as *flawlessness*. In this sense, the product or service has to be produced or provided perfectly so as to meet the stated specification. To achieve this, Peters and Waterman assure that not only the finished product but also the process of each stage of the production have to be free from faults (as cited in Harvey & Knight, 1996, p. 4). Likewise, there has to be a quality culture for every one of a system so that their work leads towards quality (Harvey & Knight, 1996). The product, in this sense, can have quality if every one of the system functions very well from the beginning till the end of the process. It is not necessary that the finished product be checked to see if quality is achieved because all errors or flaws during the production process have been checked and corrected.

4) Quality is understood as *standard fulfilment*. Something has to be up to the standard set for it by the manufacturing body or institution in order to be labeled as a quality product or service (Green, 1994; Harvey & Knight, 1996; Sallis, 2002). Such a concept of quality can be applied with the higher education context but the problems are that different institutions can set different standards for use and the criteria used to set these standards are not widely negotiated (Green, 1994). The two things may lead to the situation that the quality of the same thing may be defined differently. It means that something found to attain quality within one institution by internal standards may not be acceptable by another. This can be clearly seen that the real problem is the word standard in that it can be defined based on the real situation and understanding of each institution. To solve the problems, the standards of each institution should be updated regularly to reflect new circumstances (Green, 1994) and external standards should be negotiated or established so that all institutions can compare their own quality products or services to them (Harvey & Knight, 1996).

5) Quality is defined as *fitness for purpose*. This means that something is labeled a quality product or service when it fits its stated purposes. Unlike quality as flawlessness, the product or service is assumed not to provide quality if it does not fit its stated purpose although there are no defects in it. The purposes in this case should be 1) fitting customer requirements (Crosby, 1984; Green, 1994; Harvey & Knight, 1996; Juran, 1999; Sallis, 2002), 2) meeting the stated goal or objectives (Green, 1994; Harvey

& Knight, 1996), and 3) gaining customer satisfaction (Harvey & Knight, 1996; Juran, 1999). However, since different stakeholders have different ideas about quality, the purposes of higher education are hard to identify and negotiate (Green, 1994)

6) Quality as *value for money* is another notion of quality that is involved with the institution's accountability for expenditure (Harvey & Knight, 1996). In this sense, efficiency and effectiveness of an institution should be trusted by its funders or stakeholders. The British government used to imply this concept of quality to impose restraints on public expenditure so as to remain competitive in world markets. Rowley (1996) assures that if identical results are produced or achieved with lower expenses, the customer has quality products or services. In higher education, it is imperative that the input resources be utilized efficiently and effectively to meet the institution's goal or objectives (Lomas, 2002). Such a concept of quality is considered important by the government.

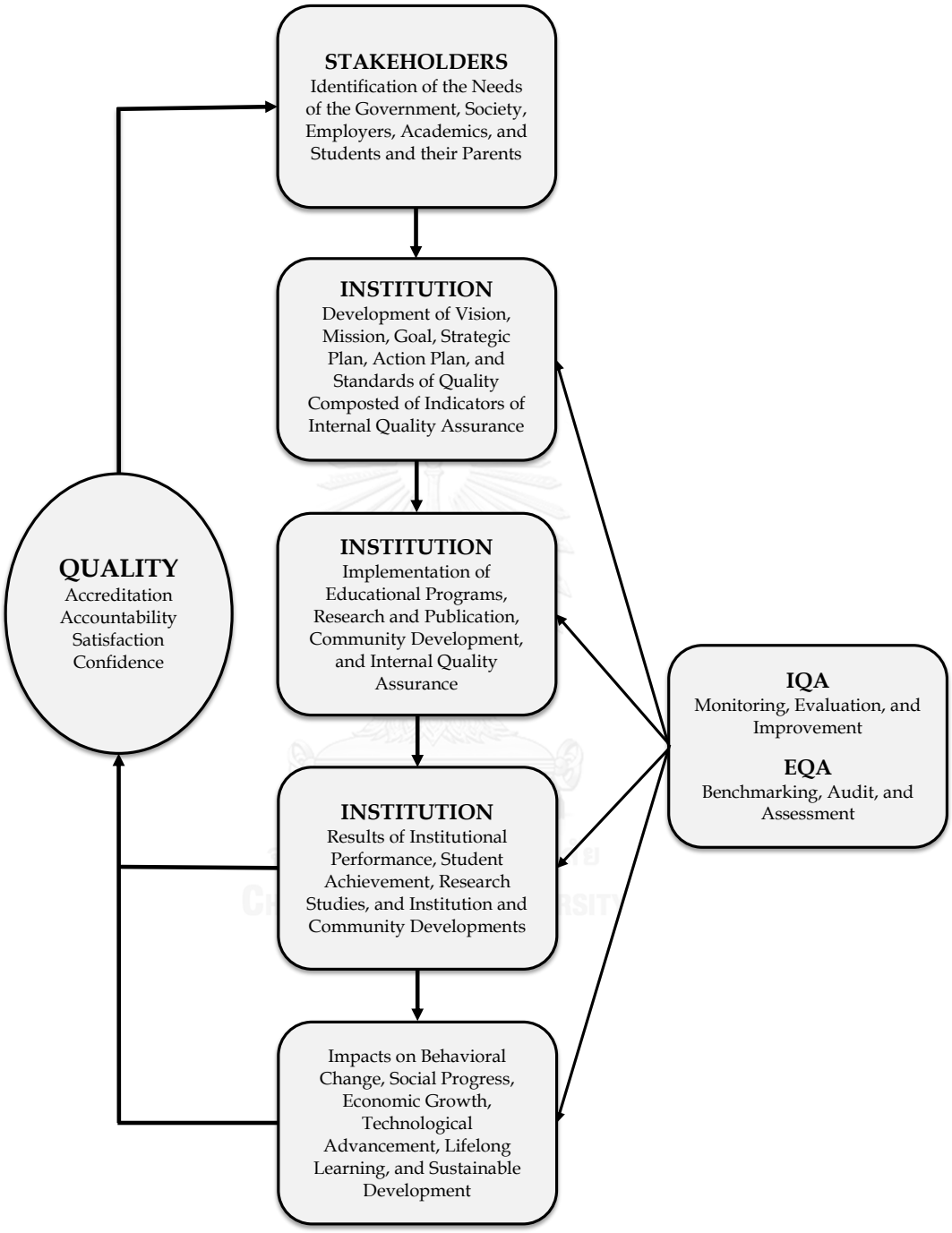
7) Harvey and Knight (1996) and Sallis (2002) claim that quality can be attained if quality change or continuous improvement exist in each institution and its students. This notion is known as *transformation*. Unlike, the excellence notion, which stresses the importance of the input rather than that of the process, this notion of quality puts an emphasis on the process. It is believed that the same inputs may yield different results if different approaches or methodologies are applied. The use of such a notion of quality in higher education is that each institution should pay much more attention to enhancing and empowering students so that the quality education is surely transferred to them during their college lives (Harvey & Knight, 1996). Enhancing students really involves making changes to their knowledge, abilities, and skills known as value added. In practice, value added should be precise enough to indicate significant changes during the education process (Barnett, 1988). Empowering students concerns giving power to them for the learning process. Harvey and Burrows suggest four main approaches to student empowerment including 1) providing them with opportunity to comment on the educational programs; 2) giving them responsibility to join in core institutional activities including policy setting, curriculum development and reform, and institutional development; 3) giving them more control over their own learning; and 4) developing their critical ability (as cited in Harvey & Knight, 1996, pp. 8-10).

In conclusion, like life or love, quality is an abstract concept that is really hard to precisely define. Many authors have defined the word in different notions which cover stakeholder's perceptions or requirements. According to ASEAN University Network (2007), the government sees quality as value for money; external assessors, as fitness for purpose; academics, as excellence; and students as value added or quality change. These notions are significant for quality maintenance and enhancement. However, the uniqueness, excellence, and flawlessness notions of quality are still appropriate for the manufacturing industry rather than the education context. The notions of quality as excellence, fitness for purpose, value for money, and transformation can be applied within the context of higher education, more or less.

Since quality is an abstract idea, a direct measurement cannot be performed and then quality education may not be guaranteed. To deal with the problem, indicators of quality should be identified to set standards of quality that take into account the needs of stakeholders and other interested groups. All the educational subdivisions including inputs, processes, and outputs should also be of quality and a valid and reliable quality assessment should be conducted to judge each institution.

However, it is necessary that desirable quality last as long as possible to satisfy stakeholders, sustainably develop the institution and key communities and society, and effectively compete with other countries in the region and the globe. Hence, the higher education sector should pay much more attention to the impact of educational provisions because it closely relates to long-term quality that makes stakeholders feel confident and continue to support the institution. It is seen that higher education quality is like a cycle. It starts from stakeholders' requirements and expectations and ends with their satisfaction and confidence. The quality cycle begins and ends again the same way as in Figure 2.2.

Figure 2.2: Quality cycle of higher education



2.4.1.2 Quality Assurance

The American dictionary defines quality assurance as ‘a system for evaluating performance, as in the delivery of services or the quality of products provided to consumers, customers, or patients’ (Pickett, 2006). The Oxford dictionary defines the phrase as ‘the practice of managing the way goods are produced or services are provided to make sure they are kept at a high standard’ (Hornby, 2000). The two definitions are similar but clearly reflect the system of a manufacturing industry or business sector rather than an education system.

Harman and Meek (2000) and Sallis (2002) describe quality assurance as the process adopted to ensure that the output of a system meets the stated criteria in order to trust stakeholders.

Another definition is that quality assurance refers to the process of monitoring, assessing, and reviewing a system to ensure that the input, process, and output of the system meet the required standard or fulfil stakeholders’ expectations (Martin & Stella, 2007, 2011; Mgijima, 2000; Vlasceanu, Grunberg, & Parlea, 2007).

In conclusion, quality assurance refers to the ongoing process of monitoring, assessing, maintaining, and enhancing quality of a system by a quality assurance body to ensure that the output of a system satisfies the specified criteria, gains stakeholders’ satisfaction, and meets the standards of the quality assurance body.

2.4.2 Quality Assurance System in Higher Education

HEIs carry responsibility to make their products and services meet the specified objectives or standards set by both IQA and EQA units in order to get accredited. Then, they have to maintain and enhance the achievement as long as they can so as to retain stakeholders’ confidence. In fact, HEIs can maintain and enhance quality through an ongoing assessment process conducted by IQA or EQA experts in a structured way, called quality assurance system for higher education, which falls into two categories: IQA and EQA systems.

2.4.2.1 Internal Quality Assurance System

Assuring quality should start first within each HEI itself. This type of quality assurance is called IQA, which refers to the ongoing process adopted by each HEI or program to see whether its stated goal or objectives and the standards applied to HEIs in general are being achieved (Martin & Stella, 2011). Therefore, it is necessary that

each HEI have an IQA system that relates to regular educational activities. To ensure quality maintenance and enhancement, the IQA system should take into account three main elements: 1) monitoring, 2) evaluation, and 3) improvement (AUN, 2007).

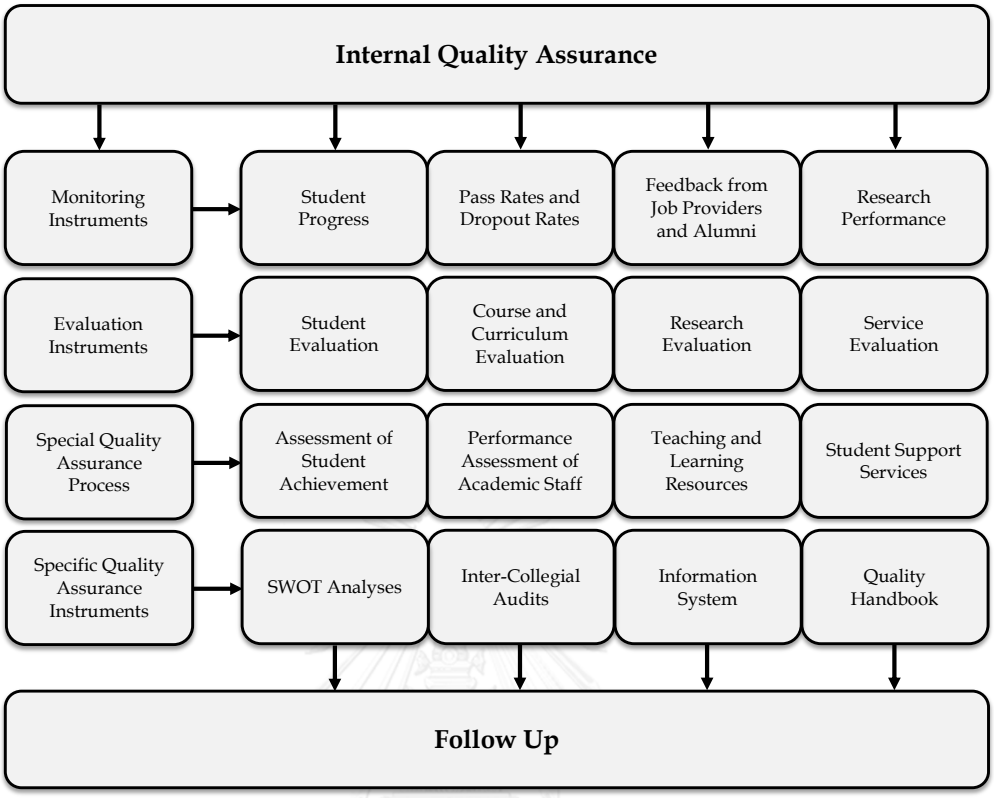
1) Monitoring is concerned with the regular observation and check of all educational activities within each HEI so as to gather information on all aspects of the system in order to analyze the state or condition of the system, determine if the input resources are properly and accurately utilized, identify problems and challenges in the system, and provide appropriate solutions to these problems and challenges (Bartle, 2011).

2) Evaluation is involved with the judgment process of the performance of each component or unit of a system. This process is performed to determine whether the most appropriate strategy has been selected and implemented properly, determine if the specified goal is being achieved, and identify the impact of the system (Marsden, 1991). The evaluation result should reflect the real needs and interests of current national policy and economy so as to promote well-beings and sustainable development within society (Kanjanawasee, B.E. 2554).

3) Improvement is considered very important within the process of quality maintenance and enhancement. What the institution needs to do after the processes of monitoring and evaluation is that the remaining requirements are to be considered and improved or changed to retain stakeholders' confidence. Hence, educational quality improvement should involve all participants in the institution including faculty seniors, heads of departments, administration staff, academic staff, students, and other potential stakeholders (Johnston, 2011).

The IQA system within each HEI is not necessarily identical. The institution can adopt one for itself but it is imperative that the IQA system be consistent with the institution's resources. However, the IQA system is composed of some requirements in common: 1) a policy and mechanisms for IQA; 2) suitable systems for monitoring, reviewing, and approving programs and awards provided; 3) mechanisms for assessing student achievement, work performances of staff members and academic staff, teaching and learning effectiveness, learning resources, and student support services; and 4) an appropriate information system within each HEI (AUN, 2007). Table 2.3 will present the model of IQA system suggested by ASEAN University Network.

Figure 2.3: Model of internal quality assurance system



Source: ASEAN University Network (2007)

2.4.2.2 External Quality Assurance System

The EQA system is very important for enhancing, maintaining, and assuring educational quality of each HEI. This procedure is adopted by the EQA body to assess the operation of the education system so as to see whether or not the agreed standards are being achieved (Martin & Stella, 2011). Also, the EQA is important for each HEI to improve the quality of educational provisions, provide accountability to stakeholders, offer the information about the level of standards within the institution to prospective students and job providers, and help the government with timely decision-making on funds contribution (Billing, 2004). This type of quality assurance is concerned with 1) benchmarking, 2) audit, and 3) assessment (AUN, 2007; Vlasceanu et al., 2007).

1) Benchmarking refers to the process that the performances of one HEI are compared with those of another in order to identify strengths and weaknesses, find out possible problems within the performances, and make good practice for HEIs.

2) Audit refers to the process of reviewing each HEI or its programs so as to see if the stated goals are being achieved.

3) Assessment is concerned with the process of gathering, analyzing, and using both quantitative and qualitative information on HEIs to judge the effectiveness of teaching and learning and other educational provisions. This type of IQA is necessary to provide formal accreditation to any HEI that can fulfill the minimum requirements or standards of the EQA body.

2.4.3 Advantages of Quality Assurance in Higher Education

Quality assurance plays the most important role in an education system. It helps the institution and its stakeholders realize that the stated goals can reach the minimum standards or criteria. In fact, quality assurance provide many benefits to the institution and its stakeholders.

1) With the constructive feedback from the quality assurance, the institution can create a culture of quality care and regularly improve themselves and their students by identifying real needs and resources, developing and implementing action plans, and conducting evidence-based decision-making (MUST, 2014).

2) With the results of quality assurance, students choose which HEI they will invest their money and time with so as to obtain quality education and profitable jobs afterwards; job providers employ qualified graduates for their institutions, companies, and organizations; and the government decides on funds contribution and use qualified human resources for sustainable development of the country and effective competitions in the regional and global contexts (ACC, 2011b; Lenn, 2004).

2.4.4 Quality Assurance in Higher Education in Cambodia

Despite the radical reform of the Cambodian higher education system in the 1990s, educational quality assurance in Cambodia had never existed until the establishment of the ACC in 2003. Since then the ACC has developed two educational quality assurance programs: Foundation Year Course Assessment and Institutional Accreditation. These two programs are intended to monitor, assess, maintain, enhance, and assure quality for both public and private HEIs that are responsible for bachelor and higher degrees in Cambodia.

2.4.4.1 Foundation Year Course Assessment

The foundation year course is the first year academic program of bachelor degrees found useful for students when they first start their college lives. At least eight basic and two oriented subjects are taught throughout the year according to each major.

Conducting such an assessment provides HEIs in Cambodia with a culture of IQA towards both national and international recognition. Therefore, HEIs that provide bachelor degrees have to be assessed by the ACC to see whether or not the input and process of the foundation year program produce quality results. The ACC has addressed three aspects of assessment result on the foundation year program: 1) full accreditation, 2) provisional accreditation, and 3) non-accreditation (ACC, 2010b).

1) The full accreditation is provided to any HEI when its foundation year program meets most of the ACC's requirements and criteria. In this case, each HEI is authorized for three academic years so as to issue foundation year course certificates to foundation year students. During the period of full accreditation, the ACC carries out a midterm review to monitor and assess the performance of the accredited foundation year program in each HEI in order to see whether or not the education quality is being maintained.

2) The provisional accreditation is offered to any HEI when its foundation year program partially meets the ACC's requirements and criteria. In this case, each HEI is authorized only one academic year to issue foundation year course certificates to foundation year students. During this period, each foundation year program has to fulfil the remaining requirements and criteria and prepare a self-assessment report on the accomplishment of the remaining requirements to call for a reassessment from the ACC in the following academic year. If each foundation year program manages to fulfil the remaining requirements, the HEI will be provided with a full accreditation for its foundation year program.

3) The non-accreditation is provided to any HEI when its foundation year program fails to fulfil most of the ACC's requirements and criteria. In this case, each HEI is never authorized to issue foundation year course certificates. Hence, after the assessment with detailed recommendation each foundation year program has to fulfil all the remaining requirements and criteria and prepare a self-assessment report on the accomplishment of the remaining requirements so as to call for a reassessment from the ACC in the same academic year. If its foundation year program manages to fulfil the remaining requirements, the HEI will be provided with a provisional accreditation. If not, the HEI will get a non-accreditation and not be allowed to continue its foundation year program.

2.4.4.2 Institutional Assessment

Unlike the foundation year course assessment which focuses on only the first year program, the institutional assessment covers the overall programs provided in an HEI. In order to get a national accreditation for issuing degrees to successful students, all HEIs have to be assessed by the ACC. This assessment is performed in order to see whether or not the required results are being produced for stakeholders. The ACC has revealed three aspects of the institutional assessment: 1) candidate of accreditation, 2) provisional accreditation, and 3) full accreditation (ACC, 2011b).

1) The candidate of accreditation is not the institutional accreditation but a 2-year period of preparedness before the assessment process of provisional accreditation. During this period, each HEI has to send a self-assessment report to the ACC to call for an assessment. The process of candidate of accreditation is to be applied with an HEI that provides the foundation year program that has not been fully accredited or an HEI that does not provide the foundation year program.

2) Provisional accreditation is a 3-year period of institutional accreditation. It is provided to an HEI that partially meets the ACC's minimum standards. In this case, the institution has to fulfil the remaining requirements and do a self-assessment report on the accomplishment of the remaining requirements within three years and send it to the ACC to call for a re-assessment for a full accreditation. During the period, the ACC will take a midterm review. The process of provisional accreditation is to be applied with an HEI whose foundation year program is fully accredited or an HEI provided with only a candidate of accreditation. If the institution fails to call for an assessment for a full accreditation within three years, the ACC will reassess its system and provide the provisional accreditation again. HEIs are allowed to get provisional accreditation only twice.

3) Full accreditation is a 5-year period of institutional accreditation and is provided to any HEI that meets the minimum standards. In this case, each accredited institution has to prepare and send an annual report on the improvement to the ACC. During the period, the ACC will conduct a midterm review to monitor and assess the performance of the institution to see whether the education quality is being maintained. After that period of full accreditation, the ACC will carry out a re-assessment in order to provide another round of full accreditation.

2.5 Relevant Research Studies

In this part of the literature review, some previous research studies relevant to dimensions and indicators of quality in higher education have been reviewed to select and include some dimensions and indicators that are appropriate for the condition of faculty of education in Cambodia. Below are the relevant research studies.

In 2000 Thongphakdee specifically carried out a research that aimed to develop composite indicators of quality for faculty of education in Rajabhat Institutes all over Thailand. As a result, 14 factors were grouped as dimensions of quality including: 1) teaching and learning resources; 2) student activities; 3) buildings and environment; 4) teaching and learning; 5) financial support; 6) research and innovation; 7) quality assurance and enhancement; 8) management; 9) support from alumni and community; 10) students; 11) value-added; 12) quality of academic staff; 13) curriculum; and 14) vision, mission, and goals of the faculty (Thongphakdee, 2000). Similarly, a research on development of IQA system for specific education of the Royal Thai Navy by Jiraro (2004) released eight dimensions of quality including 1) quality of students and alumni, 2) learning, 3) learning support, 4) research and innovation, 5) professional services for each unit of the Royal Thai Navy and key communities, 6) culture support and preservation, 7) management, and 8) IQA system. Another research study aiming to develop assessment standards, indicators, and criteria for short courses for medical officers of the Royal Thai Navy released three main factors with 13 sub-factors: 1) the input (quality of academic staff, quality of students enrolling in the program, quality of senior leaders of the program, quality of curriculum, and quality of teaching and learning resources); 2) the process (quality of program management, quality of teaching and learning process, and quality of measurement and evaluation of teaching and learning); and 3) the output (characteristics of graduates, characteristics of expected navy, satisfaction of students in the program, satisfaction of senior leaders, and specific characteristics of each program) (Ngamsert & Tangdhanakanond, 2009).

To produce qualified human resources for an effective competition with those of other countries and conservation of the "Thainess", a group of researchers from Faculty of Education at Chulalongkorn University conducted a research study on "Education Transformation: Heading Towards Knowledge-Based Economy". The research project aimed to study related factors supporting effective education and set goals and directions

for educational provisions (Sinlarat et al., 2009). One finding of the research released seven dimensions of quality, called the seven pillar principles: 1) KBE learners' desirable characteristics (smart consumer, breakthrough thinker, social concerns, and Thai pride); 2) curriculum; 3) instructional implementation; 4) learning opportunity enhancement; 5) information literacy enhancement; 6) educational administration; and 7) educational provision standards. The other result showed that there were five strategies for education transformation processes including 1) creating a vision through workshop; 2) enhancing knowledge and skills of school teachers and stakeholders; 3) investing in academic and financial supports; 4) supervising, monitoring, and evaluating work performances; and 5) summarizing the lessons learned from research.

Tsinidou, Gerogiannis, and Fitsilis (2010) conducted a research study in order to evaluate the factors that determine quality in higher education in Greece from students' perspectives. Seven important dimensions of quality in higher education emerged from this research study including 1) quality of academic staff (qualification, experiences, interpersonal skills, and research activities); 2) administration services (friendly and rapid services, information materials, guidelines and counselling services, information technology support, and working hours); 3) library services (adequate textbooks and journals, friendly and easy access to those documents, working hours, and E-library), 4) curriculum structure (contents, supporting materials, course structure information, elective courses, and time table); 5) institution location (easy access, frequent transport, and cost of transportation); 6) infrastructure (class and laboratory, accommodation and canteen, sport and medical facilities, access to administration, and cultural events); and 7) career prospects (post graduate programs, employment opportunity, oversea study and exchange programs, and business link). Similarly, Vann (2012) suggested six main dimensions of quality in a research on perceptions of quality in Cambodian higher education from many different stakeholders including rectors, academic staff, students, employers, academic professional associations, university consultants and donors, and the Government. Such dimensions were 1) curriculum, 2) quality of academic staff, 3) teaching and learning resources, 4) good governance and leadership, 5) employment opportunities, and 6) infrastructure and location.

In conclusion, similar factors or dimensions of higher education quality have been determined by most researchers in order to maintain, enhance, and assure educational

quality in the institution. Some dimensions are similar but some are a little different. However, the researcher has grouped these results into 12 dimensions of educational quality: 1) vision, mission, and goals; 2) leadership and good governance; 3) educational programs; 4) quality of academic staff; 5) research and innovation; 6) customers and support services; 7) teaching and learning resources; 8) building and environment; 9) financial support; 10) support from alumni and community; 11) value added; and 12) IQA system.

2.6 Identification of Research Conceptual Framework

The researcher has synthesized key concepts, guidelines, and previous research studies related to dimensions and indicators of quality in higher education to develop a model of IQA indicators of faculty of education in Cambodia. As a result, six main dimensions and 22 sub-dimensions of higher education quality have been selected as the research conceptual framework from 14 sources as in Table 2.7 and 2.8.

Table 2.7: Dimensions and sub-dimensions of research conceptual framework

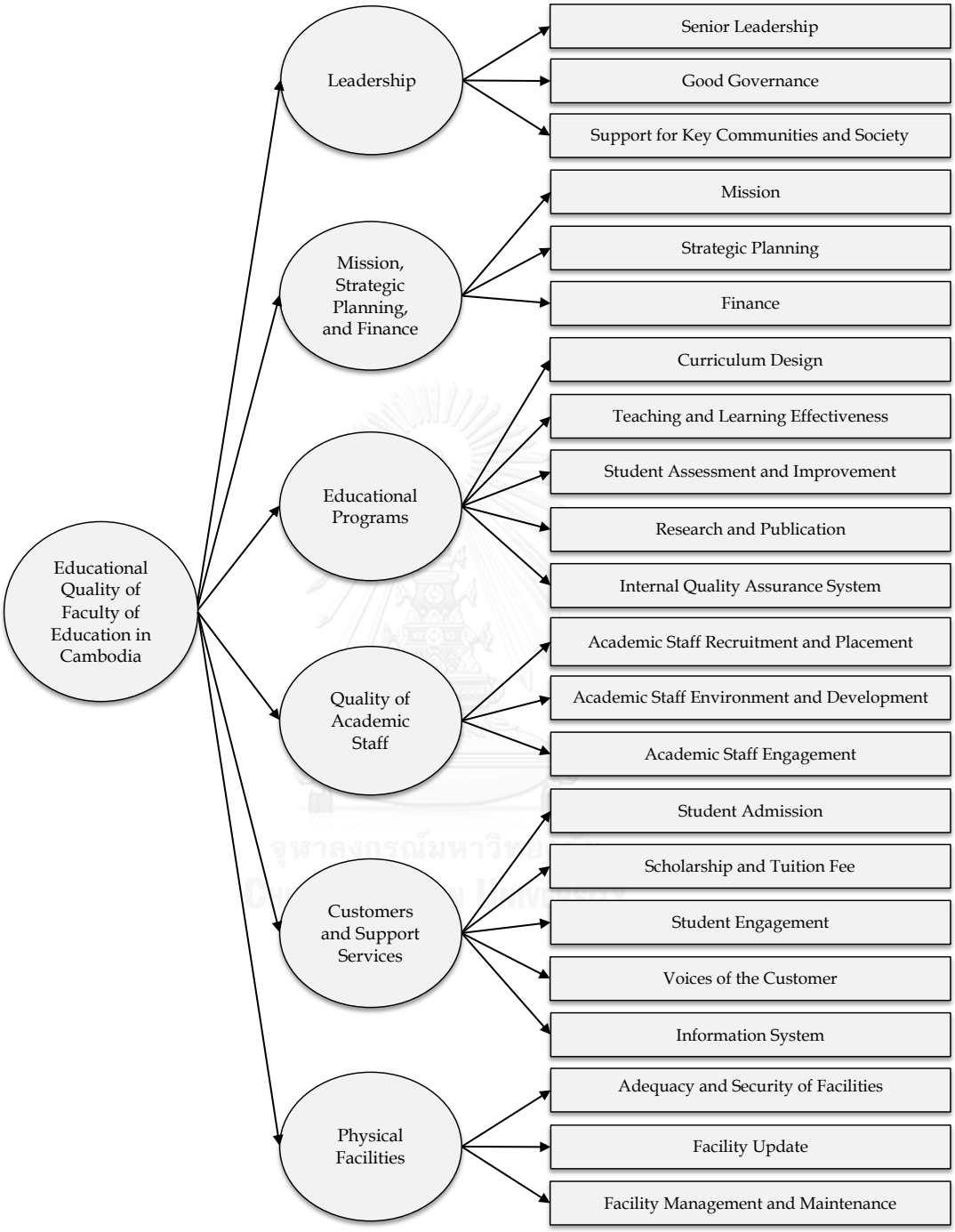
Dimensions	**Sub-Dimensions**
1. Leadership	1.1 Senior leadership 1.2 Good governance 1.3 Support for key communities and society
2. Mission, Strategic Planning, and Finance	2.1 Mission 2.2 Strategic planning 2.3 Finance
3. Educational Programs	3.1 Curriculum design 3.2 Teaching and learning effectiveness 3.3 Student assessment and improvement 3.4 Research and publication 3.5 Internal quality assurance system
4. Quality of Academic Staff	4.1 Academic staff recruitment and placement 4.2 Academic staff environment and development 4.3 Academic staff engagement
5. Customers and Support Services	5.1 Student admission 5.2 Scholarship and tuition fee 5.3 Student engagement and services 5.4 Voices of the customer 5.5 Information system
6. Physical Facilities	6.1 Adequacy and security of facilities 6.2 Facility update 6.3 Facility management and maintenance

Table 2.8: Dimensions and sub-dimensions of research conceptual framework with relevant sources

Dimensions/Sub-Dimensions	Authors and Researchers													
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Leadership														
1.1 Senior leadership	✓				✓				✓		✓	✓	✓	✓
1.2 Good governance	✓		✓	✓	✓			✓	✓	✓	✓	✓		
1.3 Support for key communities and society	✓			✓	✓								✓	
2. Mission, strategic planning, and finance														
2.1 Mission	✓		✓		✓						✓			✓
2.1 Strategic planning	✓		✓	✓	✓									✓
2.3 Finance	✓		✓		✓						✓			✓
3. Educational programs														
3.1 Curriculum design	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓
3.2 Teaching and learning effectiveness	✓	✓	✓					✓	✓		✓	✓	✓	✓
3.3 Student assessment and improvement	✓	✓	✓		✓	✓		✓				✓		
3.4 Research and publication	✓		✓		✓			✓			✓		✓	✓
3.5 Internal quality assurance system	✓		✓	✓	✓	✓					✓		✓	✓
4. Quality of academic staff														
4.1 Academic staff recruitment and placement		✓	✓		✓	✓	✓		✓					✓
4.2 Academic staff environment and development	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
4.3 Academic staff engagement	✓													✓
5. Customers and support services														
5.1 Student admission		✓	✓									✓	✓	✓
5.2 Scholarship and tuition fee			✓											
5.3 Student engagement and services	✓	✓	✓		✓		✓		✓	✓	✓	✓	✓	✓
5.4 Voices of the customer	✓	✓					✓					✓		
5.5 Information system	✓	✓	✓		✓	✓								
6. Physical facilities														
6.1 Adequacy and security of facilities	✓	✓	✓			✓	✓		✓	✓		✓	✓	✓
6.2 Facility update		✓	✓				✓							
6.3 Facility management and maintenance		✓	✓			✓	✓							

Note: 1 = Baldrige Performance Excellence Program (2013), 2 = ASEAN University Network (2011),
3 = Accreditation Committee of Cambodia (2011a),
4 = Office for National Education Standards and Quality Assessment (B.E. 2554),
5 = Office of the Higher Education Commissions (B.E. 2553),
6 = European Association for Quality Assurance in Higher Education (2009),
7 = Owlia and Aspinwall (1996), 8 = Barnett (1992), 9 = Vann (2012),
10 = Tsinidou et al. (2010), 11 = Sinlarat et al. (2009),
12 = Ngamsert and Tangdhanakanond (2009), 13 = Jiraro (2004), and
14 = Thongphakdee (2000)

Figure 2.4: Research conceptual framework



CHAPTER 3
RESEARCH METHODS

This study is a type of descriptive research involved with both quantitative and qualitative approaches in order to construct and validate a model of IQA indicators of faculty of education in Cambodia in order that educational quality is maintained and enhanced during the process of producing human resources for the teaching profession. Below are the population and sample, instrument design and testing, data collection process, and data analysis design for the research study.

3.1 Population and Sample

The population of this research study included stakeholders of faculty of education; experts of higher education; deans or associate deans, academic staff, staff, and students of faculty of education in both public and private HEIs; and directors or deputy directors, academic staff, staff, and students of RTTCs in Cambodia in the academic year of 2014-2015. Three various groups of sample were selected from this population through different sampling techniques and for different purposes.

1) The first group of participants was selected to join in individual interviews through open-ended questions. Such a method is of qualitative data collection. Hence, the sample size of this approach should be from 1 or 2 to 30 or 40 based on the research objective and time available for data collection (Creswell, 2012). In order to obtain or understand in-depth information about what is being sought within this approach, the researcher intentionally selects target participants, which is called the purposeful sampling technique (Creswell, 2012). In this research study, the researcher selected four experts of higher education and four stakeholders of faculty of education in Cambodia using the purposive sampling technique with specific selection criteria in order to determine possible dimensions and indicators of quality of faculty of education in Cambodia. The selection criteria fell into two categories for the first group of participants. The experts of higher education were required to have 1) at least a master degree in higher education or other related fields, 2) five-year experience in higher education management or other related fields, and 3) five-year experience in teaching or research in the field of higher education or other related fields. The stakeholders were required to have 1) at least a

master of education in educational management or other related fields and 2) five-year experience in educational management or other related fields.

2) The second group of participants was selected to verify the fit of the model of IQA indicators of faculty of education in Cambodia. Hence, the confirmatory factor analysis was concerned. In this case, the sample size should be large enough for the analysis. Normally, the sample size should be at least five times as large as the number of variables to be analyzed; but to be more acceptable, it should be at least ten times as large as the number of variables being used in the research (Hair, Black, Babin, & Anderson, 2010). In this research study, since 77 IQA indicators were constructed and used within the research instrument, the researcher selected 800 participants from 14 HEIs and six RTTCs in Cambodia as the sample size via the simple random sampling technique. More information about the sample size is shown in Table 3.1.

Table 3.1: Sample size in each higher education institution in Cambodia

No	Higher Education Institutions	Type	Teachers	Staff	Students	Total
1	Royal University of Phnom Penh	Public	3	1	41	45
2	National Institute of Education	Public	5	2	43	50
3	Preah Sihanouk Raja Buddhist University	Public	3	3	24	30
4	University of Battambang	Public	4	1	20	25
5	Phnom Penh Regional Teacher Training Center	Public	7	3	50	60
6	Battambang Regional Teacher Training Center	Public	11	4	55	70
7	Kandal Regional Teacher Training Center	Public	7	3	45	55
8	Takeo Regional Teacher Training Center	Public	7	2	45	54
9	Kampong Cham Regional Teacher Training Center	Public	6	2	45	53
10	Prey Veng Regional Teacher Training Center	Public	8	2	45	55
11	Khemarak University	Private	3	3	22	28
12	Asia Euro University	Private	2	2	15	19
13	Western University	Private	3	4	17	24
14	University of Puthisastra	Private	4	2	25	31
15	University of Management and Economics	Private	3	2	25	30
16	Angkor Khemara University	Private	8	7	21	36
17	Pannasastra University of Cambodia	Private	3	2	20	25
18	Phnom Penh International University	Private	4	3	20	27
19	International Education Institute	Private	5	2	44	51
20	Institute of Management and Development	Private	4	2	26	32
		Total	**100**	**52**	**648**	**800**

3) The last group of participants was selected to join in the focus group so as to validate the model of IQA indicators of faculty of education in Cambodia. Normally, a group of 6 to 8 (Finch & Lewis, 2003; Krueger & Casey, 2008), 6 to 12 (Rio-Roberts, 2011), or 4 to 6 (Creswell, 2012) is purposively selected in order to conduct the focus group. Hence, 12 intended practitioners from faculty of education in Cambodia were selected to participate in the focus group via the purposive sampling technique. These practitioners included associate deans of faculty of education, directors of RTTCs, and practitioners from department of education in Cambodia. The selection criteria were that they were required to have 1) at least a master degree in educational management or other related fields, 2) 3-year experience in the current position, and 3) experience in educational quality assurance. However, only 11 practitioners participated in the focus group.

3.2 Research Instrument Design and Testing

Three types of research instruments were designed and utilized in this research study including 1) semi-structured interview form, 2) questionnaire, and 3) evaluation form. The first instrument was used with four stakeholders of faculty of education and four experts of higher education in Cambodia to identify dimensions and indicators of quality of faculty of education in Cambodia. The second one was applied with 800 respondents of faculty of education in Cambodia to verify the fit of the model of IQA indicators of faculty of education in Cambodia. The last instrument was used with 11 practitioners from faculty and department of education and RTTCs in Cambodia so as to assess the model of IQA indicators in order that it would become the effective one for faculty of education in Cambodia.

3.2.1 Semi-Structured Interview Form

Interviews are considered as conversations or discussions that are designed so as to gather information relevant to a specific topic. They are used to obtain different kinds of data including opinions, perceptions, attitudes, facts, and knowledge from experts (Harrell & Bradley, 2009). To date, interviews are popular for researchers at some time of their research studies because of more specific data collection methods and flexible format and function (Breakwell, 2012). According to Harrell and Bradley (2009), there are three formats of interviews including structured interview, semi-structured interview, and unstructured interview. However, the semi-structured interview is more popular

in that it provides enough freedom for interviewees to express their ideas or perceptions, experiences, and knowledge towards the selected topic (Mason, 2013).

Hence, the researcher designed a semi-structure interview of two open-ended questions aiming 1) to determine possible dimensions of educational quality of faculty of education in Cambodia and 2) to identify corresponding indicators in each dimension so as to conduct individual interviews with four experts of higher education and four stakeholders of faculty of education in Cambodia.

After the completion of open-ended questions, the researcher asked the advisor to check the appropriateness of the questions and translated them into Khmer. Then, the researcher asked five academic staff of higher education to respond to the questions in order to check the objectivity of the semi-structure interview form prior to conducting real interviews with the participants in Cambodia.

3.2.2 Questionnaire

With the result of identification of dimensions and indicators of quality of faculty of education in Cambodia from the experts and stakeholders and the synthesis results of dimensions and indicators of quality of higher education from the literature review, the researcher designed a questionnaire of 5-point Likert scale to collect information about the appropriateness of the constructed indicators for the context of faculty of education in Cambodia.

After designing the questionnaire, the researcher asked the advisor to check its appropriateness and errors. Then, the researcher translated it into Khmer and asked one expert of higher education and linguistics to check the English-to-Khmer translation. Then, the researcher purposively selected five experts of higher education in Cambodia through the same selection criteria used for the first research instrument to check the content validity of the questionnaire.

These experts were asked to consider each indictor and decide if it was able to be the underlying indicator of the given dimensions of quality of faculty of education in Cambodia by putting “1” when the expert thought the indicator was able to be under the dimension or “0” when the expert thought the indicator was not able to be under the dimension or when the expert was not sure whether the indicator was able to be under the dimension. This is called item-objective congruence (IOC), which is performed to check content validity of the research instrument (Kanjanawasee, B.E. 2556). The IOC

index is acceptable when 80% or more of the experts agree that the item can measure the factor or dimension as it states or the indicator can be the underlying variable for that factor or dimension (Kanjanawasee, B.E. 2556; Rovinelli & Hambleton, 1977).

As the result of IOC checking from the five experts, all indicators were totally acceptable because the IOC index ranged from 0.80 to 1.00 as in Appendix F.

After the IOC checking, the researcher asked 30 academic staff who were not included into the sample size to fill in the questionnaire. This was done to check the reliability of the questionnaire with Cronbach's Alpha Coefficient as in Table 3.2.

Table 3.2: Reliability of each dimension of quality and whole questionnaire

Dimension	Cronbach's Alpha Coefficient
1. Leadership	0.820
2. Mission, Strategic Planning, and Finance	0.913
3. Educational Programs	0.954
4. Quality of Academic Staff	0.899
5. Customers and Support Services	0.921
6. Physical Facilities	0.941
Whole Questionnaire	**0.978**

The questionnaire was divided into two main parts: 1) demographic information of the respondents and 2) the level of appropriateness of indicators of quality for the context of faculty of education in Cambodia. To get such information, the respondents were required to consider to what extent the indicator was suitable for the context of faculty of education in Cambodian. In this case, the researcher applied a 5-point Likert scale, ranging from 1 (not suitable) to 5 (very suitable), in the questionnaire which was composed of six dimensions and 22 sub-dimensions with 77 indicators as in Table 3.3.

Table 3.3: Dimensions, sub-dimensions, and the number of indicators of quality

Dimension	Sub-Dimension	Number of Indicators
1. Leadership	1.1 Senior leadership	2
	1.2 Good governance	4
	1.3 Support for key communities and society	3
2. Mission, Strategic Planning, and Finance	2.1 Mission	3
	2.2 Strategic planning	4
	2.3 Finance	5

Table 3.3 (Cont.)

Dimension	Sub-Dimension	Number of Indicators
3. Educational Programs	3.1 Curriculum Design	8
	3.2 Teaching and Learning Effectiveness	8
	3.3 Student Assessment and improvement	3
	3.4 Research and publication	5
	3.5 Internal quality assurance system	4
4. Quality of Academic Staff	4.1 Academic staff recruitment and placement	3
	4.2 Academic staff environment and development	3
	4.3 Academic staff engagement	3
5. Customers and Support Services	5.1 Student admission	2
	5.2 Scholarship and tuition fee	2
	5.3 Student engagement and services	4
	5.4 Voices of the customer	3
	5.5 Information system	3
6. Physical Facilities	6.1 Adequacy and security of facilities	1
	6.2 Facility update	1
	6.3 Facility management and maintenance	3
	Total	**77**

3.2.3 Evaluation Form

Based on the construction and verification results of the model of IQA indicators of faculty of education in Cambodia and the four standards of evaluation, the researcher designed an evaluation form so that the 77 IQA indicators would be evaluated during the focus group with 11 practitioners from faculty and department of education and RTTCs in Cambodia.

After designing the evaluation form, the researcher asked the advisor to check its appropriateness prior to the real focus group discussion and translated it into Khmer. Then, the researcher asked three academics to evaluate the IQA indicators through this evaluation form in order to check its appropriateness and objectivity.

To evaluate an indicator, the participants were required to consider and decide to what extent the proposed IQA indicators of faculty of education in Cambodia were able to fulfil the evaluation standards including 1) utility, 2) feasibility, 3) propriety, and 4) accuracy (JCSEE, 1981). These four evaluation standards consist of 30 criteria that are intentionally used for meta-evaluation, so most of them were not available for

this evaluation of IQA indicators of faculty of education in Cambodia. Hence, the researcher designed 12 indicators based on the intended uses of the four standards to evaluate these IQA indicators and then the researcher asked the advisor to check if the 12 evaluating indicators were able to reflect the characteristics of the four standards. Below are the evaluating indicators used in this evaluation form.

Utility Standard

U1: To what extent is the indicator related to the needs of faculty of education in Cambodia?

U2: To what extent does the indicator reflect the condition or characteristics of faculty of education in Cambodia?

U3: To what extent is the indicator beneficial to faculty of education in Cambodia?

Feasibility Standard

F1: To what extent is the indicator easy to understand by faculty of education in Cambodia?

F2: To what extent is the indicator appropriate for the context of faculty of education in Cambodia?

F3: In terms of human and financial resources, to what extent can the indicator be utilized in faculty of education in Cambodia?

Propriety Standard

P1: To what extent did the researcher use the information from the respondents for the indicator construction for faculty of education in Cambodia?

P2: To what extent was the indicator construction performed in a legal and ethical manner towards faculty of education in Cambodia?

P3: To what extent does the indicator provide respect and attention for faculty of education in Cambodia?

Accuracy Standard

A1: To what extent was the information (concepts, guidelines, and previous research studies) appropriate for the indicator construction for faculty of education in Cambodia?

A2: To what extent was the context of education in Cambodia analyzed for the indicator construction for faculty of education in Cambodia?

A3: To what extent were the technique and procedures suitable for the indicator construction for faculty of education in Cambodia?

These 77 IQA indicators of faculty of education in Cambodia were evaluated via 5-point Likert Scale, ranging from **1** (not at all) to **5** (very, completely, or extremely). The evaluation results were interpreted based on the interpreting criteria suggested by Best (1977). These include 4.50 to 5.00, meaning *the highest level*; 3.50 to 4.49, *high level*; 2.50 to 3.49, *moderate level*; 1.50 to 2.49, *low level*; and 1.00 to 1.49, *the lowest level*.

3.3 Data Collection Process

To collect data for this research study, two main steps were followed. First, the researcher asked permission from the faculty of education of Chulalongkorn University and the MoEYS in Cambodia. Then, the researcher communicated with the respondents in different places for data collection.

Collecting data for the research study was conducted in three different ways and times. First, the researcher contacted four stakeholders of faculty of education and four experts of higher education in Cambodia so as to conduct an individual fifty-minute open interview from 01 to 15 February 2015. Next, the researcher went to the target HEIs and RTTCs to gather information about the appropriateness of the 77 IQA indicators of quality for the context of faculty of education in Cambodia from 05 March to 30 May 2015. Finally, the researcher invited 11 practitioners from faculty and department of education and RTTCs in Cambodia to conduct the focus group on 12 June 2015, in order to validate the model of IQA indicators of faculty of education in Cambodia.

3.4 Data Analysis Design

In response to the research objectives, three types of data analysis were carried out within this research study including 1) descriptive statistics, 2) confirmatory factor analysis, and 3) content analysis.

3.4.1 Descriptive Statistics

The descriptive statistics was conducted to study demographic information of the respondents and the suitable levels of utility, feasibility, propriety, and accuracy of each IQA indicator of faculty of education in Cambodia. Such data was calculated and presented with frequency, percentage, mean, and standard deviation.

3.4.2 Confirmatory Factor Analysis

The confirmatory factor analysis (CFA) was carried out to verify the fit of the model of IQA indicators of faculty of education in Cambodia. In this case, LISREL was applied to see if the model of IQA indicators was paralleled to the empirical data from 800 respondents of faculty of education in Cambodia.

Prior to running the CFA, some statistics were checked to see if the model of IQA indicators was acceptable to run the CFA. The statistics to be considered here include Bartlett's Test of Sphericity and Kaiser-Mayer-Olkin measure of sampling adequacy (KMO). To be acceptable, the Bartlett's Test of Sphericity must be significant at the .05 level and the KMO mush be at least .50. It is not suitable if the KMO is less than .50 and it is very suitable if the KMO is more than .80 (Hair et al., 2010; Kim & Mueller, 1978).

During the CFA, some statistics were also checked to see whether the model of IQA indicators were able to fit the empirical data form the 800 respondents. These statistics include a chi-square (χ^2), degrees of freedom (df), a p-value, a goodness of fit index (GFI), an adjusted goodness of fit index (AGFI), and a standardized root mean square residual (Standardized RMR). The chi-square must not be significant at the .05 level or the quotient between the chi-square and degrees of freedom must not be more than 2 or 3 ($\chi^2/df \leq 2$ or 3); the GFI and AGFI must be more than .95 (GFI and AGFI > .95); and the Standardized RMR must be equal to or less than .05 (RMR $\leq$ .05) (Hair et al., 2010).

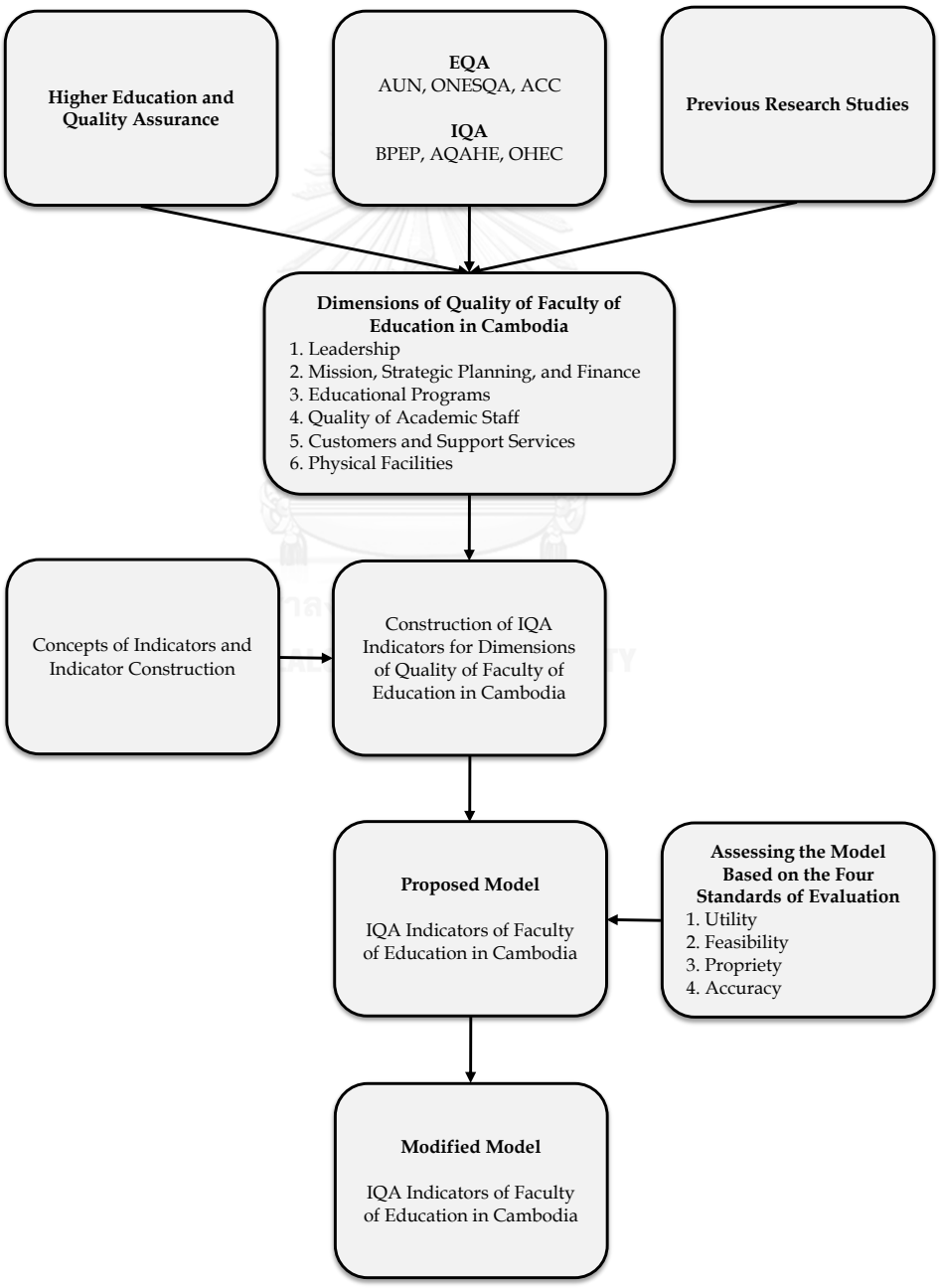
3.4.3 Content Analysis

The content analysis was performed in order to explore, analyze, and synthesize the concepts and perceptions of dimensions and indicators of educational quality from the open interviews and focus group.

Ritchie, Spencer, and O'Connor (2003) and Creswell (2012) assure that managing and breaking qualitative data into different themes or categories and synthesizing the data from all respondents are important approaches to qualitative data analysis. Potter and Levine-Donnerstein, 1999 (as cited in Hsieh & Shannon, 2005, p. 1281) state that the researcher can operationally label the qualitative data by referring to key concepts or variables based on theories or previous research studies.

Hence, the researcher first read the results of the interviews and focus group as a whole and then managed and coded them. After coding the data, the researcher grouped them into different dimensions of quality and put the given specification or indicator into its possible dimension. Finally, the researcher synthesized all responses from the interviews in order to determine dimensions and indicators of faculty of education in Cambodia and from the focus group so as to further describe the IQA dimensions and indicators of faculty of education in Cambodia.

Figure 3.1: Research procedure framework



CHAPTER 4
ANALYSIS RESULTS

This descriptive research study was conducted to fulfil the two main objectives including 1) constructing a model of IQA indicators of faculty of education for both public and private HEIs in Cambodia and 2) validating the model of IQA indicators. So, the analysis results of this research study fall into two main categories including 1) the construction results of a model of IQA indicators of faculty of education in Cambodia and 2) the validation results of the model of IQA indicators.

4.1 Construction of Model of IQA Indicators of Faculty of Education in Cambodia

The identification of IQA dimensions and indicators of faculty of education in Cambodia falls into four parts including 1) the experts' views on IQA dimensions and indicators of faculty of education, 2) the stakeholders' views on IQA dimensions and indicators of faculty of education, 3) the proposed model of IQA indicators of faculty of education, and 4) the verification of the fit of the model of IQA indicators of faculty of education in Cambodia.

4.1.1 Experts' Views on IQA Dimensions and Indicators of Faculty of Education in Cambodia

Four experts of higher education in Cambodia were selected to express their own experiences and perspectives in order to determine possible IQA dimensions and indicators of faculty of education in Cambodia. They were from different workplaces including the ACC, the Department of Higher Education (DHE), and the Royal Academy of Cambodia (RAC) in Cambodia.

Based on their responses, ten main IQA dimensions of faculty of education in Cambodia emerged from the interviews including 1) mission and strategic planning, 2) management and good governance, 3) curriculum design, 4) quality of academic staff, 5) teaching and learning and research, 6) student admission and services, 7) learning resources, 8) physical facilities, 9) finance, and 10) IQA system.

According to the collected data, all of the experts placed emphasis on curriculum design, quality of academic staff, learning resources, and teaching and learning and research while most of them focused on management and good governance, finance,

and physical facilities. The light emphasis was placed upon the rest of the dimensions. Below are the identification results of possible IQA indicators of faculty of education in Cambodia in each possible IQA dimension emerging from the experts' perspectives and experiences.

1) Curriculum design: When asked to identify what should be done within this IQA dimension in order to assure quality in faculty of education in Cambodia, all experts responded that curriculum designers should pay much attention to the content of their curriculum and approaches that they have applied to design, review, and update their curriculum. Based on their responses, the content should be consistent with current national policies and the needs of their stakeholders, especially key communities and society, and related to specific content knowledge and pedagogy plus other necessary skills for the teaching profession including technology, research methodology, life and career skills, communication skills, international languages, and regional and global issues. They added that the curriculum designer should identify clear learning outcomes when designing their curriculum.

2) Academic staff: In addition to the curriculum design, the experts said that teachers should play the important role to assure quality of educational provisions. They added that faculty of education in Cambodia should hire enough qualified teachers in place with specific qualifications for the teaching profession and have mechanisms for assessing their teaching performance and needs so as to develop and promote them.

3) Teaching and learning and research: During the interviews, the experts provided much information about what should be followed within this dimension so as to assure quality. They said that teaching and learning should be conducted based on the intended learning outcomes for each major or subject and research activities should be done in order to support teaching and learning, the needs of key communities and society, and faculty development. More importantly, the experts assured that the faculty should have effective mechanisms for assessing teaching and learning effectiveness and research activities so as to promote and award best teachers, students, and researchers.

4) Learning resources: When asked to provide more information about this dimension, the experts replied that the faculty should have appropriate libraries and laboratories with the installment of relevant documents and facilities and good Internet speed. The faculty should also hire qualified staff to work in these places in order to

train or help students, teachers, or others customers with the access or use of available document and laboratory facilities.

5) Management and good governance: To ensure quality in this dimension, the experts shared their views that the faculty should hire or select qualified faculty seniors and administration staff and have effective mechanisms for assessing their work performance in order to develop and promote them.

6) Finance: Based on the collected data, the experts claimed that, in order to attain quality, the faculty should have financial management and budget planning and adequate financial support for all educational and research activities and the needs of faculty development. They added that financial processes and reports should be audited by both internal and external auditors.

7) Physical facilities: According to the experts' perspectives, the faculty should provide adequate and comfortable physical facilities including offices, classrooms, and meeting rooms. They also mentioned that the faculty's building should be constructed within good environment and emergency exits. Maintaining physical facilities was another view on quality imposed by the experts.

8) Mission and strategic planning: What the experts responded in ensuring quality within this dimension was that the faculty should set a mission consistent with the institution's mission, faculty's resources, and the needs of educational policies. In addition, strategic and action plans should be developed and deployed to support the stated mission. More, importantly, the experts said that the strategic and action plans should be regularly reviewed and modified based on the needs of the faculty.

9) Student admission: To raise quality of faculty of education, the experts said that the faculty should carefully select students enrolling for the teaching career because they would become teachers or other educators. The experts added the faculty should provide students with supporting services and extra curricula during their college lives so that they would compete with others after graduation.

10) IQA system: For this dimension the experts suggested that the faculty should have their own IQA unit in order that the input, process, output, and impact of the faculty could be easily assessed. The experts said the faculty should hire qualified IQA staff in place in order to organize trainings or meetings on both IQA and EQA concepts and processes for faculty seniors, administration staff, teachers, students,

and other stakeholders. Besides, the IQA unit should assess faculty performance and educational provisions and report to the faculty in a timely fashion.

The experts also said that disseminating all available information to relevant stakeholders could be an effective approach to quality maintenance and enhancement of faculty of education. More information on the IQA dimensions and indicators of faculty of education in Cambodia derived from the interviews with experts of higher education in Cambodia is shown in Table 4.1.

Table 4.1: Experts' views on dimensions and indicators of quality of faculty of education in Cambodia

Dimensions	Indicators	Expert 1	Expert 2	Expert 3	Expert 4
1. Mission and Strategic Planning	1) Consistency with the institution's mission, faculty's resources, and the needs of national education policy	✓			
	2) Effective strategic plan and key objectives supporting the specified mission	✓			
	3) Action plan development and deployment supporting the stated key objectives	✓			
	4) Modification of mission, key objectives, and action plans based on needs assessment research of the faculty	✓			
	5) Dissemination of faculty's mission, key objectives, and action plans to relevant stakeholders	✓			
2. Management and Good Governance	1) Clear procedure and criteria in selecting faculty's members and administration staff and appropriate staff placement	✓			✓
	2) Commitment, communication, leadership, nationalism, interpersonal skills, and accountability of faculty members and administration staff		✓		✓
	3) Clear management structure and role and duties of faculty members	✓			✓
	4) Clear policy and mechanisms for staff development, promotion, retention, and retirement	✓			
	5) Effective mechanisms for assessing work performance of faculty members and administration staff	✓			
	6) Regular assessment on staff's work performance and constructive feedback	✓			✓
3. Curriculum Design	1) Strong committee of curriculum design and development and role and duties of this committee	✓			✓
	2) Consistency with national education policy and the needs of key communities and society	✓	✓	✓	✓

Table 4.1 (Cont.)

Dimensions	Indicators	Expert 1	Expert 2	Expert 3	Expert 4
	3) Coverage of pedagogy, technology, life and career skills, research skills, international language, and global issues	✓	✓	✓	✓
	4) Specific learning outcome setting for each subject and/or major	✓			
	5) Review and update of curriculum based on the needs of key communities and society, national education policy, and faculty development	✓	✓	✓	✓
	6) Dissemination of curriculum and intended learning outcomes to relevant stakeholders	✓	✓	✓	✓
4. Quality of Academic Staff	1) Clear procedure and criteria for academic staff selection and placement	✓			✓
	2) Clear policy on responsibilities, social engagement, workload, and academic freedom	✓	✓	✓	✓
	3) Sufficient academic staff with suitable degrees, pedagogy, interpersonal skills, international language, nationalism, commitment, self-development, team work, measurement and evaluation skills in place	✓	✓	✓	✓
	4) Effective mechanisms for developing, promoting, and retaining academic staff	✓	✓	✓	✓
	5) Effective mechanisms for assessing academic staff's performance and constructive feedback	✓			✓
	6) Dissemination of the policy and mechanisms to relevant stakeholders	✓			
5. Teaching and Learning and Research Activities	1) Clear policy and effective mechanisms for teaching and learning, research activities, and research publication and dissemination	✓			✓
	2) Clear policy on promoting or awarding academic staff and students in teaching and learning and research	✓			
	3) Teaching and learning based on intended learning outcomes and relevant research studies	✓	✓	✓	✓
	4) Effective research committee or team of reviewer or editors for text book, thesis or dissertation, and research publication	✓			✓
	5) Regular research based on teaching and learning, programs provided, the needs of key communities and society, and faculty development	✓	✓	✓	✓
	6) Effective mechanisms for assessing teaching effectiveness, student achievement, student and teachers satisfaction, and research conducted	✓		✓	

Table 4.1 (Cont.)

Dimensions	Indicators	Expert 1	Expert 2	Expert 3	Expert 4
	7) Regular assessment on teaching effectiveness, student achievement, and research studies with constructive feedback	✓		✓	✓
	8) Dissemination of the policy and mechanisms, student achievement, level of student and teacher satisfaction, and research results to relevant stakeholders	✓		✓	✓
6. Student Admission and Services	1) Clear procedure and criteria for student selection for the teaching profession and scholarship awarding	✓			
	2) Clear policy on students' responsibility, workload, and social engagement	✓			
	3) Counselling service, dormitory, health center or first aid, canteen, and sport complex for students and other customers	✓			
	4) Opportunities for practicums, exchange programs, and other social activities	✓			
	5) Dissemination of the criteria and policy to relevant stakeholders	✓			
7. Learning Resources	1) Appropriate library and laboratory with sufficient documents and facilities for teaching and learning, research, and laboratory activities	✓	✓	✓	✓
	2) Regulation, working hours, and qualified librarians and staff for the library and laboratory	✓			✓
	3) Training on how to use and access available documents and facilities	✓		✓	✓
	4) Management policy and development plan for the library and laboratory	✓	✓		✓
	5) Installment of technology and good internet speed all over the faculty	✓			
	6) Dissemination of the policy, plan for library and laboratory development, and regulation to relevant stakeholders	✓			✓
8. Physical Facilities	1) Sufficient and comfortable classroom, meeting rooms, showrooms, and rest rooms	✓		✓	✓
	2) Clear policy on facility management and maintenance	✓		✓	✓
	3) Regular facility control and update based on faculty development	✓			
	4) Secure building structure and good environment with emergency exits	✓		✓	

Table 4.1 (Cont.)

Dimensions	Indicators	Expert 1	Expert 2	Expert 3	Expert 4
9. Finance	1) Effective financial management and budget planning within the faculty	✓	✓	✓	
	2) Clear policy on financial requests and allocation	✓		✓	
	3) Financial support and allocation for faculty development, teaching and learning, research and publication, social engagement, scholarship awarding, learning resources, facility development, and internal quality assurance	✓	✓	✓	
	4) Regular internal and external audit and financial report within the faculty	✓	✓	✓	
	5) Dissemination of the policy to relevant stakeholders	✓			
10. Internal Quality Assurance System	1) Clear procedure and criteria for selecting members of internal quality assurance unit with role and duties	✓			
	2) Effective mechanisms for assessing faculty performance and educational provision	✓			
	3) Regular training courses or meetings on both internal and external quality assurance for all staff students, and other stakeholders	✓			
	4) Dissemination of assessment results to relevant stakeholders	✓			

4.1.2 Stakeholders' Views on IQA Dimensions and Indicators of Faculty of Education in Cambodia

Four stakeholders of faculty of education in Cambodia were involved with the identification of IQA dimensions and indicators of faculty of education in Cambodia. The four stakeholders were from four different workplaces including Angkor Khemara University, Battambang Regional Teacher Training Center, Bakan Higher School, and Roluos Secondary School.

Based on the collected data during the interviews with stakeholders of faculty of education in Cambodia, the same IQA dimensions were concluded. However, the emphasis upon each IQA dimension was a little different from that of the experts' views. All of the stakeholders put emphasis on management and good governance, curriculum design, and quality of academic staff while the majority mentioned teaching and learning and research, learning resources, and physical facilities. The remaining dimensions were indicated by the minority of stakeholders.

When asked to determine what to do or fulfil in order to attain quality within each IQA dimension, the stakeholders shared important ideas similar to the experts' but they did not focus on some indicators emerging from the experts' views. The missing information were in the IQA dimensions of curriculum design, quality of academic staff, learning resources, and student admission and services. However, the stakeholders imposed a view that the expert did not mentioned during the interview. It was that the faculty of education should organize special trainings on pedagogy for the outsiders wishing to become professional teachers. More information about the stakeholders' views on dimensions and indicators of educational quality of faculty of education in Cambodia is shown in Table 4.2.

Table 4.2: Stakeholders' views on dimensions and indicators of quality of faculty of education in Cambodia

Dimensions	Indicators	Stakeholder 1	Stakeholder 2	Stakeholder 3	Stakeholder 4
1. Mission and Strategic Planning	1) Consistency with the institution's mission, faculty's resources, and the needs of national education policy				✓
	2) Clear and measurable key objectives supporting the specified mission				✓
	3) Action plan development and deployment supporting the stated key objectives				✓
	4) Modification of mission, key objectives, and action plans based on needs assessment research of the faculty				✓
	5) Dissemination of faculty's mission, key objectives, and action plans to relevant stakeholders				✓
2. Management and Good Governance	1) Clear procedure and criteria in selecting faculty's members and administration staff and appropriate staff placement	✓			✓
	2) Commitment, communication, leadership, nationalism, interpersonal skills, and accountability of faculty members and administration staff	✓	✓	✓	✓
	3) Clear management structure and role and duties of faculty members		✓	✓	
	4) Clear policy and mechanisms for staff development, promotion, retention, and retirement		✓		✓
	5) Effective mechanisms for assessing work performance of faculty members and administration staff				✓
	6) Regular assessment on staff's work performance and constructive feedback				✓

Table 4.2 (Cont.)

Dimensions	Indicators	Stakeholder 1	Stakeholder 2	Stakeholder 3	Stakeholder 4
3. Curriculum	1) Strong committee of curriculum design and development and role and duties of this committee				✓
	2) Consistency with national education policy and the needs of key communities and society	✓	✓	✓	✓
	3) Coverage of pedagogy, technology, life and career skills, research skills, international language, and global issues	✓	✓	✓	✓
	4) Special training on pedagogy for those who want to become professional teachers	✓			✓
	5) Review and update of curriculum based on the needs of key communities and society, national education policy, and faculty development	✓	✓	✓	✓
	6) Dissemination of curriculum and intended learning outcomes to relevant stakeholders	✓		✓	✓
4. Academic Staff	1) Clear procedure and criteria for academic staff selection and placement	✓			✓
	2) Clear policy on responsibilities, social engagement, workload, and academic freedom	✓	✓	✓	
	3) Sufficient academic staff with suitable degrees, pedagogy, interpersonal skills, international language, nationalism, commitment, self-development, team work, measurement and evaluation skills in place	✓	✓	✓	✓
	4) Effective mechanisms for developing, promoting, and retaining academic staff	✓	✓	✓	✓
5. Teaching and Learning and Research Activities	1) Clear policy and effective mechanisms for teaching and learning, research activities, and research publication and dissemination	✓			
	2) Clear policy on promoting or awarding academic staff and students in teaching and learning and research	✓	✓		
	3) Teaching and learning based on intended learning outcomes and relevant research studies	✓			✓
	4) Effective research committee or team of reviewer or editors for text book, thesis or dissertation, and research publication	✓	✓		✓
	5) Regular research based on teaching and learning, programs provided, the needs of key communities and society, and faculty development	✓	✓		✓

Table 4.2 (Cont.)

Dimensions	Indicators	Stakeholder 1	Stakeholder 2	Stakeholder 3	Stakeholder 4
	6) Effective mechanisms for assessing teaching effectiveness, student achievement, student and teachers satisfaction, and research conducted	✓			✓
	7) Regular assessment on teaching effectiveness, student achievement, and research studies with constructive feedback	✓			✓
	8) Dissemination of the policy and mechanisms, student achievement, level of student and teacher satisfaction, and research results to relevant stakeholders				✓
6. Student Admission and Services	1) Clear procedure and criteria for student selection for the teaching profession and scholarship awarding				✓
	2) Clear policy on students' responsibility, workload, and social engagement				✓
	3) Counselling service, dormitory, health center or first aid, canteen, and sport complex for students and other customers				✓
	4) Opportunities for practicums, exchange programs, and other social activities				✓
7. Learning Resources	1) Appropriate library and laboratory with sufficient documents and facilities for teaching and learning, research, and laboratory activities	✓		✓	✓
	2) Regulation, working hours, and qualified librarians and staff for the library and laboratory	✓		✓	✓
	3) Training on how to use and access available documents and facilities			✓	✓
	4) Management policy and development plan for the library and laboratory	✓			✓
8. Physical Facilities	1) Sufficient and comfortable classroom, meeting rooms, showrooms, and rest rooms	✓		✓	✓
	2) Clear policy on facility management and maintenance	✓		✓	✓
	3) Regular facility control and update based on faculty development	✓		✓	✓
	4) Secure building structure and good environment	✓		✓	✓
9. Finance	1) Effective financial management and budget planning				✓
	2) Clear policy on financial requests and allocation within the faculty				✓

Table 4.2 (Cont.)

Dimensions	Indicators	Stakeholder 1	Stakeholder 2	Stakeholder 3	Stakeholder 4
	3) Financial support and allocation for faculty development, teaching and learning, research and publication, social engagement, scholarship awarding, learning resources, facility development, and internal quality assurance				✓
	4) Regular internal and external audit and financial report				✓
	5) Dissemination of the policy to relevant stakeholders				✓
10. Internal Quality Assurance System	1) Clear procedure and criteria for selecting members of internal quality assurance unit with role and duties				✓
	2) Effective mechanisms for assessing faculty performance and educational provision				✓
	3) Regular training courses or meetings on both internal and external quality assurance for faculty seniors, administration staff, academic staff, students, and other stakeholders				✓
	4) Dissemination of assessment results to relevant stakeholders				✓

4.1.3 Proposed Model of IQA Indicators of Faculty of Education in Cambodia

To construct IQA indicators of faculty of education in Cambodia, the researcher used dimensions and indicators of quality of higher education from the literature review and the dimensions and indicators of faculty of education in Cambodia from the experts of higher education and stakeholders of faculty of education in Cambodia. The researcher synthesized these dimensions and indicators so that more possible IQA dimensions and indicators would be constructed for faculty of education in Cambodia. As a result, 77 IQA indicators were included into the 22 sub-dimensions of the six dimensions of quality of the faculty. More information on dimensions, sub-dimensions, and the number of indicators of quality of faculty of education in Cambodia is shown in Table 4.3 and 4.4.

Table 4.3: Dimensions and indicators of Quality of faculty of education in Cambodia

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
Dimension 1: Leadership				
1.1 Senior Leadership	1) Vision and value setting and deployment to academic staff, administration staff, students, and other stakeholders	✓		
	2) Behaviors and actions with commitment and accountability towards faculty's mission and objectives and sustainable development	✓		
1.2 Good Governance	1) Effective mechanisms for selecting and nominating faculty seniors and administration staff and clear management structure, regulation, role and duties, and job description for them	✓	✓	
	2) Sufficient faculty seniors and administration staff with consistent degrees and other important qualifications such as leadership, accountability, commitment, nationalism, self-development, intrapersonal and interpersonal skills, international languages, and information technology	✓	✓	
	3) Effective mechanisms for assessing work performance of faculty seniors and administration staff and developing, awarding, and retaining them	✓	✓	
	4) Dissemination of mechanisms for selecting and nominating faculty seniors and administration staff; mechanisms for assessing their work performance and developing, awarding, and retaining them; assessment results on work performance; and regulation, role and duties, and job description to the entire staff, students, and other stakeholders	✓		
1.3 Support for Key Communities and Society	1) Effective mechanisms for developing key communities and society based on faculty's mission and resources	✓		
	2) Regular assessment on the needs of key communities and society, the level of faculty's contribution towards them, and the level of their satisfaction with this contribution	✓		
	3) Dissemination of mechanisms for developing key communities and society and assessment results on their needs, the level of faculty's contribution towards them, and their level of satisfaction with the faculty's contribution to the entire staff, students, and other stakeholders	✓		

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
Dimension 2: Mission, Strategic Planning, and Finance				
2.1 Mission	1) Consistency with the institution's mission, faculty's vision and resources, current national education policy or law, the protection of stakeholder's interests, and regional and global trends	✓	✓	✓
	2) Effective mechanisms for assessing faculty's mission and modifying it based on the assessment result	✓	✓	✓
	3) Dissemination of faculty's mission, mechanisms for assessing and modifying faculty's mission, the accomplishment level of faculty's mission, and the modification result of faculty's mission to the entire staff, students, and other stakeholders	✓	✓	✓
2.2 Strategic Planning	1) Effective mechanisms for developing the strategic plan with key objective of the faculty based on the stated mission and needs assessment research of the faculty	✓	✓	✓
	2) Action plan development and deployment supporting the stated objectives and faculty's resources	✓	✓	✓
	3) Effective mechanisms for assessing the accomplishment level of the strategic plan and action plan for future improvement and implementation	✓		
	4) Dissemination of the strategic plan and action plan, accomplishment level of the strategic and action plans and the results of modification of strategic and action plans to the entire staff, students, and other stakeholders	✓	✓	✓
2.3 Finance	1) Effective financial management system, budget planning, and strong committee for fund raising and new development partners based on faculty's mission and resources	✓	✓	✓
	2) Effective mechanisms for financial requests and allocation	✓	✓	✓
	3) Adequate financial support for teaching and learning, research and publication, scholarship awarding, facility installment and repairs, support of key communities and society, and internal quality assurance process	✓	✓	✓
	4) Fair and accurate financial reports and internal and external audits on the use of finances	✓	✓	✓
	5) Dissemination of mechanisms for financial requests and allocation and the budged approved for each department or division of the faculty to the entire staff, students, and other stakeholders	✓	✓	✓

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
Dimension 3: Educational Programs				
3.1 Curriculum Design	1) Strong committee of curriculum development with clear management structure, regulation, role and duties, and job description for the members of this committee and effective mechanisms for assessing work performance of the committee members and developing, awarding, and retaining them	✓	✓	✓
	2) Curriculum design and development in consistency with current national education policy or law, national framework, faculty's mission, assessment results on the needs of key communities and society, and current trend of education	✓	✓	✓
	3) Coverage of specific content for each program level provided in the faculty and other skills and topics including pedagogy, information technology, technology, educational measurement and evaluation, educational research, life and career skills, learning and innovation skills, interpersonal skills, international language, and global issues		✓	✓
	4) Special training on pedagogy and methods for measurement and evaluation and research in education and others for those who want to become professional teachers, researchers, or other types of educators			✓
	5) Specific learning outcome setting for each subject/course and major within course syllabuses and objectives	✓	✓	
	6) Regular assessment on the accomplishment level of current curriculum for future curriculum update or reform	✓	✓	✓
	7) Effective mechanisms for curriculum review, and update or reform based on faculty development, current national education policy or law, national framework, and the needs of key communities and society, and regional and global trends of education	✓	✓	
	8) Dissemination of the regulation, role and duties, and job description for the members of the committee of curriculum development; current curriculum; student learning outcomes; mechanisms for curriculum design, review, and update or reform; and opportunities for special training to the entire staff, students, and other stakeholders	✓	✓	✓

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
3.2 Teaching and Learning Effectiveness	1) Effective mechanisms for teaching and learning, assignment for each subject/course, thesis or dissertation, and other research activities of academic staff related to teaching and learning	✓	✓	✓
	2) Teaching and learning and assignment for each subject/ course based on student learning outcomes, research results on teaching and learning, and appropriate course length for each program level provided	✓		
	3) Effective mechanisms for assessing teaching effectiveness and the level of students' satisfaction towards the subject or course	✓	✓	✓
	4) Effective mechanisms for promoting or awarding best academic staff and students based on assessment results on teaching, learning, and research	✓	✓	✓
	5) Appropriate library and laboratory with adequate installment of textbooks, reference books, journals, and other supporting documents and facilities; qualified librarians and laboratory staff; and good learning environment with the installment of high technology and good Internet speed	✓	✓	✓
	6) Opportunities for orientation courses for new students, subject/ course orientation at the beginning of the course, seminar or presentation from subject matter experts related to the course being conducted, and teaching practicums in target schools		✓	✓
	7) Effective mechanisms for assessing the needs of job providers of education for the characteristics of prospective teachers or employees within their schools, institutions, colleges, centers, or universities	✓		
	8) Dissemination of mechanisms for teaching and learning, assignment, thesis or dissertation, and research activities; mechanisms for assessing teaching effectiveness and the level of students' satisfaction with the course; student learning outcomes; course syllabuses and objectives; the regulation of the library and laboratory; assessment results on the needs of job providers; and other opportunities supporting teaching and learning and research to the entire staff, students, and other stakeholders	✓	✓	✓

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
3.3 Student Assessment and Improvement	1) Effective mechanisms for assessing student achievements in each subject/course and major and students' behaviors towards future profession of educators based on the intended learning outcomes	✓	✓	✓
	2) Effective mechanisms for improving student learning outcomes for each subject/course and major	✓	✓	✓
	3) Dissemination of mechanisms for assessing and improving student achievements to the entire staff, students, and other stakeholders	✓	✓	✓
3.4 Research and Publication	1) Strong research committee or team of reviewers or editors for textbook, thesis or dissertation, and research publication with clear management structure, regulation, role and duties, and job description for the committee members and effective mechanisms for assessing their work performance and developing, awarding, and retaining them	✓	✓	✓
	2) Research plans and regular research activities about teaching and learning, faculty development, the needs of key communities and society, and regional and global trends of education and development	✓	✓	
	3) Effective mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from conducted research studies	✓		
	4) Specific training courses on new research methodology for academic staff, current students, alumni, and stakeholders	✓		
	5) Dissemination of the regulation, role and duties, and job description for the members of research committee and mechanisms for assessing their work performance and developing, awarding, and retaining them; research plans and previous research studies; training courses on research methodology; and mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from previous research studies to the entire staff, students, and other stakeholders	✓	✓	✓
3.5 Internal Quality Assurance System	1) Strong internal quality assurance unit of the faculty with clear management structure, regulation, role and duties, and job description for the members of the unit and effective mechanisms for assessing their work performance and developing, rewarding, and retaining them	✓	✓	✓

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
	2) Regular training courses or meetings on internal quality assurance for faculty seniors, academic staff, administration staff, students, and other stakeholders	✓	✓	
	3) Assessment plans and effective mechanisms for monitoring, assessing, and enhancing faculty performance, educational activities, and other support services of the faculty based on the stated mission and strategic plan with key objectives of the faculty and national or international quality standards	✓	✓	✓
	4) Dissemination of the regulation, role and duties, and job description for the members of internal quality assurance unit; mechanisms for assessing their work performance and developing, rewarding, and retaining them; plans and mechanisms for assessing and enhancing faculty performance, educational provisions, and support services; opportunities for training or meetings on quality assurance; assessment results; and self-assessment report to the entire staff, students, and other stakeholders	✓	✓	✓
Dimension 4: Quality of Academic Staff				
4.1 Academic Staff Recruitment and Placement	1) Effective mechanisms for recruiting and placing academic staff and specific regulation for them	✓	✓	✓
	2) Sufficient academic staff with consistent degrees, in-depth content knowledge, and other skills in cluding pedagogy, technology, information technology, intrapersonal and interpersonal skills, international languages, nationalism, commitment, self-development, measurement and evaluation skills, and research skills		✓	✓
	3) Dissemination of mechanisms for recruiting and placing academic staff; specific regulation; and qualification of academic staff to the entire staff, students, and other stakeholders	✓	✓	✓
4.2 Academic Staff Environment and Development	1) Comfortable and secure workplace with easy access for academic staff	✓		
	2) Effective mechanisms for assessing academic staff's capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff	✓	✓	✓

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
	3) Dissemination of mechanisms for assessing capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff to the entire staff, students, and other stakeholders	✓	✓	✓
4.3 Academic Staff Engagement	1) Clear policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement	✓		
	2) Effective mechanisms for assessing the level of engagement of academic staff	✓	✓	✓
	3) Dissemination of the policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement and the level of their engagement to the entire staff, students, and other stakeholders	✓	✓	✓
Dimension 5: Customers and Support Services				
5.1 Student Admission	1) Effective mechanisms for student selection and enrollment based on faculty's mission, resources, and programs and other important characteristics for the profession of teachers, educational researchers, or other educators		✓	
	2) Dissemination of mechanisms and criteria for student selection and enrollment to the entire staff, current students, high school students and other stakeholders	✓	✓	
5.2 Scholarship and Tuition Fee	1) Effective mechanisms for scholarship awarding and tuition fee setting based on faculty's mission and resources	✓	✓	
	2) Dissemination of scholarship awarding policy, scholarship grantees, and current tuition fee to the entire staff, students, and other stakeholders	✓	✓	
5.3 Student Engagement and Services	1) Specific regulation of students' workload and rights and responsibilities for both academic and social engagement	✓	✓	
	2) Counselling services for academic and research performance; opportunities for practicums, exchange programs, and social activities; other services including dormitory, health center or first aid, canteen, sport complex, and hall for cultural activities or entertainment; and specific regulation for these services	✓	✓	✓
	3) Effective mechanisms for assessing the effectiveness of counselling services; practicums, exchange programs, and other social activities; and the level of student satisfaction with these services	✓		

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
	4) Dissemination of regulation for students; counselling services, opportunities for practicums, exchange programs, social activities, other services, and the regulation for these services; the mechanisms for assessing the effectiveness of all services and the satisfaction level of students with these services; and assessment results to the entire staff, students, and other stakeholders	✓	✓	✓
5.4 Voices of the Customer	1) Effective mechanisms for gathering information from potential students, alumni, other customers, and competitors' students for actionable information and feedback on the quality of educational programs	✓		
	2) Effective mechanisms for solving students' complaints and other customers' problems and building good relationship with students, alumni, and other customers and stakeholder	✓		
	3) Dissemination of the mechanisms for collecting information, managing complaints, and building good relationship to the entire staff, students, and other stakeholders	✓		
5.5 Information System	1) Effective information system for storing and releasing all information about current curriculum, curriculum update, student population, the satisfaction level of students and other stakeholders, employability rate of graduates, research plans, job opportunities, faculty development plan, opportunities for practicums and exchange programs, and assessment results	✓		
	2) Specific regulation for staff responsible for the information system and those who access or download data or documents	✓		
	3) Dissemination of the regulation for monitoring and managing the information system and accessing and downloading data to the entire staff, students, and other stakeholders	✓		
Dimension 6: Physical Facilities				
6.1 Adequacy and Security Facilities	1) Sufficient buildings, classrooms, meeting rooms, offices, rest rooms, parking lot, and sport complex with suitable telecommunication facilities, emergency exit, and secure-based design	✓	✓	✓
6.2 Facility Update	1) Regular check and addition of physical facilities for teaching and learning, research, health care, entertainment, and other uses of the faculty	✓	✓	✓

Table 4.3 (Cont.)

Dimensions/ Sub-dimensions	Indicators	Literature	Experts	Stakeholders
6.3 Facility Management and Maintenance	1) Effective mechanisms for facility management and maintenance and specific plan for physical facility expansion	✓	✓	✓
	2) Regular check and repairs of physical facility for good process of teaching and learning, research activities, office work process, and other services provision within the faculty	✓		
	3) Dissemination of mechanisms for facility management and maintenance and specific plan for physical facility expansion to the entire staff, students, and other stakeholders	✓		

Table 4.4: Dimensions, sub-dimensions, and the number of indicators of quality of faculty of education in Cambodia

Dimensions	Sub-Dimensions	Number of Indicators
1. Leadership	1.1 Senior leadership	2
	1.2 Good governance	4
	1.3 Support for key communities and society	3
2. Mission, Strategic Planning, and Finance	2.1 Mission	3
	2.2 Strategic planning	4
	2.3 Finance	5
3. Educational Programs	3.1 Curriculum design	8
	3.2 Teaching and learning effectiveness	8
	3.3 Student assessment and improvement	3
	3.4 Research and publication	5
	3.5 Internal quality assurance system	4
4. Quality of Academic Staff	4.1 Academic staff recruitment and placement	3
	4.2 Academic staff environment and development	3
	4.3 Academic staff engagement	3
5. Customers and Support Services	5.1 Student admission	2
	5.2 Scholarship and tuition fee	2
	5.3 Student engagement and services	4
	5.4 Voices of the customer	3
	5.5 Information system	3
6. Physical Facilities	6.1 Adequacy and security of facilities	1
	6.2 Facility update	1
	6.3 Facility management and maintenance	3
	Total	**77**

4.1.4 Verification of the Fit of Model of IQA Indicators of Faculty of Education in Cambodia

To make it easier to understand the CFA results, the researcher used abbreviated words for dimensions and sub-dimensions of educational quality of faculty of education in Cambodia as follows:

EQFEC	refers to	educational quality of faculty of education in Cambodia.
LEAD.SHI	refers to	leadership of faculty of education in Cambodia.
SL	refers to	senior leadership.
GG	refers to	good governance.
SKCS	refers to	support for key communities and society.
MSPF	refers to	mission, strategic planning, and finance of faculty of education in Cambodia.
MIS	refers to	mission.
SP	refers to	strategic planning.
FIN	refers to	finance.
EDU.PRO	refers to	educational programs of faculty of education in Cambodia.
CD	refers to	curriculum design.
TLE	refers to	teaching and learning effectiveness.
SAI	refers to	student assessment and improvement.
RP	refers to	research and publication.
IQAS	refers to	internal quality assurance system.
QAS	refers to	quality of academic staff of faculty of education in Cambodia.
ASRP	refers to	academic staff recruitment and placement.
ASED	refers to	academic staff environment and development.
ASE	refers to	academic staff engagement.
CSS	refers to	customers and support services of faculty of education in Cambodia.
SA	refers to	student admission.
STF	refers to	scholarship and tuition fee.
SES	refers to	student engagement and services.
VC	refers to	voices of the customer.

IS refers to information system.

PH.FA refers to physical facilities of faculty of education in Cambodia.

ASF refers to adequacy and security of facilities.

FU refers to facility update.

FMM refers to facility management and maintenance.

Prior to presenting the verification result of the fit of the model of IQA indicators of faculty of education in Cambodia, the demographic information of the respondents of the research study will be presented in Table 4.5.

Table 4.5: Frequency and percentage of respondents in terms of sex, age range, degree level, and type of HEI

Sex/Age Range/Degree Level/Type of HEI		Number of Respondents/%			Total
		Administration Staff	Academic Staff	Students	
Sex	Male	38 (04.75)	67 (08.38)	333 (41.12)	438 (54.75)
	Female	14 (01.75)	33 (04.12)	315 (39.38)	362 (45.25)
	Total	52 (06.50)	100 (12.50)	648 (81.00)	800 (100.00)
Age Range	Under 30	16 (02.00)	19 (02.38)	648 (80.75)	681 (85.13)
	30-39	28 (03.50)	62 (07.75)	02 (00.25)	92 (11.50)
	40-49	06 (00.75)	17 (02.12)	00 (00.00)	23 (02.87)
	50-59	02 (00.25)	02 (00.25)	00 (00.00)	04 (00.50)
	Total	52 (06.50)	100 (12.50)	648 (81.00)	800 (100.00)
Degree Level	Associate	00 (00.00)	00 (00.00)	285 (35.62)	285 (35.62)
	Bachelor	22 (02.75)	38 (04.75)	298 (37.25)	358 (44.75)
	Master	30 (03.75)	54 (06.75)	65 (08.13)	149 (18.63)
	Doctor	00 (00.00)	08 (01.00)	00 (00.00)	08 (01.00)
	Total	52 (06.50)	100 (12.50)	648 (81.00)	800 (100.00)
Type of HEI	Public HEI	23 (02.88)	62 (07.75)	413 (51.62)	498 (62.25)
	Private HEI	29 (02.62)	38 (04.75)	235 (29.38)	302 (37.75)
	Total	52 (06.50)	100 (12.50)	648 (81.00)	800 (100.00)

According to Table 4.5, students accounted for the majority of respondents (648, 80.75%). The table shows that most of the respondents of the research study were male (438, 54.75%), especially among administration and academic staff. However, among students, both males and female were nearly equal in number. The table also indicates that most of these respondents were under 30 (681, 85.13%), but most of the administration staff and academic staff were between 30 and 39. In terms of degree levels, most of the administration and academic staff had a master degree while the majority of students were studying for a bachelor degree and an associate degree. The result also indicates that the majority of the respondents were from public HEIs (498, 62.25%) but the number of administration staff from public HEIs was nearly equal to that of administration staff from private HEIs.

In order to verify the fit of the model of IQA indicators of faculty of education in Cambodia, the CFA was conducted to see whether the model paralleled the empirical data collected from the 800 respondents. Table 4.6 will present the results of the CFA and the mean, standard deviation, Pearson correlation coefficient of the dimensions and sub-dimensions, and the CFA output will be attached in Appendix A and B.

According to Table 4.6, the model of IQA indicators of faculty of education in Cambodia fitted the empirical data with a chi-square of 162.120 on 160 degrees of freedom and a p-value of 0.438, a goodness of fit index (GFI) of 0.982, an adjusted goodness of fit index (AGFI) of 0.971, and a standardized root mean square residual (Standardized RMR) of 0.023.

The results indicated that the six dimensions were important to ensure quality of faculty of education in Cambodia as their factor loadings were statistically significant at the .01 level with the range from 0.578 to 0.939. The dimension with the highest factor loading was quality of academic staff (QAS), followed by educational programs (EDU.PRO); customers and support services (CSS); mission, strategic planning, and finance (MSPF); physical facilities (PH.FA); and leadership (LEAD.SHI) with the lowest factor loading. These dimensions shared covariance with educational quality of faculty of education in Cambodia (EQFEC) at the level of 88.10%, 82.10%, 76.10%, 47.00%, 35.80%, 33.40%, respectively.

The results also showed that the 22 sub-dimensions were important to ensure quality in the six dimensions in that their factor loadings were statistically significant

at the .01 level with the range from 0.557 to 0.755. The highest factor loading fell on finance (FIN), followed by academic staff environment and development (ASED) and research and publication (RP). The lowest factor loading came to facility management and maintenance (FMM).

Considering the interrelationship among the six dimensions and educational quality of faculty of education in Cambodia, they were positively correlated with each other with the correlation coefficient ranging from o.346 to 0.939.

Using the factor score of each sub-dimension of the six dimensions of quality, an equation for factor scale of the model of IQA indicators of faculty of education in Cambodia was constructed as follows:

$$\begin{aligned} EQFEC = {} & 0.697(SL) + 1.085(GG) + 1.131(SKCS) + 0.717(MIS) \\ & + 0.741(SP) + 1.335(FIN) + 0.152(CD) + 0.591(TLE) \\ & + 0.517(SAI) + 0.433(RP) + 0.607(IQAS) + 0.467(ASRP) \\ & + 0.554(ASED) + 0.403(ASE) + 0.463(SA) + 0.285(STF) \\ & + 0.457(SES) + 0.320(VC) + 0.357(IS) + 0.688(ASF) \\ & + 0.373(FU) + 0.356(FMM) \end{aligned}$$

Table 4.6: CFA results of the model of IQA indicators of faculty of education in Cambodia

Variable	Factor Loading		t	R^2	Factor Score
	b(SE)	β			
FIRST ORDER CFA					
Leadership (LEAD.SHI)					
SL	0.312	0.585	<--->	0.343	0.697
GG	0.269(0.029)	0.646	9.147**	0.417	1.085
SKCS	0.321(0.030)	0.669	10.797**	0.447	1.131
Mission, strategic planning, and finance (MSPF)					
MIS	0.292	0.621		0.386	0.717
SP	0.282(0.018)	0.642	15.463**	0.412	0.741
FIN	0.309(0.025)	0.755	12.378**	0.570	1.335
Educational programs (EDU.PRO)					
CD	0.210	0.590	<--->	0.348	0.152
TLE	0.260(0.015)	0.730	17.635**	0.532	0.591
SAI	0.333(0.022)	0.728	15.231**	0.530	0.517
RP	0.293(0.019)	0.734	15.723**	0.539	0.433
IQAS	0.308(0.021)	0.714	14.834**	0.510	0.607
Quality of academic staff (QAS)					
ASRP	0.320	0.701	<--->	0.492	0.467
ASED	0.333(0.018)	0.741	18.116**	0.548	0.554
ASE	0.317(0.018)	0.698	17.189**	0.488	0.403
Customers and support services (CSS)					
SA	0.346	0.669	<--->	0.447	0.463
STF	0.321(0.023)	0.625	14.176**	0.391	0.285
SES	0.289(0.019)	0.696	15.476**	0.484	0.457
VC	0.280(0.020)	0.606	13.684**	0.367	0.320
IS	0.278(0.020)	0.620	13.604**	0.385	0.357
Physical facilities (PH.FA)					
ASF	0.417	0.659	<--->	0.434	0.688
FU	0.390(0.043)	0.594	9.102**	0.352	0.373
FMM	0.320(0.036)	0.557	8.805**	0.310	0.356
SECOND ORDER CFA					
Educational quality of faculty of education in Cambodia (EQFEC)					
LEA.SHI	0.578(0.056)	0.578	10.330**	0.334	
MSPF	0.686(0.055)	0.686	12.455**	0.470	
EDU.PRO	0.906(0.057)	0.906	15.938**	0.821	
QAS	0.939(0.048)	0.939	19.560**	0.881	
CSS	0.872(0.050)	0.872	17.316**	0.760	
PH.FA	0.599(0.056)	0.599	10.634**	0.358	
Chi-square = 162.120	df = 160		P = 0.438		
GFI = 0.982	AGFI = 0.971		RMR = 0.023		

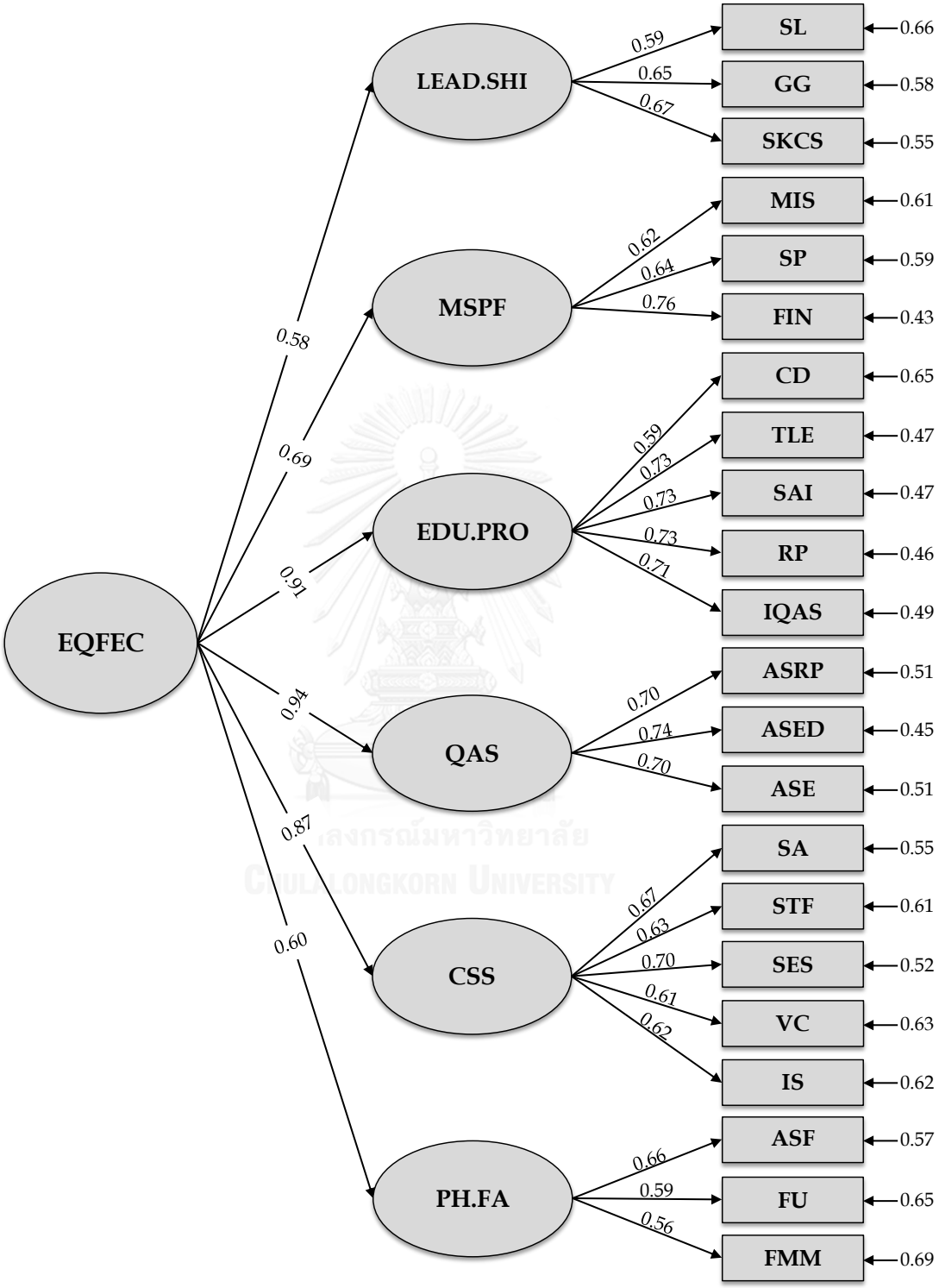
Correlation matrix of latent variables

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA	EQFEC
LEA.SHI	1.000						
MSPF	0.396	1.000					
EDU.PRO	0.524	0.621	1.000				
QAS	0.543	0.644	0.850	1.000			
CSS	0.504	0.598	0.790	0.818	1.000		
PH.FA	0.346	0.410	0.542	0.562	0.522	1.000	
EQFEC	0.578	0.686	0.906	0.939	0.872	0.599	1.000

Note: **p<.01

<---> Constrained parameter

Figure 4.1: Model of IQA indicators of faculty of education in Cambodia



4.2 Validation of Model of IQA Indicators of Faculty of Education in Cambodia

The validation of the model of IQA indicators of faculty of education in Cambodia was performed through the focus group of 11 participants who were practitioners from faculty of education in Cambodia. The validation result falls into two parts including evaluation and discussion results of IQA indicators of faculty of education in Cambodia.

4.2.1 Evaluation Results on IQA Indicators of Faculty of Education in Cambodia

The model of IQA indicators of faculty of education in Cambodia was assessed through the four evaluation standards including the utility standard, feasibility standard, propriety standard, and accuracy standard. The validation results of IQA indicators by sub-dimension will be presented from Table 4.7 to 4.28.

Table 4.7: Means and standard deviations of IQA indicators in senior leadership

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Vision and value setting and deployment	4.818	0.273	4.455	0.342	4.818	0.405	4.758	0.336
2. Behavior and actions towards the stated vision and value	4.788	0.225	4.242	0.496	4.818	0.405	4.758	0.336

The table indicates that both indicators in the sub-dimension of senior leadership were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores of 4.788 and 4.818. The table also shows that both indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, both indicators would be achieved at the high level with the mean scores of 4.242 and 4.455.

Table 4.8: Means and standard deviations of IQA indicators in good governance

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Transparent staff selection and placement, job description, and regulation	4.818	0.229	4.667	0.471	4.818	0.405	4.758	0.336
2. Sufficient staff with consistent degrees and skills	4.758	0.368	4.364	0.277	4.818	0.405	4.758	0.336
3. Mechanisms for assessing their work performance and capacity and developing and awarding	4.758	0.518	4.242	0.302	4.818	0.405	4.758	0.336
4. Dissemination of the above mechanisms, assessment results, regulation, and job description	4.667	0.298	4.546	0.429	4.818	0.405	4.758	0.336

The table shows that all the indicators in the sub-dimension of good governance were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.667 to 4.818. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that all of the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 1 and 4 would be achieved at the highest level with the mean scores of 4.546 and 4.667 while the other two would be achieved at the high level with the mean scores of 4.242 and 4.364.

Table 4.9: Means and standard deviations of IQA indicators in support for key communities and society

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for developing key communities and society	4.758	0.216	4.546	0.342	4.818	0.405	4.758	0.336
2. Assessment on their needs and satisfaction level and the level of accomplishment of the support service	4.697	0.433	4.333	0.333	4.818	0.405	4.758	0.336
3. Dissemination of the above mechanisms and assessment results	4.546	0.308	4.576	0.539	4.818	0.405	4.758	0.336

According to Table 4.9, all the indicators in the sub-dimension of support for key communities and society were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.546 to 4.758. The table also shows that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 1 and 3 would be achieved at the highest level with the mean scores of 4.546 and 4.576 while the other one would be achieved at the high level with the mean score of 4.333.

Table 4.10: Means and standard deviations of IQA indicators in mission

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Consistency with the faculty's vision and resources, national and international policies, and stakeholders' interests	4.879	0.270	4.455	0.342	4.818	0.405	4.758	0.336
2. Mechanisms for assessing and modifying the mission	4.849	0.229	4.182	0.456	4.818	0.405	4.758	0.336
3. Dissemination of the mission, mechanisms, and level of mission accomplishment	4.546	0.308	4.636	0.348	4.818	0.405	4.758	0.336

The table indicates that all the indicators in the sub-dimension of mission were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.546 to 4.879. The table also shows that the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 3 would be achieved at the highest level with the mean score of 4.636 while the other two would be achieved at the high level with the mean scores of 4.182 and 4.455.

Table 4.11: Means and standard deviations of IQA indicators in strategic planning

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for developing a strategic plan and objectives	4.818	0.273	4.515	0.345	4.818	0.405	4.758	0.336
2. Development and deployment of action plan	4.879	0.168	4.424	0.336	4.818	0.405	4.758	0.336
3. Mechanisms for assessing the strategic plan and action plan	4.939	0.135	4.273	0.389	4.818	0.405	4.758	0.336
4. Dissemination of the strategic plan and action plan and assessment results	4.515	0.273	4.636	0.433	4.818	0.405	4.758	0.336

The table shows that all the indicators in the sub-dimension of strategic planning were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.515 to 4.939. The table also indicates that the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that all of the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 1 and 4 would be achieved at the highest level with the mean scores of 4.515 and 4.636 while the other two would be achieved at the high level with the mean scores of 4.273 and 4.424.

Table 4.12: Means and standard deviations of IQA indicators in finance

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Financial management system, budget planning, and committee for fund raising and new development partners	4.849	0.229	4.394	0.389	4.818	0.405	4.758	0.336
2. Mechanisms for financial request and allocation	4.788	0.308	4.333	0.494	4.818	0.405	4.758	0.336
3. Adequate financial support for the needs of the faculty	4.939	0.135	4.212	0.501	4.818	0.405	4.758	0.336
4. Fair financial reports and internal and external audits	4.667	0.298	4.424	0.449	4.818	0.405	4.758	0.336
5. Dissemination of the above mechanisms and the budget approved	4.515	0.503	4.697	0.482	4.818	0.405	4.758	0.336

According to Table 4.12, all the indicators in the sub-dimension of finance were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.515 to 4.939. The table also shows that the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 5 would be achieved at the highest level with the mean score of 4.697 while the other four would be achieved at the high level with the mean scores ranging from 4.212 to 4.424.

Table 4.13: Means and standard deviations of IQA indicators in curriculum design

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Curriculum development committee, job description, regulation, and mechanisms for assessing their work performance and developing and awarding them	4.849	0.229	4.333	0.447	4.818	0.405	4.758	0.336
2. Consistency with national and international policies and the needs of key communities and society	4.879	0.225	4.364	0.379	4.818	0.405	4.758	0.336
3. Coverage of technology, pedagogy, content knowledge, and other necessary skills for teaching career	4.849	0.273	4.394	0.360	4.818	0.405	4.758	0.336
4. Training courses on pedagogy and other necessary skills for teaching career for the outsiders	4.849	0.229	4.485	0.273	4.818	0.405	4.758	0.336
5. Learning outcome setting for each subject/course	4.849	0.229	4.394	0.327	4.818	0.405	4.758	0.336
6. Assessment on the level of accomplishment of curriculum implementation	4.818	0.229	4.303	0.315	4.818	0.405	4.758	0.336
7. Mechanisms for curriculum review and update or reform	4.788	0.342	4.546	0.308	4.818	0.405	4.758	0.336
8. Dissemination of the above mechanisms, current curriculum, the intended learning outcomes, pedagogy training course, regulation, and job description	4.636	0.277	4.697	0.379	4.818	0.405	4.758	0.336

According to Table 4.13, all the indicators in the sub-dimension of curriculum design were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.636 to 4.879. The table also shows that the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that all of the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 7 and 8 would be achieved at the highest level with the mean scores of 4.546 and 4.697 while the other six would be achieved at the high level with the mean scores ranging from 4.303 to 4.485.

Table 4.14: Means and standard deviations of IQA indicators in teaching and learning effectiveness

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for teaching and learning, assignment, thesis or dissertation, and research	4.818	0.273	4.394	0.327	4.818	0.405	4.758	0.336
2. Teaching and learning based on the intended learning outcomes, course lengths, and research results	4.909	0.156	4.333	0.258	4.818	0.405	4.758	0.336
3. Mechanisms for assessing teaching effectiveness and the level of students' satisfaction	4.909	0.216	4.303	0.407	4.818	0.405	4.758	0.336
4. Mechanisms for awarding best academic staff and students	4.879	0.168	4.546	0.454	4.818	0.405	4.758	0.336
5. Appropriate library and/or laboratory with qualified staff and sufficient documents and facilities	4.849	0.174	4.364	0.407	4.818	0.405	4.758	0.336
6. Course orientation, seminar or presentation, and teaching practicums	4.758	0.216	4.546	0.270	4.818	0.405	4.758	0.336
7. Mechanism for assessing the needs of job providers	4.727	0.327	4.152	0.503	4.818	0.405	4.758	0.336
8. Dissemination of the above mechanisms, assessment results, and other supporting activities	4.705	0.345	4.667	0.494	4.818	0.405	4.758	0.336

According to Table 4.14, all the indicators in the sub-dimension of teaching and learning effectiveness were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.705 to 4.909. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 4, 6, and 8 would be achieved at the highest level with the mean scores ranging from 4.546 to 4.667 while the other five would be achieved at the high level with the mean scores ranging from 4.152 to 4.394.

Table 4.15: Means and standard deviations of IQA indicators in student assessment and improvement

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for assessing student achievement and their behavior towards the teaching profession	4.879	0.225	4.485	0.456	4.818	0.405	4.758	0.336
2. Mechanisms for improving student learning outcome	4.727	0.250	4.455	0.373	4.818	0.405	4.758	0.336
3. Dissemination of the above mechanisms	4.576	0.368	4.727	0.201	4.818	0.405	4.758	0.336

The table shows that all the indicators in the sub-dimension of student assessment and improvement were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.576 to 4.879. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 3 would be achieved at the highest level with the mean score of 4.727 while the other two would be achieved at the high level with the mean scores of 4.485 and 4.455.

Table 4.16: Means and standard deviations of IQA indicators in research and publication

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Research committee or team of reviewers or editors, job description, regulation, and mechanisms for assessing their work performance, and developing and awarding them	4.788	0.308	4.333	0.365	4.818	0.405	4.758	0.336
2. Research plans and regular research on teaching and learning, faculty development, the needs of key communities and society	4.818	0.273	4.333	0.365	4.818	0.405	4.758	0.336
3. Mechanisms for proposing and conducting research, checking and editing research report and new textbooks, and managing new knowledge	4.788	0.270	4.273	0.250	4.818	0.405	4.758	0.336
4. Training courses on new research methodology	4.849	0.229	4.424	0.216	4.818	0.405	4.758	0.336
5. Dissemination of the above mechanisms, research plans and results, training courses on research methodology, regulation, and job description	4.636	0.315	4.667	0.333	4.818	0.405	4.758	0.336

The table shows that all of the indicators in the sub-dimension of research and publication were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.636 to 4.849. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 5 would be achieved at the highest level with the mean score of 4.667 while the other four would be achieved at the high level with the mean scores ranging from 4.273 to 4.424.

Table 4.17: Means and standard deviations of IQA indicators in internal quality assurance system

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Internal quality assurance unit, job description, regulation, and mechanisms for assessing their work performance and developing and awarding them	4.788	0.270	4.394	0.250	4.818	0.405	4.758	0.336
2. Training courses or meetings on internal and external quality assurance concepts and processes	4.727	0.360	4.424	0.302	4.818	0.405	4.758	0.336
3. Mechanisms for monitoring and assessing faculty performance, educational activities, and other support services	4.849	0.229	4.394	0.360	4.818	0.405	4.758	0.336
4. Dissemination of the above mechanisms, assessment results, training courses on quality assurance, regulation, and job description	4.667	0.258	4.697	0.348	4.818	0.405	4.758	0.336

The table shows that all the indicators in the sub-dimension of internal quality assurance system were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.667 to 4.849. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 4 would be achieved at the highest level with the mean score of 4.697 while the other three would be achieved at the high level with the mean scores ranging from 4.394 to 4.424.

Table 4.18: Means and standard deviations of IQA indicators in academic staff recruitment and placement

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for recruiting and placing academic staff and regulation	4.758	0.336	4.546	0.429	4.818	0.405	4.758	0.336
2. Sufficient academic staff with consistent degrees, skills, and other qualifications for teaching profession	4.818	0.229	4.333	0.365	4.818	0.405	4.758	0.336
3. Dissemination of the above mechanisms and regulation	4.636	0.348	4.758	0.262	4.818	0.405	4.758	0.336

The table indicates that all the indicators in the sub-dimension of academic staff recruitment and placement were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.636 to 4.818. The table also shows that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 1 and 3 would be achieved at the highest level with the mean scores of 4.546 and 4.758 while the other one would be achieved at the high level with the mean score of 4.333.

Table 4.19: Means and standard deviations of IQA indicators in academic staff environment and development

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Comfort and secure workplace with easy access for academic staff	4.636	0.234	4.424	0.336	4.818	0.405	4.758	0.336
2. Mechanisms for assessing the capacity needs of academic staff and developing and awarding them	4.879	0.168	4.242	0.368	4.818	0.405	4.758	0.336
3. Dissemination of the above mechanisms	4.667	0.298	4.636	0.433	4.818	0.405	4.758	0.336

According to Table 4.19, all of the indicators in the sub-dimension of academic staff environment and development were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.636 to 4.879. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 3 would be achieved at the highest level with the mean score of 4.636 while the other two would be achieved at the high level with the mean scores of 4.242 and 4.424.

Table 4.20: Means and standard deviations of IQA indicators in academic staff engagement

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Policy on academic staff's workload, freedom, and responsibilities	4.788	0.270	4.606	0.327	4.818	0.405	4.758	0.336
2. Mechanisms for assessing the level of engagement of academic staff	4.849	0.229	4.364	0.348	4.818	0.405	4.758	0.336
3. Dissemination of the policy and the assessment results	4.667	0.333	4.697	0.348	4.818	0.405	4.758	0.336

The table shows that all of the indicators in the sub-dimension of academic staff engagement were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.667 to 4.849. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 1 and 3 would be achieved at the highest level with the mean scores of 4.606 and 4.697 while the other one would be achieved at the high level with the mean score of 4.364.

Table 4.21: Means and standard deviations of IQA indicators in student admission

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for selecting students for the teaching profession	4.667	0.365	4.424	0.302	4.818	0.405	4.758	0.336
2. Dissemination of the above mechanisms	4.515	0.311	4.788	0.225	4.818	0.405	4.758	0.336

The table shows that both indicators in the sub-dimension of student admission were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores of 4.515 and 4.667. The table also indicates that both indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 2 would be achieved at the highest level with the mean score of 4.788 while the other one would be achieved at the high level with the mean score of 4.424.

Table 4.22: Means and standard deviations of IQA indicators in scholarship and tuition fee

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for awarding scholarship and setting tuition fee	4.546	0.429	4.303	0.407	4.818	0.405	4.758	0.336
2. Dissemination of the above mechanisms	4.636	0.407	4.697	0.505	4.818	0.405	4.758	0.336

The table shows that both indicators in the sub-dimension of scholarship and tuition fee were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores of 4.546 and 4.636. The table also indicates that both indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 2 would be achieved at the highest level with the mean score of 4.697 while the other one would be achieved at the high level with the mean score of 4.303.

Table 4.23: Means and standard deviations of IQA indicators in student engagement and services

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Policy on students' workload and rights and responsibilities	4.697	0.407	4.455	0.402	4.818	0.405	4.758	0.336
2. Counselling services, teaching practicums, exchange programs, social activities, and other support services	4.788	0.308	4.303	0.315	4.818	0.405	4.758	0.336
3. Mechanisms for assessing the above services and the level of students' satisfaction towards such services	4.939	0.135	4.333	0.365	4.818	0.405	4.758	0.336
4. Dissemination of the above mechanisms, support services, and assessment results	4.606	0.291	4.727	0.327	4.818	0.405	4.758	0.336

The table shows that all the indicators in the sub-dimension of student engagement and services were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.606 to 4.939. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 4 would be achieved at the highest level with the mean score of 4.727 while the other three would be achieved at the high level with the mean scores ranging from 4.303 to 4.455.

Table 4.24: Means and standard deviations of IQA indicators in voices of the customer

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for gathering all kind of actionable information and feedback	4.788	0.308	4.273	0.250	4.818	0.405	4.758	0.336
2. Mechanisms for solving problems and building good relationship with students and other customers	4.879	0.225	4.212	0.342	4.818	0.405	4.758	0.336
3. Dissemination of the above mechanisms	4.576	0.302	4.727	0.327	4.818	0.405	4.758	0.336

According to Table 4.24, all the indicators in the sub-dimension of voices of the customer were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.576 to 4.879. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 3 would be achieved at the highest level with the mean score of 4.727 while the other two would be achieved at the high level with the mean scores of 4.273 and 4.212.

Table 4.25: Means and standard deviations of IQA indicators in information system

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Information system for storing and releasing all information of the faculty	4.758	0.302	4.424	0.368	4.818	0.405	4.758	0.336
2. Regulation for staff of the information system and those accessing or downloading the data or documents	4.849	0.229	4.727	0.360	4.818	0.405	4.758	0.336
3. Dissemination of the above regulation	4.727	0.291	4.758	0.302	4.818	0.405	4.758	0.336

The table shows that all the indicators in the sub-dimension of information system were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.727 to 4.849. The table also indicates that the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that all of the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 2 and 3 would be achieved at the highest level with the mean scores of 4.727 and 4.758 while the other one would be achieved at the high level with the mean score of 4.424.

Table 4.26: Means and standard deviations of IQA indicators in adequacy and security of facilities

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Sufficient building, classrooms, meeting rooms, offices, restrooms, parking lot, and sport complex with suitable telecommunication facilities, emergency exit, and secure-based design	4.727	0.201	4.182	0.405	4.818	0.405	4.758	0.336

The table indicates that the only indicator in the sub-dimension of adequacy and security of facilities was able to strongly reflect the needs of faculty of education in Cambodia with the mean score of 4.727. The table also shows that the indicator provided the highest respect and attention for the faculty with the mean score of 4.818, and that the indicator was constructed with the highly reliable sources, techniques, and procedures with the mean score of 4.758. In real practice for the faculty, the indicator would be achieved at the high level with the mean score of 4.182.

Table 4.27: Means and standard deviations of IQA indicators in facility update

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Regular check and addition of physical facilities for teaching and learning, research, health care, entertainment, and other uses of the faulty	4.818	0.229	4.394	0.389	4.818	0.405	4.758	0.336

The table indicates that the only indicator in the sub-dimension of facility update was able to strongly reflect the needs of faculty of education in Cambodia with the mean score of 4.818. The table also shows that the indicator provided the highest respect and attention for the faculty with the mean score of 4.818, and that the indicator was constructed with the highly reliable sources, techniques, and procedures with the mean score of 4.758. In real practice for the faculty, the indicator would be achieved at the high level with the mean score of 4.394.

Table 4.28: Means and standard deviations of IQA indicators in facility management and maintenance

IQA Indicators	Utility Standard		Feasibility Standard		Propriety Standard		Accuracy Standard	
	M	SD	M	SD	M	SD	M	SD
1. Mechanisms for managing and maintaining physical facilities and plan for expansion	4.667	0.258	4.606	0.327	4.818	0.405	4.758	0.336
2. Regular check and repairs of physical facilities	4.758	0.262	4.394	0.327	4.818	0.405	4.758	0.336
3. Dissemination of the above mechanisms	4.606	0.360	4.636	0.458	4.818	0.405	4.758	0.336

The table shows all the indicators in the sub-dimension of facility management and maintenance were able to strongly reflect the needs of faculty of education in Cambodia with the mean scores ranging from 4.606 to 4.758. The table also indicates that all the indicators provided the highest respect and attention for the faculty with the same mean score of 4.818, and that the indicators were constructed with the highly reliable sources, techniques, and procedures with the same mean score of 4.758. In real practice for the faculty, Indicator 1 and 3 would be achieved at the highest level with the mean scores of 4.606 and 4.636 while the other one would be achieved at the high level with the mean score of 4.394.

4.2.2 Description of IQA Indicators of Faculty of Education in Cambodia

During the focus group, besides evaluating each IQA indicator the researcher and participants further described the model of IQA indicators of faculty of education in Cambodia in order that they would be easier to understand and use. When asked to describe the IQA indicators, most of the participants suggested identifying who could join in setting the faculty's vision, values, mission, strategic planning, key objectives, action plan, and other policies and mechanisms. They responded that many kinds of stakeholders would be involved with these including the institution's management team, faculty seniors, administration staff, academic staff, students and their parents, alumni, key communities and society, the MoEYS, faculty's consultants and/or donors, job providers, and representatives from the RGC but not all of them could attend all the activities. They added that the faculty should limit the information dissemination in that some policies or mechanisms should be disseminated to only necessary or potential

stakeholders. For example, general students should not know the faculty's financial status, teacher regulation, or strategic plan as the higher education sector in Cambodia has been more and more competitive. Table 4.29 will present the information about the IQA indicator description.

Table 4.29: Description of IQA indicators of faculty of education in Cambodia

Dimensions/ Sub-Dimensions	Indicator Description
Dimension 1: Leadership In response to educational quality assurance, faculty of education should seriously consider and take care of management, communication, and cooperation both inside and outside the faculty. In this sense, the faculty should ensure senior leadership, good governance, and support for key communities and society.	
1.1 Senior Leadership	*Faculty seniors should:* 1) Collaborate with administration staff, academic staff, students, alumni, and other potential stakeholders in order to set a clear vision and values for the faculty. The vision and values should respond to the vision and values of the institution where they work for, current national education policy, and the regional and global integrations. Moreover, the faculty should deploy and disseminate the vision and values effectively to all staff, students, alumni, and other stakeholders. 2) Always perform an action with firm commitment and accountability towards the stated vision and values of the faculty.
1.2 Good Governance	*Faculty of education should:* 1) Set effective mechanisms for recruiting and nominating faculty seniors and administration staff. Then, the faculty should create a management structure for faculty seniors and form regulation, role and duties, and job description for faculty seniors and administration staff. 2) Place faculty seniors and administration staff based on their degrees, skills, and other criteria of the faculty. Also, the faculty should be aware of other important characteristics of their staff including leadership, intra- and interpersonal skills, commitment, nationalism, self-development, and accountability. 3) Collaborate with the institution's management team, faculty seniors, administration staff, and other stakeholders to set effective mechanisms for assessing work performance of faculty seniors and administration staff, assessing their capacity, and developing and awarding them. 4) Disseminate the regulation and role and duties, the above mechanisms, and assessment results to faculty seniors and administration staff.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
1.3 Support for Key Communities and Society	*Faculty of education should:* 1) Set effective mechanisms for strengthening and supporting key communities and society based on their real needs and development plan of the faculty. 2) Always assess the needs of key communities and society in order to set a development plan in response to their real needs. The faculty should also assess the accomplishment level of their contribution towards this support services and the level of satisfaction of key communities and society towards this contribution. 3) Disseminate the above mechanisms, assessment results on the needs of key communities and society, level of accomplishment towards support services, and level of satisfaction towards the contribution to the entire staff, students, key communities, and other stakeholders.
Dimension 2: Mission, Strategic Planning, and Finance Faculty of education can achieve their stated vision when they have developed a clear mission, effective strategic plan, and adequate financial support.	
2.1 Mission	*Faculty of education should:* 1) Collaborate with all staff, students, and other stakeholders to set a clear mission based on the institution's mission, faculty's vision and resources, the needs of current national education policy, the protection of stakeholders' interests, and the assessment results on the faculty performance. 2) Always assess the level of mission accomplishment and modify it based on assessment results for future implementation. 3) Disseminate the stated mission, the level of its accomplishment, and the result of its modification to the entire staff, students, and other stakeholders.
2.2 Strategic Planning	*Faculty of education should:* 1) Collaborate with all staff, faculty's consultant and/or donors, student representatives, and other stakeholders to develop a long- or short-term strategic plan and set key objectives based on the stated mission and assessment results on the needs of the faculty. 2) Collaborate with all staff to develop action plans for real practice in response to the stated key objectives and faculty's resources. The action plan can be changed according to the real situation of the faculty or each department. 3) Set effective mechanisms for assessing the accomplishment level of the strategic plan and action plan in order to modify them for the effectiveness of future implementation.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
	4) Disseminate the strategic plan, action plan, and accomplishment level of the strategic plan and action plan to the entire staff and other potential stakeholders.
2.3 Finance	*Faculty of education should:* 1) Establish an effective financial management system and term or annual budget planning based on the faculty's mission and resources. Also, the faculty should set up a strong committee for raising funds or communicating with new development partners. 2) Set effective mechanisms for requesting and allocating financial support within the faculty. 3) Manage and allocate enough financial support for teaching and learning, research and publication, faculty development, support services for key communities and society, scholarship awarding, physical facilities installment and repairs, internal quality assurance process, and other communication and development of the faculty. 4) Prepare financial reports on the uses of finance. The faculty's financial management and allocation should be assessed by fair and independent internal and external auditors. 5) Disseminate the above mechanisms, committee, and financial package approved for every part of the faculty to the entire staff and other potential stakeholders.
Dimension 3: Educational Programs The faculty's educational programs play the most important role in guaranteeing that the educational quality can meet the needs of society and the competition of national and international job markets. So, the faculty should pay more attention to educational programs including curriculum design, teaching and learning effectiveness, student assessment and improvement, research and publication, and internal quality assurance system.	
3.1 Curriculum Design	*Faculty of education should:* 1) Create a strong committee of curriculum development for the faculty or department with fair and transparent selection and nomination based on their degrees, working experience, and other criteria of the faculty. Besides, the faculty should form a management structure, regulation, role and duties, and job description for the members of this committee and formulate effective mechanisms for assessing their work performance and developing and awarding them. More importantly, this committee should work with academic staff, student representatives, key communities, job providers, and other potential stakeholders to design, review, and update or reform the faculty's curriculum.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
	2) Link the curriculum to current national education policy or law, national qualification framework, faculty's mission, the needs of key communities and society, and current trends of education in Cambodia and the world. 3) include specific content and other necessary skills for the teaching profession into the curriculum including pedagogy, technology, educational measurement and evaluation, educational research methodology, educational leadership, life and career skills, learning and innovation skills, international languages, and global issues. 4) Organize training courses on pedagogy, educational leadership, research and measurement and evaluation skills for the outsiders who would like to become professional teachers. 5) Set clear intended learning outcomes that students will be able to get after the completion of each course/major. In this sense, the faculty or department should develop course syllabuses and objectives for each course provided in the faculty. 6) Always assess the accomplishment level of curriculum application for each program level of the faculty so as to identify strengths, weaknesses, challenges, and solutions for future implementation. 7) Set effective mechanisms for designing, reviewing, and updating or reforming the curriculum based on assessment results on the needs of current national education policy, key communities and society, regional or global trends, and faculty development. 8) Disseminate the regulation and role and duties and the above mechanisms to the curriculum development committee and current curriculum, intended learning outcomes, and opportunities for the above training courses to all staff, students, key communities, job providers, and other stakeholders.
3.2 Teaching and Learning Effectiveness	*Faculty of education should:* 1) Set effective mechanisms for teaching and learning, class assignment, thesis or dissertation, research studies related to teaching and learning, and publication. 2) Perform teaching and learning activities for each course depending on the intended learning outcomes and each course should be conducted with appropriate length so as to ensure quality. 3) Set effective mechanisms for monitoring and assessing teaching effectiveness, student achievement, and satisfaction levels of academic staff and students towards educational provisions for each course to gather actionable information for future implementation.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
	4) Set effective mechanisms for awarding academic staff and best students based on the result of teaching effectiveness, research studies, faculty and social engagement, and learning achievement. 5) Provide a library with enough textbooks, reference books, journals, and other documents that support teaching and learning, research activities, and other uses. The faculty should also have a laboratory with the installment of modern facilities for students of scientific majors. Librarians should be skilled in library management and the process of reading, borrowing, and returning textbooks, reference books, or other documents should be easy for academic staff, students, researchers, or the public. 6) Prepare students for teaching practicums at target schools so that they are well prepared for teaching career. In addition to this, orientation courses about college life, learning effectiveness, student engagement should be organized for new students. At the beginning of the course, there should be an orientation about course syllabuses and objectives, intended learning outcomes, class assignment, course length, teaching and learning methods, assessment method and criteria for student achievement so that students can develop their academic calendar and know what they will achieve at the end of each course. During the course, there should be a presentation or seminar that is relevant to the subject being conducted from subject matter experts so that students can link the theories and concepts they have studied with real-life experiences. 7) Always assess the needs of institutions, organizations, or job providers that will utilize human resources from faculty of education to find out what kind of educators and specific characteristics they expect. 8) Disseminate the above mechanisms, assessment methods and criteria, the intended learning outcomes, course syllabuses and objectives, the satisfaction level of academic staff and students towards teaching and learning in each course, and other opportunities for improving teaching and learning to the entire staff, students and their parents, and other potential stakeholders.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
3.3 Student Assessment and Improvement	*Faculty of education should:* 1) Set effective mechanisms for assessing student achievement based on the intended learning outcomes. For thesis, dissertation, or other research results, there should be a fair and accurate assessment before publication. More importantly, there should be an assessment on students' behaviors towards the teaching profession, levels of nationalism, interpersonal skills, international languages, information technology, and other skills related to life and career so as to ensure that the human resources from faculty of education will be potential enough for sustainable and peaceful development of the country. 2) Set effective mechanisms for improving student achievement for each course/major so that students whose achievement is under the minimum criteria of the course/major can have opportunities to improve themselves. So, the faculty should have those students resit, do more assignment, or repeat the same course until they can reach the minimum criteria. 3) Disseminate the above mechanisms to the entire staff, students and their parents, and other potential stakeholders.
3.4 Research and Publication	*Faculty of education should:* 1) Form a research committee or team of reviewers and editors to assess all kinds of academic achievements including textbooks, thesis or dissertation research results, and other research studies conducted by the faculty. Besides, the faculty should form regulation, role and duties, and job description for this committee or team and set effective mechanisms for assessing their work performance and developing and awarding them. 2) Always conduct research studies so that effective methods can be found to improve teaching and learning effectiveness, support services for key communities and society, and faculty development. 3) Set effective mechanisms for proposing, conducting, and improving research studies and managing knowledge from the conducted research studies in the library or online for all staff, students, and other internal or external researchers. 4) Organize training courses on research methodology for all staff, students, alumni, and external individuals who want to conduct a research study so as to ensure quality research. 5) Disseminate the regulation and role and duties and the above mechanisms to the committee and research plans, results of previous research studies, and opportunities for trainings on research methodology to the entire staff, students, and other potential stakeholders.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
3.5 Internal Quality Assurance System	*Faculty of education should:* 1) Form an IQA unit that is composed of all parts of the faculty and set regulation, role and duties, and job description for this unit during the IQA process of the faculty. The faculty should also set effective mechanisms for assessing their work performance and developing and awarding them. 2) Organize regular training courses or meetings on both IQA and EQA for all staff, students, and other stakeholders. 3) Set effective mechanisms for monitoring and assessing faculty performance, educational provisions for each program level, and other services that are provided by the faculty. The faculty should have a specific assessment plan to monitor and assess these. 4) Disseminate the regulation and role and duties and the above mechanisms to the IQA unit and the results of both IQA and EQA to the entire staff, students and their parents, and other stakeholders.
Dimension 4: Quality of Academic Staff Students can achieve the intended learning outcomes depending on teacher quality. So, the faculty should pay more attention to academic staff recruitment and placement, academic staff environment and development, and academic staff engagement.	
4.1 Academic Staff Recruitment and Placement	*Faculty of education should:* 1) Set effective mechanisms for recruiting and placing academic staff and form regulation, role and duties, and job description for them so that the quality of educational provisions is being guaranteed in the faculty. 2) Recruit sufficient academic staff in place and have them teach based on their capacity, skills, and degrees. More importantly, the faculty should recruit academic staff who have in-depth knowledge relevant to the course they will be responsible for and some necessary skills including pedagogy, information technology, interpersonal skills, international languages, educational measurement and evaluation skills, and research skills. In addition to these, the academic staff should have extreme nationalism, self-development, and firm commitment. 3) Disseminate the above mechanisms and specific qualification and regulation to the entire staff and other potential stakeholders.
4.2 Academic Staff Environment and Development	*Faculty of education should:* 1) Provide academic staff with comfortable and secure work place with easy access to come to and leave work so that they can feel good for their teaching professions.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
	2) Set effective mechanisms for developing and awarding academic staff. In this case, the faculty should pay much more attention to assessing academic staff's capacity and capability, teaching and research effectiveness, and social engagement to ensure fair and accurate promotion or awarding. 3) Disseminate the above mechanisms to the entire staff and other potential stakeholders.
4.3 Academic Staff Engagement	*Faculty of education should:* 1) Set a clear policy on responsibilities for academic staff to participate in some activities of the faculty and society, workload, and academic freedom in order to ensure effective management of the faculty and good communication with society. 2) Set effective mechanisms for monitoring and assessing all kind of participation of academic staff within the faculty and society to strengthen the communication with society and provide fair promotion for academic staff. 3) Disseminate the above policy and mechanisms and engagement results in the faculty and society to the entire staff and other potential stakeholders.
Dimension 5: Customers and Support Services Students are main elements in the process of teaching and learning and the services that help them to improve during their college lives are also important. In this case, the faculty should be careful with student admission, scholarship and tuition fee, student engagement and services, voices of the customer, and information system.	
5.1 Student Admission	*Faculty of education should:* 1) Set effective mechanisms for announcing and selecting new students based on the stated mission, resources, and program levels of the faculty. This policy should state clearly on the characteristics of students who want to come to faculty of education so that they will become potential human resources for the teaching profession. 2) Disseminate the above mechanisms to the entire staff, students and their parents, and other stakeholders.
5.2 Scholarship and Tuition Fee	*Faculty of education should:* 1) Set effective mechanisms for providing scholarship and setting tuition fee based on the stated mission and resources of the faculty to ensure sustainable educational provisions and standards of educational quality. 2) Disseminate the above mechanisms, tuition fee for each term/year, and the list of scholarship grantees to the entire staff, students and their parents, and other stakeholders.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
5.3 Student Engagement and Services	*Faculty of education should:* 1) Set a clear policy on workload and responsibilities for students in faculty and social engagement. 2) Offer counselling services for academic problems and other problems that students have encountered during each course. Also, the faculty should provide other services including teaching practicums in target schools, exchange programs, and social activities. More importantly, the faculty should build dormitory, health center, canteen, sport complex, and cultural hall for all staff and students. 3) Always assess satisfaction levels of students towards support services that are provided by the faculty in order to improve or eliminate unsatisfied ones. 4) Disseminate the policy, support services, and the level of satisfaction towards the support services to the entire staff, students and their parents, and other stakeholders.
5.4 Voices of the Customer	*Faculty of education should:* 1) Set effective mechanisms for gathering information on feedback from all staff, students, alumni, and other stakeholders. The faculty should be open to accept all kinds of feedback on faculty management, teaching and learning, research and publication, communication and collaboration with society, and support services for all staff, students, and key communities and society. 2) Set effective mechanisms for solving complaints with effective solution and building good relationship with students, alumni, and other stakeholders. 3) Disseminate the above mechanisms and the level of relationship to the entire staff, students and their parents, alumni, and other stakeholders.
5.5 Information System	*Faculty of education should:* 1) Form an effective information system monitored and maintained by skillful staff of information technology. The information stored on this system should be curriculum update, student population, students' satisfaction, employability rate of graduates, job opportunities, development plan, and all kinds of assessment results. 2) Set regulation, role and duties, and job description for staff who are to monitor and maintain the information system and form regulation for all staff, students, alumni, and other stakeholders when accessing or downloading any document. 3) Disseminate the regulation and role and duties for staff of information system and specific regulation for information access and downloading to the entire staff, students, and other stakeholders.

Table 4.29 (Cont.)

Dimensions/ Sub-Dimensions	Indicator Description
Dimension 6: Physical Facilities Physical facilities are really helpful to the effectiveness of educational provisions within the faculty. So, the faculty should be careful with the adequacy and security of facilities, facility update, and facility management and maintenance.	
6.1 Adequacy and Security of Facilities	*Faculty of education should:* 1) Provide sufficient standard physical facilities including classrooms, meeting rooms, offices, rest rooms, parking lots, health center, and sport complex with enough telecommunication and emergency exit.
6.2 Facility Update	*Faculty of education should:* 1) Always check and add more physical facilities to support teaching and learning, research and publication, and other needs of the faculty.
6.3 Facility Management and Maintenance	*Faculty of education should:* 1) Set effective mechanisms for managing and maintaining physical facility and create a development plan relevant to faculty expansion based on the stated mission and resources of the faculty. 2) Always check and repair current physical facilities that are not completely broken. 3) Disseminate the above mechanisms and the development plan to the entire staff, students, and other stakeholders.

In conclusion, developing the model of IQA indicators of faculty of education in Cambodia required launching the important phases that led to the satisfactory results. The literature review and semi-structured interviews made a model of six dimensions and 22 sub-dimensions with 77 indicators of educational quality for faculty of education in Cambodia. When verified, the model of these indicators fitted the empirical data and three of its dimensions were particularly important for ensuring quality of faculty of education in Cambodia including quality of academic staff, educational programs, and customers and support services. More importantly, when validated with the practitioners of faculty of education in Cambodia, most IQA indicators were able to strongly satisfy the needs of the faculty. However, human and financial resources were still the big challenges for the faculty to completely implement and achieve these IQA indicators.

CHAPTER 5
CONCLUSION, DISCUSSION, AND RECOMMENDATIONS

The purpose of this research study was to develop IQA indicators of faculty of education in Cambodia. The two specific objectives were 1) to construct a model of IQA indicators of faculty of education in Cambodia and 2) to validate the model of indicators. This research study was conducted to ensure that the model of IQA indicators would be consistent with the context of faculty of education in Cambodia, the MoEYS's radical vision, and the regional and global trends of the 21st century.

5.1 Conclusion

This study is a descriptive research concerning both qualitative and quantitative approaches to data collection and analysis in order to develop a model of IQA indicators of faculty of education in Cambodia. Below is the summary of the indicator construction techniques and procedures and results of this research study.

5.1.1 Construction of Model of IQA Indicators of Faculty of Education in Cambodia

The literature review and semi-structure interviews were the important elements for the construction of the model of IQA indicators of faculty of education in Cambodia. First, the researcher conducted a literature review that was related to important concepts of quality and quality assurance in higher education, standards of quality assurance of both national and international contexts, research studies relevant to dimensions and specification of higher education quality, and specific approaches to constructing and validating indicators in order to set a research conceptual framework. Following the literature review, the researcher conducted semi-structured interviews with the experts of higher education and stakeholders of faculty of education in Cambodia to identify possible dimensions and indicators of quality that would be used during the IQA process of faculty of education in Cambodia.

With the results from the above sources, the researcher designed IQA indicators for faculty of education in Cambodia. As a result, a model of six dimensions and 22 sub-dimensions with 77 indicators was constructed for the faculty. The dimensions and sub-dimensions were 1) leadership (senior leadership, good governance, and support for key communities and society); mission, strategic planning, and finance (mission,

strategic planning, and finance); 3) educational programs (curriculum design, teaching and learning effectiveness, student assessment and improvement, research and publication, and IQA system); 4) quality of academic staff (academic staff recruitment and placement, academic staff environment and development, and academic staff engagement); 5) customers and support services (student admission, scholarship and tuition fee, student engagement and services, voices of the customer, and information system); and 6) physical facilities (adequacy and security of facilities, facility update, and facility management and maintenance). Among the 77 IQA indicators, 72 indicators were similar to those of the standards of quality assurance of higher education in general but the other five specifically reflected the characteristics of faculty of education in Cambodia including 1) curriculum content, 2) pedagogy training courses, 3) teaching practicums, 4) teacher qualification, and 5) student selection criteria.

To make sure that the constructed model of IQA indicators would be suitable for the faculty of education in Cambodia, the researcher conducted a confirmatory factor analysis in order to verify the fit of the constructed model of IQA indicators with the academic staff, staff, and students of faculty of education in the 2014 academic year in Cambodia. As a result, the constructed model of IQA indicators fitted the empirical data. This means that this model of IQA indicators was appropriate for the context of faculty of education in Cambodia. Also, there was an awareness that all the dimensions and sub-dimensions were significant to attain and maintain quality of the faculty. The dimensions, ranged based on order of importance, included 1) quality of academic staff; 2) educational programs; 3) customers and support services; 4) mission, strategic planning, and finance; 5) physical facilities; and 6) leadership. The sub-dimensions, ranged based on order of importance, were 1) finance, 2) academic staff environment and development, 3) research and publication, 4) teaching and learning effectiveness, 5) student assessment and improvement, 6) internal quality assurance system, 7) academic staff recruitment and placement, 8) academic staff engagement, 9) student engagement and services, 10) student admission, 11) support for key communities and society, 12) adequacy and security of facilities, 13) good governance, 14) strategic planning, 15) scholarship and tuition fee, 16) mission, 17) information system, 18) voices of the customer, 19) facility update, 20) curriculum design, 21) senior leadership, and 22) facility management and maintenance.

5.1.2 Validation of Model of IQA Indicators of Faculty of Education in Cambodia

Designing and examining indicators are important during the process of indicator construction, but validating them with the intended user or stakeholders is much more important. So, the researcher invited 11 intended practitioners from faculty of education in Cambodia to evaluated the 77 IQA indicators through the four standards of evaluation suggested by the Joint Committee on Standards for Educational Evaluation (1981). As the result of validation, all IQA indicators provided the highest respects and attention for faculty of education in Cambodia and the IQA indicators were constructed with the highly reliable sources, techniques, and procedures. These led to the fact that the IQA indicators were able to strongly satisfy the needs of the faculty. In real practice for the faculty, however, the IQA indicators related to disseminating information would be achieved at the highest level while the others focusing on the implementation of important polices or mechanisms would be achieved at the high level.

5.2 Discussion

The research study aimed to construct the model of IQA indicators of faculty of education in Cambodia and validate this model of IQA indicators in order that it would become more effective for the faculty to ensure quality education for students enrolling for the teaching profession. The two objectives were fulfilled to develop the model of IQA indicators of faculty of education in Cambodia with multi-method approaches that led to the satisfactory results. Below are the discussions about these results.

5.2.1 Construction of Model of IQA Indicators of Faculty of Education in Cambodia

According to the literature review, interview results, and the CFA results, six dimensions and 22 sub-dimensions with 77 indicators were constructed as a model for the IQA process of faculty of education in Cambodia.

5.2.1.1 Dimensions of Quality of Faculty of Education in Cambodia

The six dimensions of quality of faculty of education in Cambodia included 1) leadership; 2) mission, strategic planning, and finance; 3) educational programs; 4) quality of academic staff; 5) customers and support services; and 6) physical facilities. Based on the CFA results, the six dimensions were important to ensure quality of the faculty. These findings were consistent with the standards of quality assurance of both

national and international quality assurance bodies, educational quality framework, and the results of previous research studies in the literature review.

1) Leadership leads the faculty to the stated vision, values, mission, or goal via management, communication, and cooperation both inside and outside the faculty. This dimension is involved with senior leadership, good governance, and support for key communities. Such a dimension was supported by BPEP (2013), ACC (2011a), ONESQA (B.E. 2554), OHEC (B.E. 2553), Barnett (1992), Vann (2012), Tsinidou et al. (2010), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

2) Mission, strategic planning and finance play the important roles in helping the faculty fulfil the stated vision and values. This can be achieved only if the faculty has developed a clear mission, effective strategic plan, and adequate financial support. This dimension was supported by BPEP (2013), ACC (2011a), ONESQA (B.E. 2554), OHEC (B.E. 2553), Sinlarat et al. (2009), and Thongphakdee (2000).

3) Educational programs help guarantee that quality education has been provided to students so that they can meet the needs of key communities and society, country development, and the competition of national and international job markets. To achieve these key demands, specific sub-dimensions should be taken into account including curriculum design, teaching and learning effectiveness, student assessment and improvement, research and publication, and IQA system. This dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), ONESQA (B.E. 2554), OHEC (B.E. 2553), EAQAHE (2009), Owlia and Aspinwall (1996), Barnett (1992), Vann (2012), Tsinidou et al. (2010), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

4) Quality of academic staff is extremely effective in teaching and learning in the faculty. This means that whether the intended learning outcomes will be achieved depends on the faculty's attention to recruiting and placing, developing, and engaging academic staff. Such a dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), ONESQA (B.E. 2554), OHEC (B.E. 2553), EAQAHE (2009), Owlia and Aspinwall (1996), Barnett (1992), Vann (2012), Tsinidou et al. (2010), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

5) Customers and support services are really important during the process of educational provisions in the faculty. Students and other customers are those who receive what the faculty has set in the intended learning outcomes. The support services help students improve their academic achievements and behavior during their college lives. To ensure quality through this dimension, specific factors should be paid much attention to including student admission, scholarship and tuition fee, student engagement and services, voices of the customer, and information system. Such a dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), OHEC (B.E. 2553), EAQAHE (2009), Owlia and Aspinwall (1996), Vann (2012), Tsinidou et al. (2010), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

6) Physical facilities provide extra help for the faculty to ensure quality of educational provisions. This can be achieved when enough and secure facilities are provided, updated, or expanded in a timely fashion. This dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), EAQAHE (2009), Owlia and Aspinwall (1996), Vann (2012), Tsinidou et al. (2010), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

However, quality of academic staff was considered the most significant of the six dimensions. This was because the majority of respondents were students who were closely connected with teachers during the teaching and learning process. In this case, students realized that quality teachers would effectively help them. Raudenbush et al. (1993) assure that student quality depends directly on teacher quality. This leads to the fact that a teacher's ability is more significant than other educational resources to ensure quality of student learning (Darling-Hammond, 2006). Of the six dimensions, leadership was the least important to ensure educational quality of the faculty. This was because all respondents were not faculty seniors, so they had few ideas about senior leadership. Based on the validation result through feasibility, faculty seniors seemed not to fully deploy the stated vision and values to staff, academic staff, and other stakeholders and faculty of education in Cambodia has not yet assimilated fully into a culture of good governance that requires selecting or hiring enough staff with consistent degrees and skills, assessing their performance and capacity and capability needs, and developing and awarding them. However, faculty's leadership is important for quality assurance.

5.2.1.2 Sub-Dimensions of Quality of Faculty of Education in Cambodia

The 22 sub-dimensions of quality of faculty of education in Cambodia were 1) senior leadership, 2) good governance, 3) support for key communities and society, 4) mission, 5) strategic planning, 6) finance, 7) curriculum design, 8) teaching and learning effectiveness, 9) student assessment and improvement, 10) research and publication, 11) IQA system, 12) academic staff recruitment and placement, 13) academic staff environment and development, 14) academic staff engagement, 15) student admission, 16) scholarship and tuition fee, 17) student engagement and services, 18) voices of the customer, 19) information system, 20) adequacy and security of facilities, 21) facility update, and 22) facility management and maintenance. These findings were consistent with the standards of quality assurance of both national and international quality assurance bodies, educational quality framework, and the results of previous research studies in the literature review.

1) Senior leadership leads the faculty to a relative success and sustainable development within the faculty. This will be achieved when faculty seniors set a vision and values for the faculty and deploy them effectively to the entire staff, students, and other stakeholders. This sub-dimension was supported by BPEP (2013), OHEC (B.E. 2553), Vann (2012), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

2) Good governance brings about satisfactory work performance of the faculty. This will be achieved when faculty seniors and administration staff are carefully selected based on the required qualifications or needs of the faculty. Also, effective mechanisms should be set to assess work performance and to develop and award the staff. This sub-dimension was supported by BPEP (2013); ACC (2011a); ONESQA (B.E. 2554); OHEC (B.E. 2553); Barnett (1992); Vann (2012); Tsinidou et al. (2010); Sinlarat et al. (2009); and Ngamsert and Tangdhanakanond (2009).

3) In addition to internal management and development, support for key communities and society is imperative for the faculty to take into account in order to ensure sustainability of the educational provisions and development of the faculty. This can be achieved through assessing the needs of key communities and society, level of their satisfaction towards the support services, and achievement level of the support

services. This sub-dimension was supported by BPEP (2013), ONESQA (B.E. 2554), OHEC (B.E. 2553), and Jiraro (2004).

4) The faculty's mission plays the important role in leading all educational activities towards the stated vision and the needs of the faculty, key communities and society, and regional and global trends. The mission should be regularly assessed and modified so as to fit current situations. This sub-dimension was supported by BPEP (2013), ACC (2011a), OHEC (B.E. 2553), Sinlarat et al. (2009), and Thongphakdee (2000).

5) The faculty's strategic plan is important to ensure the accomplishment of the stated vision and mission of the faculty. To support the strategic plan, a specific action plan should be developed. Moreover, the strategic plan and action plan should be assessed and modified so as to reflect the needs of the faculty. This sub-dimension was supported by BPEP (2013), ACC (2011a), ONESQA (B.E. 2554), OHEC (B.E. 2553), and Thongphakdee (2000).

6) The faculty's finance ensure the accomplishment of the strategic plan. To achieve this, adequate financial support should be managed and allocated effectively and the financial management, allocation, and report should be audited by both internal and external auditors. Such a sub-dimension was supported by BPEP (2013), ACC (2011a), OHEC (B.E. 2553), Sinlarat et al. (2009), and Thongphakdee (2000).

7) The faculty's curriculum should be specifically designed for the teaching profession. This means that the curriculum should be related to pedagogy, approaches to educational measurement and evaluation, educational research methodology, and other necessary skills for teacher education. More importantly, the intended learning outcome should be clearly identified when designing curriculum for each major. This sub-dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), OHEC (B.E. 2553), EAQAHE (2009), Owlia and Aspinwall (1996), Barnett (1992), Vann (2012), Tsinidou et al. (2010), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), and Thongphakdee (2000).

8) Teaching and learning effectiveness is the core mission of educational provisions within the faculty. This means that the intended learning outcomes will be definitely achieved when quality teaching and adequate learning supports are involved. This sub-dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), Owlia

and Aspinwall (1996), Barnett (1992), Vann (2012), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

9) Student assessment and improvement can ensure whether the intended learning outcomes are being met. Hence, the faculty should fairly assess and improve their students based on their achievement. This sub-dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), OHEC (B.E. 2553), EAQAHE (2009), Barnett (1992), and Ngamsert and Tangdhanakanond (2009).

10) Research and publication can reflect the effectiveness of teaching and learning within the faculty and fulfil the needs of the faculty and key communities and society. Hence, it is imperative to have a research committee or team of editors within the faculty in order to conduct research studies and help with students' dissertations or theses. This sub-dimension was supported by BPEP (2013), ACC (2011a), OHEC (B.E. 2553), Barnett (1992), Sinlarat et al. (2009), Jiraro (2004), and Thongphakdee (2000).

11) The faculty's IQA system ensure educational quality for students and confidence for other customers or stakeholders. So, the IQA unit is important for the faculty to monitor, assess, and improve their performance and educational provisions. This sub-dimension was supported by BPEP (2013), ACC (2011a), ONESQA (B.E. 2554), OHEC (B.E. 2553), EAQAHE (2009), Sinlarat et al. (2009), Jiraro (2004), and Thongphakdee (2000).

12) Recruiting and placing academic staff is important to ensure quality of teaching and learning. To achieve this, adequate teachers should be hired and placed to teach students based on the needs of teacher education and their skills and experiences. This sub-dimension was supported by AUN (2011), ACC (2011a), OHEC (B.E. 2553), EAQAHE (2009), Owlia and Aspinwall (1996), and Thongphakdee (2000).

13) Assessing and developing academic staff is more important than hiring and placing them into the class. The regular assessment and development of teachers' capacity needs can ensure quality teaching within the faculty. This sub-dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), ONESQA (B.E. 2554), OHEC (B.E. 2553), EAQAHE (2009), Barnett (1992), Vann (2012), Tsinidou et al. (2010), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004) as well as Thongphakdee (2000).

14) Academic staff engagement within the faculty and society is the main element that can strengthen the communication between the faculty and society. So, the faculty should encourage their teachers to participate in social activities or events. This sub-dimension was supported by BPEP (2013) and Thongphakdee (2000).

15) Student admission of the faculty should be clear and responsive to the stated vision and values. Students enrolling in the faculty should be carefully selected and trained for the teaching profession. Besides written tests, attitude tests or individual interviews should be involved during the selection process. This sub-dimension was supported by AUN (2011), ACC (2011a), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), Thongphakdee (2000).

16) Scholarship and tuition fee are really attractive to students. With these two things, educational quality can both increase and decrease within the faculty. Too many scholarship and low term fee may lead to the failure of educational provisions in that the inputs of low standards will be included into the system. Hence, the faculty should not provide too many scholarships and set a tuition fee that will not support the sustainability of educational provisions so as to attract students. This sub-dimension was supported by ACC (2011a).

17) Student engagement and services are really important for students to improve their capacity, teaching skills, and behaviors during their college lives. This can be achieved when the faculty provides counselling services, exchange programs, and other opportunities for teaching practicums and social activities for students. This sub-dimensions was supported by BPEP (2013), AUN (2011), ACC (2011a), OHEC (B.E. 2553), Owlia and Aspinwall (1996), Vann (2012), Tsinidou et al. (2010), Sinlarat et al. (2009), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

18) Voices of the customer help the faculty with actionable information for their performance, educational provisions, and students' problems or complaints. Hence, good relationship should be built with students, alumni, other customers or stakeholders, and students of other HEIs so as to get constructive feedback. This sub-dimension was supported by BPEP (2013), AUN (2011), Owlia and Aspinwall (1996), and Ngamsert and Tangdhanakanond (2009).

19) Information system plays the important role in sending messages and storing all important documents and information of the faculty including curriculum update, student population, students' satisfaction, employability rate of graduates, job opportunities, development plan, and all kinds of assessment results. This sub-dimension was supported by BPEP (2013), AUN (2011), ACC (2011a), OHEC (B.E. 2553), and EAQAHE (2009).

20) The process of educational provisions runs smoothly when adequate and secure facilities are provided in the faculty. These include classrooms, meeting rooms, offices, rest rooms, parking lots, health center, sport complex, and other supporting rooms and buildings. This sub-dimensions was supported by BPEP (2013), AUN (2011), ACC (2011a), EAQAHE (2009), Owlia and Aspinwall (1996), Vann (2012), Tsinidou et al. (2010), Ngamsert and Tangdhanakanond (2009), Jiraro (2004), and Thongphakdee (2000).

21) Regular facility update is really important for the faculty to ensure that adequate and secure facilities are being provided for teaching and learning, office work, research and publication, and other requirements of the faculty. This sub-dimension was supported by AUN (2011), ACC (2011a), and Owlia and Aspinwall (1996).

22) Facility management and maintenance can ensure the effectiveness of providing facility within the faculty. Hence, the faculty should have a clear policy for managing and maintaining facilities and a specific plan for facility expansion based on the faculty's mission and resources. This sub-dimension was supported by AUN (2011), ACC (2011a), EAQAHE (2009), and Owlia and Aspinwall (1996).

However, finance was the most important sub-dimension in the group. This was because the respondents thought that many HEIs in Cambodia had hesitated to invest adequate money in what they were providing for their teachers, staff, students, and other stakeholders. As the respondent were teachers, staff, and students they really knew that quality education would never be provided within any HEI that paid much attention to only money which is the short-term benefit of educational provisions. Chet (2006) and Vann (2012) concluded that most HEIs in Cambodia focused on this type of benefit rather than quality education.

5.2.1.3 New Indicators of Quality of Faculty of Education in Cambodia

Based on the synthesis of literature review, the semi-structure interview results, and the CFA results, the model of IQA indicators was important for quality assurance of faculty of education in Cambodia. This means that all the IQA indicators were also important to ensure quality within the faculty. According to the construction results, 72 IQA indicators were similar to those of the standards of quality assurance of higher education used by both national and international quality assurance bodies. This might be because the condition or characteristics of faculty of education were nearly the same to those of other HEIs. However, five indicators were included into the model of IQA indicators so as to reflect the specific characteristics of faculty of education in Cambodia. These were 1) curriculum content, 2) pedagogy training course, 3) teaching practicums, 4) teacher qualification, and 5) student selection criteria.

1) The faculty's curriculum should be designed to satisfy the needs of the teaching profession because their students will definitely become professional teachers for the country. In this sense, curriculum content should be related to relevant content knowledge plus pedagogy, educational measurement and evaluation, educational research methodology, technology, international languages, intra- and interpersonal skills, life and career skills, and other necessary skills for the teaching profession in the 21st century. Technology, pedagogy, and content knowledge (TPACK) are core elements for teachers of the 21s century (Harris & Hofer, 2011; P. Mishra & Koehler, 2006). Measurement and evaluation skills can help teachers fairly and correctly assess and evaluate their students' learning, achievements, and behavior while educational research method can help them with new teaching method designs suitable for the characteristics of their own classes. International languages, especially English, help teachers in Cambodia live up to the regionalization and globalization of the 21st century in that almost all documents are written in English. Intra- and interpersonal and life and career skills will help teachers effectively communicate not only in their teaching professions but also in social engagement.

2) Training courses on pedagogy and other necessary skills for the teaching profession should be conducted for the outsiders who would like to work in the teaching profession. Teaching is a profession that needs an intensive course specifically related to pedagogy and student assessment skills. He who has not attended such a training

course will probably fail to achieve the intended learning outcomes which are core values for students. Hence, those who would like to become professional teachers should take the course in that they will be involved with the application of knowledge, skills, and value added designed to meet the needs of individuals, institutions, or society through a diversity of teaching methods.

3) Teaching practicums should be organized for pre-service teachers so that they can practice teaching in a real classroom management. Also, the faculty realizes to what extent their students will react when performing as real teachers.

4) The faculty's teachers should have profound knowledge; pedagogy; skills related to measurement and evaluation of student achievement, educational research methodology, and educational leadership; professional ethics, and other necessary skills for the teaching profession.

5) Students enrolling for the teaching profession should be cautiously selected and trained in that they should have relevant knowledge to the major they are taking and acceptable behavior towards the teaching profession. In this case, the faculty should set not only written tests but also attitude tests or individual interviews for the selection.

5.2.2 Validation of Model of IQA Indicators of Faculty of Education in Cambodia

The indicator validation ensured that each IQA indicator of faculty of education in Cambodia were able to fulfil the four standards of evaluation suggested by the Joint Committee on Standards for Educational Evaluation (1981) including utility, feasibility, propriety, and accuracy.

5.2.2.1 Validation through the Utility Standard

Based on the evaluation results through the utility standard, all IQA indicators were able to strongly reflect the needs of faculty of education in Cambodia. This was because the contexts of faculty of education in Cambodia and national and international quality assurance were studied in order to construct the IQA indicators. Moreover, the determination of possible dimensions and indicators of quality of faculty of education in Cambodia was involved through semi-structured interviews with both experts of higher education and stakeholders of the faculty in Cambodia. More importantly, 800 teachers, staff, and students of faculty of education in Cambodia were selected to express their views on the appropriateness of the constructed indicators. It is sure that the intended

user or stakeholders were clearly identified and all their responses and needs were included into the construction of the model of IQA indicators.

5.2.2.2 Validation through the Feasibility Standard

According to the evaluation results through the feasibility standard, the IQA indicators of faculty of education in Cambodia, especially those related to information dissemination, would be completely achieved in the faculty because these activities did not involve spending much money or utilizing highly qualified staff.

However, the IQA indicators involved with the implementation of important policies and mechanisms would not be completely achieved when put into practice under current human resources and financial support of faculty of education in Cambodia. These IQA indicators included 1) assessing staff's capacity and capability needs and developing and awarding them; 2) assessing the needs of key communities and society; 3) assessing the achievement levels of faculty's mission and strategic plan; 4) providing enough financial support for teaching and learning, research activities, and community and faculty development; 5) assessing the needs of job providers; 6) conducting research related to teaching and learning and community and faculty development; 7) assessing academic staff's capacity and capability needs and developing and awarding them; 8) solving students' and other customers' problems and building good relationship with students, alumni, and other stakeholders; and 9) providing adequate and secure facilities supporting teaching and learning, research activities, and faculty development. This was because these activities remained big challenges to faculty of education in Cambodia. Based on the discussion during the validation process with the 11 practitioners from faculty of education in Cambodia, staff's and teachers' limited capacity and capability and financial package hampered the implementation of these IQA indicators. Teachers with bachelor or master degrees are still allowed to teach bachelor or master students in Cambodia HEIs (ACC, 2011b). Moreover, most HEIs in Cambodia has focused on the short-term benefit rather than educational quality (Chet, 2006; Vann, 2012). These would become big obstacles for hiring enough qualified staff and teachers in place and developing and awarding them for better outputs of instruction and research studies; developing key communities and society; building good relationship with students and other stakeholders; and installing, updating, and expanding physical facilities.

5.2.2.3 Validation through the Propriety Standard

The evaluation results through the propriety standard indicated that all IQA indicators were able to provide the highest respect and attention for faculty of education in Cambodia. This was because all indicators were constructed from the information and needs of the faculty and the indicator construction and validation were conducted with experts of higher education, stakeholders of the faculty, and intended practitioners from the faculty.

5.2.2.4 Validation through the Accuracy Standard

Through the accuracy standard of evaluation, all of the IQA indicators were constructed through the highly reliable techniques and procedures with defensible information sources. This was because this indicator construction was involved with both qualitative and quantitative approaches. These included reviewing the relevant concepts, guidelines, and research studies on dimensions and indicators of quality of higher education, exploring the specific characteristics of the faculty from experts of higher education and stakeholders of the faculty in Cambodia, verifying the fit of the model, and validating the IQA indicators with intended practitioners from the faculty.

All in all, the model of IQA indicators will be definitively important for faculty of education in Cambodia to ensure educational quality in order that their students for the teaching profession will effectively fulfil the needs of key communities and society. However, this research study involved developing only the model of IQA indicators of faculty of education in Cambodia through important concepts, guidelines, educational quality framework, previous research studies, experts' and stakeholders' perceptions, and intended practitioners' consideration. This excluded the real implementation of the model of IQA indicators, so the criteria for interpreting these IQA indicators were not established.

5.3 Recommendations

Based on the research findings and discussion, the model of IQA indicators is suitable for the context of faculty of education in Cambodia though there have been big challenges and constraints that hamper the effectiveness of the implementation of these indicators. Hence, some recommendations are made for policy making, practice in faculty of education in Cambodia, and further research studies.

5.3.1 Policy Recommendations

1) The MoEYS should set a specific policy aimed at implementing this model of IQA indicators so that faculty of education in Cambodia can use it as a guideline in quality maintenance and enhancement. One more thing that should be put into further consideration or a policy is that those who would like to become teachers of any field in HEIs should take a course related to the teaching profession or have a teaching license before they start their classes because teaching is a profession, not a job.

2) The ACC should set an assessment program in order to assure educational quality of the institutions involved with producing human resources for the teaching career including the Royal Academy of Cambodia, NIE, RTTCs, PTTCs, and PSTTC and pay much more attention to the first three important dimensions of quality during the quality assurance process including quality of academic staff, educational programs, and customers and support services.

5.3.2 Practical Recommendations

1) Faculty of education in Cambodia could use the model of IQA indicators of faculty of education in Cambodia to implement, monitor, assess, improve, and enhance all educational activities and faculty performance in order that the stated criteria of the institution and national or international standards of quality will be met.

2) Faculty of education in Cambodia should pay much more attention to quality of academic staff, educational programs, and customers and support services in order that educational quality is guaranteed within the institution.

3) Faculty of education in Cambodia should further improve some important activities including 1) assessing staff's and academic staff's capacity and capability needs, the needs of key communities and society and job providers, and the achievement levels of faculty's mission and strategic plan; 2) developing and awarding staff and academic staff; 3) providing adequate financial support and facilities for teaching and learning, research activities, and community and faculty development; 4) conducting research related to teaching and learning and community and faculty development; and 5) solving students' and other customers' problems and building good relationship with students, alumni, and other stakeholders so that higher education quality in Cambodia can meets both regional and international standards.

5.3.3 Further Research Recommendations

1) The further research study should be involved with implementing the model of IQA indicators of faculty of education in Cambodia and setting the interpreting criteria for these indicators.

2) The next future research topic should be about causal relationship among the important dimensions or sub-dimensions of quality with student achievement within faculty of education in Cambodia.

3) Another further research topic should be about the pilot of this model of IQA indicators in faculty of education of a university and regional teacher training center in order to assess the whole model with the four standards of evaluation so that an effective evaluation system will be effectively installed and managed during the IQA process of the faculty.

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APPENDICE

Appendix A: Correlation Matrix of 22 Sub-Dimensions

Variable	SL	GG	SKCS	MIS	SP	FIN	CD	TLE	SAI	RP	IQAS	ASRP	ASED	ASE	SA	STF	SES	VC	IS	ASF	FU	FMM
SL	1.000																					
GG	.390**	1.000																				
SKCS	.301**	.427**	1.000																			
MIS	.370**	.469**	.486**	1.000																		
SP	.319**	.463**	.439**	.561**	1.000																	
FIN	.310**	.399**	.426**	.467**	.492**	1.000																
CD	.200**	.265**	.313**	.321**	.329**	.467**	1.000															
TLE	.238**	.249**	.250**	.303**	.294**	.406**	.561**	1.000														
SAI	.200**	.282**	.300**	.302**	.302**	.369**	.442**	.545**	1.000													
RP	.259**	.278**	.317**	.334**	.324**	.374**	.417**	.535**	.531**	1.000												
IQAS	.196**	.252**	.279**	.277**	.255**	.337**	.417**	.430**	.441**	.529**	1.000											
ASRP	.212**	.280**	.295**	.302**	.301**	.327**	.347**	.413**	.377**	.496**	.446**	1.000										
ASED	.223**	.209**	.225**	.235**	.242**	.332**	.362**	.472**	.439**	.469**	.474**	.521**	1.000									
ASE	.170**	.231**	.268**	.248**	.271**	.333**	.353**	.415**	.479**	.447**	.500**	.488**	.522**	1.000								
SA	.193**	.228**	.222**	.299**	.273**	.284**	.308**	.387**	.393**	.384**	.338**	.388**	.419**	.408**	1.000							
STF	.160**	.217**	.220**	.273**	.267**	.299**	.328**	.377**	.374**	.382**	.310**	.341**	.377**	.374**	.446**	1.000						
SES	.176**	.162**	.208**	.225**	.272**	.296**	.342**	.396**	.400**	.384**	.384**	.382**	.422**	.460**	.451**	.509**	1.000					
VC	.108**	.159**	.208**	.221**	.223**	.294**	.351**	.332**	.323**	.308**	.341**	.349**	.361**	.370**	.344**	.356**	.444**	1.000				
IS	.214**	.188**	.182**	.263**	.276**	.334**	.332**	.335**	.316**	.349**	.353**	.344**	.372**	.344**	.320**	.355**	.459**	.508**	1.000			
ASF	.161**	.150**	.111**	.204**	.166**	.182**	.210**	.236**	.171**	.242**	.131**	.292**	.289**	.213**	.166**	.208**	.245**	.276**	.353**	1.000		
FU	.106**	.144**	.137**	.197**	.171**	.193**	.161**	.203**	.231**	.233**	.185**	.228**	.235**	.202**	.199**	.198**	.229**	.253**	.322**	.403**	1.000	
FMM	.146**	.156**	.175**	.256**	.244**	.205**	.136**	.198**	.223**	.224**	.197**	.206**	.224**	.223**	.177**	.191**	.260**	.258**	.328**	.368**	.543**	1.000
Mean	4.395	4.373	4.284	4.342	4.372	4.384	4.391	4.406	4.360	4.356	4.337	4.420	4.379	4.328	4.314	4.374	4.364	4.383	4.400	4.370	4.253	4.169
SD	0.533	0.417	0.481	0.472	0.441	0.410	0.357	0.356	0.458	0.399	0.432	0.456	0.449	0.454	0.517	0.513	0.415	0.462	0.450	0.635	0.657	0.576

Bartlett's Test of Sphericity = 6,550.223 P = .000 df = 231

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) = 0.936

**p<.01

Appendix B: Output of Second Order Confirmatory Factor Analysis

DATE: 7/ 2/2015

TIME: 23:07

L I S R E L 8.72

BY

Karl G. Jöreskog & Dag Sörbom

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The following lines were read from file C:\Program Files\lisrel87\
EQFEC.spl:

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION
DA NI=22 NO=800 MA=CM
LA
SL1 GG2 SKCS3 MIS4 SP5 FIN6 CD7 TLE8 SAI9 RP10 IQAS11 ASRP12 ASED13 ASE14
SA15 STF16 SES17 VC18 IS19 ASF20 FU21 FMM22
KM
1.000
.390 1.000
.301 .427 1.000
.370 .469 .486 1.000
.319 .463 .439 .561 1.000
.310 .399 .426 .467 .492 1.000
.200 .265 .313 .321 .329 .467 1.000
.238 .249 .250 .303 .294 .406 .561 1.000
.200 .282 .300 .302 .302 .369 .442 .545 1.000

```
.259 .278 .317 .334 .324 .374 .417 .535 .531 1.000
.196 .252 .279 .277 .255 .337 .417 .430 .441 .529 1.000
.212 .280 .295 .302 .301 .327 .347 .413 .377 .496 .446 1.000
.223 .209 .225 .235 .242 .332 .362 .472 .439 .469 .474 .521 1.000
.170 .231 .268 .248 .271 .333 .353 .415 .479 .447 .500 .488 .522 1.000
.193 .228 .222 .299 .273 .284 .308 .387 .393 .384 .338 .388 .419 .408 1.000
.160 .217 .220 .273 .267 .299 .328 .377 .374 .382 .310 .341 .377 .374 .446
.000
.176 .162 .208 .225 .272 .296 .342 .396 .400 .384 .384 .382 .422 .460 .451
.509 1.000
.108 .159 .208 .221 .223 .294 .351 .332 .323 .308 .341 .349 .361 .370 .344
.356 .444 1.000
.214 .188 .182 .263 .276 .334 .332 .335 .316 .349 .353 .344 .372 .344 .320
.355 .459 .508 1.000
.161 .150 .111 .204 .166 .182 .210 .236 .171 .242 .131 .292 .289 .213 .166
.208 .245 .276 .353 1.000
.106 .144 .137 .197 .171 .193 .161 .203 .231 .233 .185 .228 .235 .202 .199
.198 .229 .253 .322 .403 1.000
.146 .156 .175 .256 .244 .205 .136 .198 .223 .224 .197 .206 .224 .223 .177
.191 .260 .258 .328 .368 .543 1.000
ME
4.395 4.373 4.284 4.342 4.372 4.384 4.391 4.406 4.360 4.356 4.337 4.420
4.379 4.328 4.314 4.374 4.364 4.383 4.400 4.370 4.253 4.169
SD
0.533 0.417 0.481 0.472 0.441 0.410 0.357 0.356 0.458 0.399 0.432 0.456
0.449 0.454 0.517 0.513 0.415 0.462 0.450 0.635 0.657 0.576
MO NK=1 NE=6 NY=22 GA=FU,FR PH=SY,FR PS=DI,FR LY=FU,FI TE=FU,FI
FR LY(1,1) LY(2,1) LY(3,1) LY(4,2) LY(5,2) LY(6,2) LY(7,3) LY(8,3) LY(9,3)
LY(10,3) LY(11,3) LY(12,4) LY(13,4) LY(14,4) LY(15,5) LY(16,5) LY(17,5)
LY(18,5) LY(19,5) LY(20,6) LY(21,6) LY(22,6)
FR TE(1,1) TE(2,2) TE(3,3) TE(4,4) TE(5,5) TE(6,6) TE(7,7) TE(8,8) TE(9,9)
TE(10,10) TE(11,11) TE(12,12) TE(13,13) TE(14,14) TE(15,15) TE(16,16)
TE(17,17) TE(18,18) TE(19,19) TE(20,20) TE(21,21) TE(22,22) TE(19,18)
TE(8,7) TE(7,6) TE(5,4) TE(4,3) TE(4,2) TE(5,2) TE(5,3) TE(4,1) TE(5,1)
TE(6,3) TE(6,2) TE(6,1) TE(14,11) TE(22,21) TE(20,19) TE(20,11) TE(20,9)
TE(12,9) TE(11,8) TE(11,9) TE(8,6) TE(22,19) TE(21,19) TE(17,14) TE(17,16)
TE(19,15) TE(20,15) TE(18,1) TE(12,10) TE(3,1) TE(18,15) TE(14,9) TE(16,11)
```

TE(7,3) TE(18,7) TE(7,5) TE(7,4) TE(7,2) TE(22,7) TE(22,5) TE(22,4)
TE(15,4)
LE
LEA.SHI MSPF EDU.PRO QAS CSS PH.FA
LK
EQFEC
PATH DIAGRAM
OU SE TV EF SS MI RS FS SC ND=3
SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Number of Input Variables 22
Number of Y - Variables 22
Number of X - Variables 0
Number of ETA - Variables 6
Number of KSI - Variables 1
Number of Observations 800

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Covariance Matrix

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	0.284					
GG2	0.087	0.174				
SKCS3	0.077	0.086	0.231			
MIS4	0.093	0.092	0.110	0.223		
SP5	0.075	0.085	0.093	0.117	0.194	
FIN6	0.068	0.068	0.084	0.090	0.089	0.168
CD7	0.038	0.039	0.054	0.054	0.052	0.068
TLE8	0.045	0.037	0.043	0.051	0.046	0.059
SAI9	0.049	0.054	0.066	0.065	0.061	0.069
RP10	0.055	0.046	0.061	0.063	0.057	0.061
IQAS11	0.045	0.045	0.058	0.056	0.049	0.060
ASRP12	0.052	0.053	0.065	0.065	0.061	0.061
ASED13	0.053	0.039	0.049	0.050	0.048	0.061
ASE14	0.041	0.044	0.059	0.053	0.054	0.062
SA15	0.053	0.049	0.055	0.073	0.062	0.060

STF16	0.044	0.046	0.054	0.066	0.060	0.063
SES17	0.039	0.028	0.042	0.044	0.050	0.050
VC18	0.027	0.031	0.046	0.048	0.045	0.056
IS19	0.051	0.035	0.039	0.056	0.055	0.062
ASF20	0.054	0.040	0.034	0.061	0.046	0.047
FU21	0.037	0.039	0.043	0.061	0.050	0.052
FMM22	0.045	0.037	0.048	0.070	0.062	0.048

Covariance Matrix

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	0.127					
TLE8	0.071	0.127				
SAI9	0.072	0.089	0.210			
RP10	0.059	0.076	0.097	0.159		
IQAS11	0.064	0.066	0.087	0.091	0.187	
ASRP12	0.056	0.067	0.079	0.090	0.088	0.208
ASED13	0.058	0.075	0.090	0.084	0.092	0.107
ASE14	0.057	0.067	0.100	0.081	0.098	0.101
SA15	0.057	0.071	0.093	0.079	0.075	0.091
STF16	0.060	0.069	0.088	0.078	0.069	0.080
SES17	0.051	0.059	0.076	0.064	0.069	0.072
VC18	0.058	0.055	0.068	0.057	0.068	0.074
IS19	0.053	0.054	0.065	0.063	0.069	0.071
ASF20	0.048	0.053	0.050	0.061	0.036	0.085
FU21	0.038	0.047	0.070	0.061	0.053	0.068
FMM22	0.028	0.041	0.059	0.051	0.049	0.054

Covariance Matrix

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	0.202					
ASE14	0.106	0.206				
SA15	0.097	0.096	0.267			
STF16	0.087	0.087	0.118	0.263		
SES17	0.079	0.087	0.097	0.108	0.172	

VC18	0.075	0.078	0.082	0.084	0.085	0.213
IS19	0.075	0.070	0.074	0.082	0.086	0.106
ASF20	0.082	0.061	0.054	0.068	0.065	0.081
FU21	0.069	0.060	0.068	0.067	0.062	0.077
FMM22	0.058	0.058	0.053	0.056	0.062	0.069

Covariance Matrix

	IS19	ASF20	FU21	FMM22
IS19	0.203			
ASF20	0.101	0.403		
FU21	0.095	0.168	0.432	
FMM22	0.085	0.135	0.205	0.332

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Parameter Specifications

LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	0	0	0	0	0	0
GG2	1	0	0	0	0	0
SKCS3	2	0	0	0	0	0
MIS4	0	0	0	0	0	0
SP5	0	3	0	0	0	0
FIN6	0	4	0	0	0	0
CD7	0	0	0	0	0	0
TLE8	0	0	5	0	0	0
SAI9	0	0	6	0	0	0
RP10	0	0	7	0	0	0
IQAS11	0	0	8	0	0	0
ASRP12	0	0	0	0	0	0
ASED13	0	0	0	9	0	0
ASE14	0	0	0	10	0	0
SA15	0	0	0	0	0	0

STF16	0	0	0	0	11	0
SES17	0	0	0	0	12	0
VC18	0	0	0	0	13	0
IS19	0	0	0	0	14	0
ASF20	0	0	0	0	0	0
FU21	0	0	0	0	0	15
FMM22	0	0	0	0	0	16

GAMMA

	EQFEC
LEA.SHI	17
MSPF	18
EDU.PRO	19
QAS	20
CSS	21
PH.FA	22

PSI

LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
23	24	25	26	27	28

THETA-EPS

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	29					
GG2	0	30				
SKCS3	31	0	32			
MIS4	33	34	35	36		
SP5	37	38	39	40	41	
FIN6	42	43	44	0	0	45
CD7	0	46	47	48	49	50
TLE8	0	0	0	0	0	52
SAI9	0	0	0	0	0	0

RP10	0	0	0	0	0	0
IQAS11	0	0	0	0	0	0
ASRP12	0	0	0	0	0	0
ASED13	0	0	0	0	0	0
ASE14	0	0	0	0	0	0
SA15	0	0	0	67	0	0
STF16	0	0	0	0	0	0
SES17	0	0	0	0	0	0
VC18	74	0	0	0	0	0
IS19	0	0	0	0	0	0
ASF20	0	0	0	0	0	0
FU21	0	0	0	0	0	0
FMM22	0	0	0	88	89	0

THETA-EPS

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	51					
TLE8	53	54				
SAI9	0	0	55			
RP10	0	0	0	56		
IQAS11	0	57	58	0	59	
ASRP12	0	0	60	61	0	62
ASED13	0	0	0	0	0	0
ASE14	0	0	64	0	65	0
SA15	0	0	0	0	0	0
STF16	0	0	0	0	69	0
SES17	0	0	0	0	0	0
VC18	75	0	0	0	0	0
IS19	0	0	0	0	0	0
ASF20	0	0	81	0	82	0
FU21	0	0	0	0	0	0
FMM22	90	0	0	0	0	0

THETA-EPS

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	63					
ASE14	0	66				
SA15	0	0	68			
STF16	0	0	0	70		
SES17	0	71	0	72	73	
VC18	0	0	76	0	0	77
IS19	0	0	78	0	0	79
ASF20	0	0	83	0	0	0
FU21	0	0	0	0	0	0
FMM22	0	0	0	0	0	0

THETA-EPS

	IS19	ASF20	FU21	FMM22
IS19	80			
ASF20	84	85		
FU21	86	0	87	
FMM22	91	0	92	93

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Number of Iterations = 21

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	0.312	- -	- -	- -	- -	- -
GG2	0.269	- -	- -	- -	- -	- -
	(0.029)					
	9.147					

SKCS3	0.321 (0.030) 10.797	- -	- -	- -	- -	- -
MIS4	- -	0.292	- -	- -	- -	- -
SP5	- -	0.282 (0.018) 15.463	- -	- -	- -	- -
FIN6	- -	0.309 (0.025) 12.378	- -	- -	- -	- -
CD7	- -	- -	0.210	- -	- -	- -
TLE8	- -	- -	0.260 (0.015) 17.635	- -	- -	- -
SAI9	- -	- -	0.333 (0.022) 15.231	- -	- -	- -
RP10	- -	- -	0.293 (0.019) 15.723	- -	- -	- -
IQAS11	- -	- -	0.308 (0.021) 14.834	- -	- -	- -
ASRP12	- -	- -	- -	0.320	- -	- -
ASED13	- -	- -	- -	0.333 (0.018) 18.116	- -	- -

ASE14	- -	- -	- -	0.317	- -	- -
				(0.018)		
				17.189		
SA15	- -	- -	- -	- -	0.346	- -
STF16	- -	- -	- -	- -	0.321	- -
					(0.023)	
					14.176	
SES17	- -	- -	- -	- -	0.289	- -
					(0.019)	
					15.476	
VC18	- -	- -	- -	- -	0.280	- -
					(0.020)	
					13.684	
IS19	- -	- -	- -	- -	0.278	- -
					(0.020)	
					13.604	
ASF20	- -	- -	- -	- -	- -	0.417
FU21	- -	- -	- -	- -	- -	0.390
						(0.043)
						9.102
FMM22	- -	- -	- -	- -	- -	0.320
						(0.036)
						8.805

GAMMA

	EQFEC

LEA.SHI	0.578
	(0.056)
	10.330

MSPF	0.686
	(0.055)
	12.455
EDU.PRO	0.906
	(0.057)
	15.938
QAS	0.939
	(0.048)
	19.560
CSS	0.872
	(0.050)
	17.316
PH.FA	0.599
	(0.056)
	10.634

Covariance Matrix of ETA and KSI

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
LEA.SHI	1.000					
MSPF	0.396	1.000				
EDU.PRO	0.524	0.621	1.000			
QAS	0.543	0.644	0.850	1.000		
CSS	0.504	0.598	0.790	0.818	1.000	
PH.FA	0.346	0.410	0.542	0.562	0.522	1.000
EQFEC	0.578	0.686	0.906	0.939	0.872	0.599

Covariance Matrix of ETA and KSI

	EQFEC
EQFEC	1.000

PHI

EQFEC
1.000

PSI

Note: This matrix is diagonal.

LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
0.666	0.530	0.179	0.119	0.240	0.642
(0.117)	(0.076)	(0.034)	(0.035)	(0.043)	(0.102)
5.670	6.957	5.224	3.414	5.580	6.317

Squared Multiple Correlations for Structural Equations

LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
0.334	0.470	0.821	0.881	0.760	0.358

THETA-EPS

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	0.186					
	(0.015)					
	12.812					
GG2	- -	0.101				
		(0.008)				
		12.591				
SKCS3	-0.024	- -	0.128			
	(0.010)		(0.012)			
	-2.284		10.457			

MIS4	0.055	0.060	0.072	0.136		
	(0.008)	(0.006)	(0.007)	(0.009)		
	7.118	9.541	10.066	14.536		
SP5	0.038	0.054	0.056	0.033	0.114	
	(0.007)	(0.006)	(0.007)	(0.007)	(0.008)	
	5.392	9.247	8.471	4.713	13.998	
FIN6	0.029	0.035	0.044	- -	- -	0.072
	(0.006)	(0.005)	(0.006)			(0.007)
	4.627	6.840	7.573			10.171
CD7	- -	0.008	0.017	0.013	0.014	0.026
		(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
		2.284	3.762	3.153	3.617	6.911
TLE8	- -	- -	- -	- -	- -	0.009
						(0.003)
						2.738
SAI9	- -	- -	- -	- -	- -	- -
RP10	- -	- -	- -	- -	- -	- -
IQAS11	- -	- -	- -	- -	- -	- -
ASRP12	- -	- -	- -	- -	- -	- -
ASED13	- -	- -	- -	- -	- -	- -
ASE14	- -	- -	- -	- -	- -	- -
SA15	- -	- -	- -	0.012	- -	- -
				(0.005)		
				2.253		
STF16	- -	- -	- -	- -	- -	- -

SES17	- -	- -	- -	- -	- -	- -
VC18	-0.016	- -	- -	- -	- -	- -
	(0.006)					
	-2.586					
IS19	- -	- -	- -	- -	- -	- -
ASF20	- -	- -	- -	- -	- -	- -
FU21	- -	- -	- -	- -	- -	- -
FMM22	- -	- -	- -	0.016	0.017	- -
				(0.006)	(0.006)	
				2.641	2.837	

THETA-EPS

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	0.083					
	(0.005)					
	18.365					
TLE8	0.017	0.059				
	(0.003)	(0.004)				
	5.401	15.524				
SAI9	- -	- -	0.098			
			(0.006)			
			15.503			
RP10	- -	- -	- -	0.073		
				(0.004)		
				16.572		
IQAS11	- -	-0.013	-0.015	- -	0.091	
		(0.003)	(0.005)		(0.006)	
		-4.029	-3.216		14.927	

ASRP12	- -	- -	-0.010	0.010	- -	0.106
			(0.005)	(0.004)		(0.007)
			-2.119	2.504		16.125
ASED13	- -	- -	- -	- -	- -	- -
ASE14	- -	- -	0.010	- -	0.013	- -
			(0.005)		(0.004)	
			2.191		2.896	
SA15	- -	- -	- -	- -	- -	- -
STF16	- -	- -	- -	- -	-0.011	- -
					(0.005)	
					-2.272	
SES17	- -	- -	- -	- -	- -	- -
VC18	0.010	- -	- -	- -	- -	- -
	(0.004)					
	2.717					
IS19	- -	- -	- -	- -	- -	- -
ASF20	- -	- -	-0.021	- -	-0.030	- -
			(0.007)		(0.007)	
			-3.104		-4.610	
FU21	- -	- -	- -	- -	- -	- -
FMM22	-0.009	- -	- -	- -	- -	- -
	(0.005)					
	-1.984					

THETA-EPS

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	0.091					
	(0.006)					
	15.135					
ASE14	- -	0.106				
		(0.007)				
		16.187				
SA15	- -	- -	0.148			
			(0.010)			
			15.500			
STF16	- -	- -	- -	0.160		
				(0.009)		
				16.914		
SES17	- -	0.011	- -	0.015	0.089	
		(0.004)		(0.005)	(0.006)	
		2.845		2.854	15.783	
VC18	- -	- -	-0.014	- -	- -	0.135
			(0.006)			(0.008)
			-2.193			16.672
IS19	- -	- -	-0.021	- -	- -	0.024
			(0.006)			(0.006)
			-3.518			4.237
ASF20	- -	- -	-0.022	- -	- -	- -
			(0.008)			
			-2.712			
FU21	- -	- -	- -	- -	- -	- -

FMM22	- -	- -	- -	- -	- -	- -

THETA-EPS

	IS19	ASF20	FU21	FMM22
IS19	0.123			
	(0.007)			
	16.465			
ASF20	0.034	0.227		
	(0.008)	(0.021)		
	4.387	10.970		
FU21	0.033	- -	0.280	
	(0.008)		(0.021)	
	4.153		13.084	
FMM22	0.030	- -	0.078	0.228
	(0.007)		(0.015)	(0.016)
	4.328		5.173	14.078

Squared Multiple Correlations for Y - Variables

SL1	GG2	SKCS3	MIS4	SP5	FIN6
0.343	0.417	0.447	0.386	0.412	0.570

Squared Multiple Correlations for Y - Variables

CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
0.348	0.532	0.530	0.539	0.510	0.492

Squared Multiple Correlations for Y - Variables

ASED13	ASE14	SA15	STF16	SES17	VC18
0.548	0.488	0.447	0.391	0.484	0.367

Squared Multiple Correlations for Y - Variables

IS19	ASF20	FU21	FMM22
0.385	0.434	0.352	0.310

Goodness of Fit Statistics

Degrees of Freedom = 160
Minimum Fit Function Chi-Square = 162.276 (P = 0.435)
Normal Theory Weighted Least Squares Chi-Square = 162.120 (P = 0.438)
Estimated Non-centrality Parameter (NCP) = 2.120
90 Percent Confidence Interval for NCP = (0.0 ; 36.223)

Minimum Fit Function Value = 0.203
Population Discrepancy Function Value (F0) = 0.00265
90 Percent Confidence Interval for F0 = (0.0 ; 0.0453)
Root Mean Square Error of Approximation (RMSEA) = 0.00407
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.0168)
P-Value for Test of Close Fit (RMSEA < 0.05) = 1.000

Expected Cross-Validation Index (ECVI) = 0.436
90 Percent Confidence Interval for ECVI = (0.433 ; 0.478)
ECVI for Saturated Model = 0.633
ECVI for Independence Model = 24.825

Chi-Square for Independence Model with 231 Degrees of Freedom = 19791.255
Independence AIC = 19835.255
Model AIC = 348.120
Saturated AIC = 506.000
Independence CAIC = 19960.316
Model CAIC = 876.789
Saturated CAIC = 1944.207

Normed Fit Index (NFI) = 0.992
Non-Normed Fit Index (NNFI) = 1.00
Parsimony Normed Fit Index (PNFI) = 0.687
Comparative Fit Index (CFI) = 1.00

Incremental Fit Index (IFI) = 1.00

Relative Fit Index (RFI) = 0.988

Critical N (CN) = 1008.052

Root Mean Square Residual (RMR) = 0.00539

Standardized RMR = 0.0231

Goodness of Fit Index (GFI) = 0.982

Adjusted Goodness of Fit Index (AGFI) = 0.971

Parsimony Goodness of Fit Index (PGFI) = 0.621

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Fitted Covariance Matrix

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	0.284					
GG2	0.084	0.174				
SKCS3	0.077	0.087	0.231			
MIS4	0.091	0.091	0.109	0.221		
SP5	0.073	0.085	0.092	0.115	0.193	
FIN6	0.067	0.068	0.084	0.090	0.087	0.168
CD7	0.034	0.038	0.052	0.051	0.051	0.067
TLE8	0.042	0.037	0.044	0.047	0.046	0.058
SAI9	0.054	0.047	0.056	0.060	0.058	0.064
RP10	0.048	0.041	0.049	0.053	0.051	0.056
IQAS11	0.050	0.043	0.052	0.056	0.054	0.059
ASRP12	0.054	0.047	0.056	0.060	0.058	0.064
ASED13	0.056	0.049	0.058	0.063	0.060	0.066
ASE14	0.054	0.046	0.055	0.060	0.058	0.063
SA15	0.054	0.047	0.056	0.072	0.058	0.064
STF16	0.050	0.043	0.052	0.056	0.054	0.059
SES17	0.045	0.039	0.047	0.050	0.049	0.053
VC18	0.028	0.038	0.045	0.049	0.047	0.052
IS19	0.044	0.038	0.045	0.048	0.047	0.051
ASF20	0.045	0.039	0.046	0.050	0.048	0.053
FU21	0.042	0.036	0.043	0.047	0.045	0.049
FMM22	0.035	0.030	0.036	0.054	0.054	0.041

Fitted Covariance Matrix

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	0.127					
TLE8	0.071	0.127				
SAI9	0.070	0.086	0.209			
RP10	0.062	0.076	0.098	0.159		
IQAS11	0.065	0.067	0.088	0.090	0.186	
ASRP12	0.057	0.071	0.081	0.089	0.084	0.208
ASED13	0.060	0.073	0.094	0.083	0.087	0.106
ASE14	0.057	0.070	0.100	0.079	0.096	0.101
SA15	0.057	0.071	0.091	0.080	0.084	0.090
STF16	0.053	0.066	0.084	0.074	0.067	0.084
SES17	0.048	0.059	0.076	0.067	0.070	0.075
VC18	0.056	0.057	0.074	0.065	0.068	0.073
IS19	0.046	0.057	0.073	0.064	0.068	0.073
ASF20	0.048	0.059	0.054	0.066	0.039	0.075
FU21	0.045	0.055	0.070	0.062	0.065	0.070
FMM22	0.028	0.045	0.058	0.051	0.054	0.057

Fitted Covariance Matrix

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	0.202					
ASE14	0.105	0.206				
SA15	0.094	0.090	0.267			
STF16	0.087	0.083	0.111	0.263		
SES17	0.079	0.086	0.100	0.108	0.172	
VC18	0.076	0.073	0.083	0.090	0.081	0.213
IS19	0.076	0.072	0.075	0.089	0.080	0.102
ASF20	0.078	0.074	0.053	0.070	0.063	0.061
FU21	0.073	0.069	0.070	0.065	0.059	0.057
FMM22	0.060	0.057	0.058	0.054	0.048	0.047

Fitted Covariance Matrix

	IS19	ASF20	FU21	FMM22
IS19	0.200			
ASF20	0.094	0.401		
FU21	0.090	0.163	0.432	
FMM22	0.077	0.134	0.203	0.330

Fitted Residuals

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	0.001					
GG2	0.003	0.000				
SKCS3	0.001	-0.001	0.000			
MIS4	0.002	0.001	0.001	0.002		
SP5	0.002	0.001	0.002	0.002	0.001	
FIN6	0.001	0.000	0.000	0.000	0.002	0.000
CD7	0.004	0.001	0.002	0.003	0.001	0.001
TLE8	0.003	0.000	-0.001	0.004	0.001	0.001
SAI9	-0.006	0.007	0.010	0.005	0.003	0.005
RP10	0.007	0.005	0.012	0.010	0.006	0.005
IQAS11	-0.005	0.002	0.006	0.001	-0.005	0.000
ASRP12	-0.003	0.007	0.009	0.005	0.002	-0.002
ASED13	-0.003	-0.009	-0.009	-0.013	-0.012	-0.005
ASE14	-0.012	-0.003	0.003	-0.006	-0.003	-0.001
SA15	-0.001	0.002	-0.001	0.001	0.004	-0.004
STF16	-0.007	0.003	0.002	0.010	0.006	0.004
SES17	-0.006	-0.011	-0.005	-0.006	0.001	-0.003
VC18	-0.001	-0.007	0.001	-0.001	-0.002	0.004
IS19	0.008	-0.002	-0.006	0.007	0.008	0.010
ASF20	0.009	0.001	-0.013	0.011	-0.002	-0.006
FU21	-0.005	0.003	0.000	0.014	0.004	0.002
FMM22	0.010	0.008	0.013	0.015	0.008	0.008

Fitted Residuals

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	0.000					
TLE8	0.000	0.000				
SAI9	0.002	0.002	0.001			
RP10	-0.002	0.000	0.000	0.000		
IQAS11	-0.001	-0.001	-0.001	0.001	0.000	
ASRP12	-0.001	-0.004	-0.002	0.001	0.004	0.000
ASED13	-0.001	0.002	-0.004	0.001	0.005	0.000
ASE14	0.000	-0.003	0.000	0.002	0.002	0.000
SA15	-0.001	0.000	0.002	-0.001	-0.009	0.001
STF16	0.007	0.003	0.004	0.004	0.002	-0.004
SES17	0.003	-0.001	0.000	-0.003	-0.001	-0.003
VC18	0.002	-0.003	-0.005	-0.008	0.000	0.000
IS19	0.007	-0.003	-0.008	-0.002	0.001	-0.002
ASF20	0.000	-0.005	-0.005	-0.005	-0.004	0.010
FU21	-0.007	-0.007	-0.001	-0.001	-0.013	-0.002
FMM22	0.000	-0.004	0.001	0.001	-0.004	-0.003

Fitted Residuals

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	0.000					
ASE14	0.001	0.000				
SA15	0.003	0.006	0.000			
STF16	0.000	0.004	0.007	0.000		
SES17	0.000	0.001	-0.003	0.000	0.000	
VC18	-0.001	0.005	-0.001	-0.005	0.004	0.001
IS19	0.000	-0.002	-0.001	-0.007	0.006	0.004
ASF20	0.004	-0.013	0.002	-0.002	0.002	0.020
FU21	-0.004	-0.009	-0.003	0.001	0.004	0.020
FMM22	-0.002	0.001	-0.005	0.003	0.014	0.022

Fitted Residuals

	IS19	ASF20	FU21	FMM22
IS19	0.002			
ASF20	0.007	0.002		
FU21	0.005	0.005	0.000	
FMM22	0.008	0.001	0.002	0.002

Summary Statistics for Fitted Residuals

Smallest Fitted Residual = -0.013
Median Fitted Residual = 0.001
Largest Fitted Residual = 0.022

Stemleaf Plot

```
-12|977555
-10|1
- 8|4427
- 6|9943176543
- 4|66554322210097551
- 2|97655333210099876554221O
- 0|98877554211199998777776666554431111000O0
  0|11111111223333344444555555556677777899900000111123334556666677788 99
  2|000112223344556788999112256778 99
  4|001144579990133467
  6|113668923447789
  8|440568
 10|013316
 12|9
 14|031
 16|
 18|9
 20|1
 22|0
```

Standardized Residuals

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	0.931					
GG2	1.132	0.957				
SKCS3	0.436	-0.502	1.050			
MIS4	1.566	1.338	1.688	1.922		
SP5	1.412	1.005	2.305	2.189	2.141	
FIN6	0.385	0.222	0.254	0.036	1.329	0.864
CD7	0.688	0.772	0.901	1.516	0.449	1.341
TLE8	0.570	0.111	-0.216	0.966	0.176	0.607
SAI9	-0.880	1.600	1.883	0.962	0.566	1.386
RP10	1.339	1.333	2.502	2.236	1.417	1.493
IQAS11	-0.869	0.465	1.189	0.106	-1.237	0.123
ASRP12	-0.402	1.532	1.697	0.984	0.543	-0.645
ASED13	-0.485	-2.367	-1.887	-2.712	-2.908	-1.440
ASE14	-2.005	-0.596	0.611	-1.298	-0.730	-0.294
SA15	-0.147	0.419	-0.120	0.203	0.690	-0.761
STF16	-0.856	0.524	0.352	1.589	1.076	0.721
SES17	-1.072	-2.625	-1.021	-1.305	0.248	-0.789
VC18	-0.314	-1.412	0.156	-0.106	-0.320	0.872
IS19	1.141	-0.479	-0.950	1.325	1.544	2.337
ASF20	0.923	0.112	-1.395	1.300	-0.235	-0.818
FU21	-0.452	0.380	-0.008	1.566	0.516	0.335
FMM22	1.069	1.048	1.520	2.749	1.694	1.177

Standardized Residuals

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	0.245					
TLE8	0.182	0.533				
SAI9	0.819	1.293	1.490			
RP10	-0.956	-0.026	-0.211	0.223		
IQAS11	-0.228	-0.804	-0.866	0.412	0.680	
ASRP12	-0.197	-1.226	-2.061	0.902	1.156	1.262
ASED13	-0.449	0.746	-1.138	0.410	1.438	0.191

ASE14	0.137	-1.037	-0.091	0.644	1.640	-0.103
SA15	-0.139	0.088	0.449	-0.180	-1.916	0.232
STF16	1.518	0.809	0.721	0.950	0.784	-0.845
SES17	0.804	-0.235	0.040	-0.998	-0.410	-0.889
VC18	0.734	-0.772	-1.140	-2.011	-0.004	0.100
IS19	1.839	-0.973	-1.825	-0.411	0.243	-0.470
ASF20	-0.002	-1.087	-1.614	-0.895	-1.289	1.511
FU21	-1.040	-1.322	-0.128	-0.137	-1.834	-0.239
FMM22	0.119	-0.875	0.161	0.119	-0.717	-0.513

Standardized Residuals

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	- -					
ASE14	0.427	-0.301				
SA15	0.737	1.307	0.151			
STF16	-0.094	0.816	1.769	0.833		
SES17	0.036	0.496	-1.044	0.817	1.304	
VC18	-0.282	1.145	-0.682	-1.253	1.544	1.238
IS19	-0.096	-0.414	-0.536	-1.782	2.051	3.457
ASF20	0.753	-2.035	0.438	-0.248	0.276	2.621
FU21	-0.528	-1.285	-0.311	0.160	0.533	2.381
FMM22	-0.302	0.202	-0.628	0.354	2.234	2.948

Standardized Residuals

	IS19	ASF20	FU21	FMM22
IS19	3.777			
ASF20	2.450	1.160		
FU21	1.914	1.418	-0.172	
FMM22	3.127	0.280	1.508	1.491

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -2.908
Median Standardized Residual = 0.245
Largest Standardized Residual = 3.777

Stemleaf Plot

- 2|976
- 2|41000
- 1|998886
- 1|4443333332211110000000
- 0|999999988888877766655555555
- 0|444443333333222222222111111111100000000
  0|11111111122222222222222333344444444444444
  0|555555566666777777778888888889999999
  1|000000011111122222333333333344444
  1|555555555556666677788999
  2|112223344
  2|5679
  3|1
  3|58

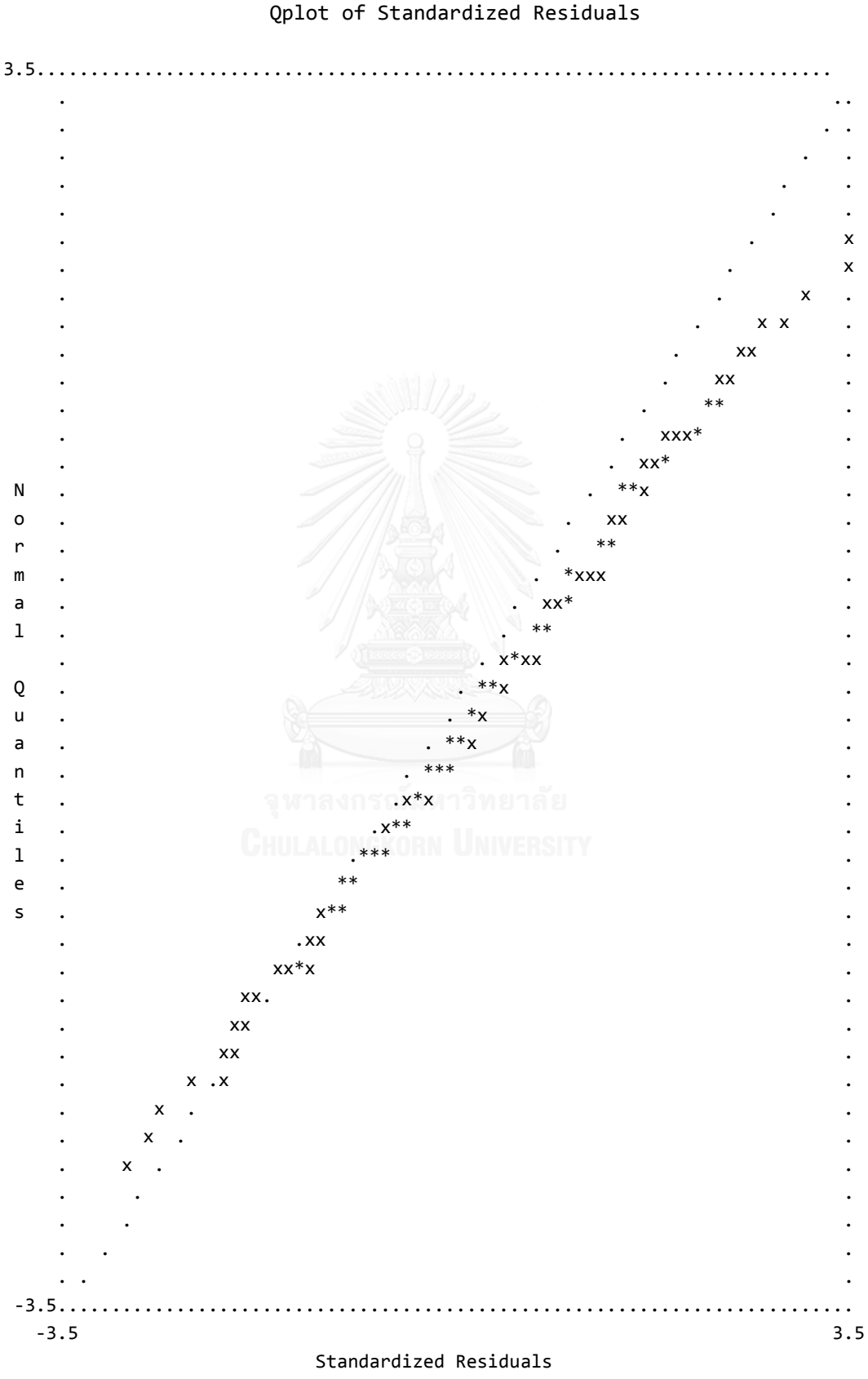
Largest Negative Standardized Residuals

Residual for	ASED13	and	MIS4	-2.712
Residual for	ASED13	and	SP5	-2.908
Residual for	SES17	and	GG2	-2.625

Largest Positive Standardized Residuals

Residual for	IS19	and	VC18	3.457
Residual for	IS19	and	IS19	3.777
Residual for	ASF20	and	VC18	2.621
Residual for	FMM22	and	MIS4	2.749
Residual for	FMM22	and	VC18	2.948
Residual for	FMM22	and	IS19	3.127

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION



SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Modification Indices and Expected Change

Modification Indices for LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	- -	0.524	0.444	0.741	0.129	0.000
GG2	- -	- -	1.037	0.060	2.676	0.184
SKCS3	- -	0.524	1.329	0.843	0.142	0.172
MIS4	0.455	- -	1.293	0.000	0.234	4.392
SP5	0.455	- -	0.955	0.680	0.250	0.638
FIN6	- -	- -	0.364	0.266	0.084	0.463
CD7	0.901	1.282	- -	0.264	3.384	0.105
TLE8	0.865	0.098	- -	0.903	0.867	1.163
SAI9	0.586	0.003	- -	1.033	0.603	0.218
RP10	1.376	1.735	- -	0.896	0.130	0.067
IQAS11	0.212	0.847	- -	1.526	0.919	1.994
ASRP12	1.839	0.210	0.050	- -	0.453	1.033
ASED13	0.675	3.113	0.630	- -	0.060	0.143
ASE14	0.000	0.278	0.030	- -	1.826	2.095
SA15	0.071	0.087	0.804	1.106	- -	0.996
STF16	0.013	1.131	3.027	0.446	- -	0.019
SES17	2.515	0.436	0.582	1.019	- -	0.251
VC18	0.001	0.058	1.080	0.137	- -	11.286
IS19	1.647	5.154	0.167	0.206	- -	0.029
ASF20	0.122	0.489	0.728	1.184	0.316	- -
FU21	1.611	0.218	1.141	1.047	0.151	- -
FMM22	3.393	0.624	0.202	0.484	1.677	- -

Expected Change for LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	- -	-0.038	-0.021	-0.029	-0.011	0.000
GG2	- -	- -	0.051	0.019	-0.067	0.009
SKCS3	- -	0.039	0.036	0.032	-0.011	-0.009

MIS4	0.035	- -	0.028	0.000	0.012	0.042
SP5	-0.033	- -	-0.023	-0.022	0.012	-0.015
FIN6	- -	- -	0.031	-0.039	0.011	-0.013
CD7	0.021	0.077	- -	0.016	0.045	-0.006
TLE8	-0.012	0.006	- -	-0.032	-0.023	-0.017
SAI9	0.012	-0.001	- -	-0.055	-0.026	0.012
RP10	0.016	0.020	- -	0.039	-0.010	-0.005
IQAS11	0.007	-0.016	- -	0.063	-0.033	-0.035
ASRP12	0.022	-0.009	0.011	- -	-0.027	0.022
ASED13	-0.013	-0.033	0.038	- -	0.010	0.008
ASE14	0.000	-0.010	-0.009	- -	0.056	-0.031
SA15	0.006	-0.007	-0.042	0.061	- -	-0.031
STF16	-0.002	0.023	0.072	0.033	- -	-0.003
SES17	-0.023	-0.011	-0.026	-0.045	- -	0.010
VC18	-0.001	-0.005	-0.039	0.016	- -	0.080
IS19	-0.021	0.042	-0.015	-0.020	- -	-0.017
ASF20	-0.009	-0.021	-0.080	0.152	0.044	- -
FU21	-0.030	0.012	-0.039	-0.039	-0.014	- -
FMM22	0.041	0.021	0.014	0.022	0.039	- -

Standardized Expected Change for LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	- -	-0.038	-0.021	-0.029	-0.011	0.000
GG2	- -	- -	0.051	0.019	-0.067	0.009
SKCS3	- -	0.039	0.036	0.032	-0.011	-0.009
MIS4	0.035	- -	0.028	0.000	0.012	0.042
SP5	-0.033	- -	-0.023	-0.022	0.012	-0.015
FIN6	- -	- -	0.031	-0.039	0.011	-0.013
CD7	0.021	0.077	- -	0.016	0.045	-0.006
TLE8	-0.012	0.006	- -	-0.032	-0.023	-0.017
SAI9	0.012	-0.001	- -	-0.055	-0.026	0.012
RP10	0.016	0.020	- -	0.039	-0.010	-0.005
IQAS11	0.007	-0.016	- -	0.063	-0.033	-0.035
ASRP12	0.022	-0.009	0.011	- -	-0.027	0.022
ASED13	-0.013	-0.033	0.038	- -	0.010	0.008
ASE14	0.000	-0.010	-0.009	- -	0.056	-0.031

SA15	0.006	-0.007	-0.042	0.061	- -	-0.031
STF16	-0.002	0.023	0.072	0.033	- -	-0.003
SES17	-0.023	-0.011	-0.026	-0.045	- -	0.010
VC18	-0.001	-0.005	-0.039	0.016	- -	0.080
IS19	-0.021	0.042	-0.015	-0.020	- -	-0.017
ASF20	-0.009	-0.021	-0.080	0.152	0.044	- -
FU21	-0.030	0.012	-0.039	-0.039	-0.014	- -
FMM22	0.041	0.021	0.014	0.022	0.039	- -

Completely Standardized Expected Change for LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	- -	-0.071	-0.039	-0.055	-0.021	0.001
GG2	- -	- -	0.123	0.046	-0.160	0.022
SKCS3	- -	0.081	0.074	0.066	-0.023	-0.019
MIS4	0.073	- -	0.059	0.000	0.026	0.090
SP5	-0.076	- -	-0.053	-0.050	0.027	-0.035
FIN6	- -	- -	0.076	-0.095	0.028	-0.033
CD7	0.060	0.216	- -	0.046	0.127	-0.016
TLE8	-0.033	0.016	- -	-0.089	-0.064	-0.047
SAI9	0.027	-0.002	- -	-0.120	-0.057	0.026
RP10	0.039	0.050	- -	0.099	-0.025	-0.012
IQAS11	0.017	-0.038	- -	0.146	-0.077	-0.081
ASRP12	0.049	-0.019	0.025	- -	-0.059	0.049
ASED13	-0.029	-0.073	0.084	- -	0.022	0.018
ASE14	0.000	-0.022	-0.020	- -	0.123	-0.068
SA15	0.011	-0.014	-0.081	0.118	- -	-0.061
STF16	-0.004	0.045	0.140	0.064	- -	-0.007
SES17	-0.056	-0.027	-0.062	-0.108	- -	0.023
VC18	-0.001	-0.011	-0.084	0.036	- -	0.174
IS19	-0.047	0.095	-0.033	-0.044	- -	-0.037
ASF20	-0.014	-0.034	-0.126	0.241	0.069	- -
FU21	-0.046	0.019	-0.059	-0.060	-0.021	- -
FMM22	0.072	0.037	0.024	0.038	0.068	- -

No Non-Zero Modification Indices for GAMMA

No Non-Zero Modification Indices for PHI

Modification Indices for PSI

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
LEA.SHI	- -					
MSPF	- -	- -				
EDU.PRO	2.131	0.528	- -			
QAS	0.109	4.660	1.465	- -		
CSS	4.054	2.055	3.450	0.939	- -	
PH.FA	0.000	0.182	3.441	0.001	3.786	- -

Expected Change for PSI

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
LEA.SHI	- -					
MSPF	- -	- -				
EDU.PRO	0.035	0.017	- -			
QAS	0.008	-0.051	0.044	- -		
CSS	-0.053	0.036	-0.058	0.032	- -	
PH.FA	-0.001	0.015	-0.059	-0.001	0.072	- -

Standardized Expected Change for PSI

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
LEA.SHI	- -					
MSPF	- -	- -				
EDU.PRO	0.035	0.017	- -			
QAS	0.008	-0.051	0.044	- -		
CSS	-0.053	0.036	-0.058	0.032	- -	
PH.FA	-0.001	0.015	-0.059	-0.001	0.072	- -

Modification Indices for THETA-EPS

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	- -					
GG2	0.524	- -				
SKCS3	- -	0.524	- -			
MIS4	- -	- -	- -	- -		
SP5	- -	- -	- -	- -	- -	
FIN6	- -	- -	- -	0.455	0.455	- -
CD7	0.464	- -	- -	- -	- -	- -
TLE8	0.339	0.112	1.495	0.538	0.001	- -
SAI9	2.330	2.169	0.989	0.000	0.082	0.119
RP10	0.924	0.297	1.457	0.270	0.309	0.304
IQAS11	0.789	0.733	0.284	0.339	3.053	0.026
ASRP12	0.803	2.054	1.346	0.233	0.078	1.601
ASED13	1.333	1.114	1.003	2.196	1.529	0.036
ASE14	1.671	0.003	0.947	1.613	0.008	0.120
SA15	0.045	0.591	0.338	- -	0.722	1.141
STF16	2.263	0.814	0.021	2.019	0.010	0.016
SES17	0.110	4.367	0.027	1.619	1.572	0.272
VC18	- -	1.045	0.829	0.103	0.669	0.417
IS19	2.161	0.638	4.397	0.105	1.346	2.786
ASF20	0.730	0.250	2.729	1.955	0.603	1.844
FU21	1.582	0.008	0.206	1.067	0.016	0.099
FMM22	0.791	0.012	2.074	- -	- -	0.109

Modification Indices for THETA-EPS

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	- -					
TLE8	- -	- -				
SAI9	0.018	1.001	- -			
RP10	1.640	0.166	0.194	- -		
IQAS11	0.007	- -	- -	0.008	- -	
ASRP12	0.028	0.658	- -	- -	1.517	- -
ASED13	0.257	1.853	1.197	0.003	2.254	0.000

ASE14	0.018	1.110	- -	0.580	- -	0.100
SA15	0.058	0.020	0.116	0.015	4.037	0.123
STF16	0.277	0.111	0.049	0.931	- -	0.874
SES17	0.498	0.000	0.148	0.848	0.012	0.144
VC18	- -	0.064	0.155	3.047	0.041	0.124
IS19	2.901	1.014	2.533	0.195	0.064	0.349
ASF20	0.236	0.055	- -	1.384	- -	4.419
FU21	1.675	0.036	0.432	0.369	1.210	0.035
FMM22	- -	0.441	0.000	0.000	0.138	1.521

Modification Indices for THETA-EPS

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	- -					
ASE14	0.093	- -				
SA15	0.609	1.575	- -			
STF16	0.085	0.236	1.302	- -		
SES17	0.052	- -	1.140	- -	- -	
VC18	0.126	0.635	- -	1.476	0.875	- -
IS19	0.007	0.148	- -	2.168	2.126	- -
ASF20	1.212	3.597	- -	0.114	0.131	2.689
FU21	0.058	0.533	0.079	0.063	0.172	0.950
FMM22	0.169	0.897	1.973	0.246	3.379	2.293

Modification Indices for THETA-EPS

	IS19	ASF20	FU21	FMM22
IS19	- -			
ASF20	- -	- -		
FU21	- -	0.915	- -	
FMM22	- -	0.915	- -	- -

Expected Change for THETA-EPS

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	- -					
GG2	0.008	- -				
SKCS3	- -	-0.008	- -			
MIS4	- -	- -	- -	- -		
SP5	- -	- -	- -	- -	- -	
FIN6	- -	- -	- -	-0.005	0.005	- -
CD7	0.003	- -	- -	- -	- -	- -
TLE8	0.002	-0.001	-0.005	0.002	0.000	- -
SAI9	-0.009	0.006	0.005	0.000	-0.001	0.001
RP10	0.005	-0.002	0.005	0.002	0.002	0.002
IQAS11	-0.005	0.003	0.002	0.002	-0.007	-0.001
ASRP12	-0.005	0.006	0.006	0.002	0.001	-0.005
ASED13	0.006	-0.004	-0.005	-0.006	-0.005	0.001
ASE14	-0.007	0.000	0.005	-0.005	0.000	0.001
SA15	0.002	0.004	-0.003	- -	0.004	-0.005
STF16	-0.010	0.004	-0.001	0.007	0.000	-0.001
SES17	0.002	-0.008	-0.001	-0.005	0.005	-0.002
VC18	- -	-0.005	0.005	-0.002	-0.004	0.003
IS19	0.009	-0.003	-0.010	0.001	0.005	0.006
ASF20	0.008	0.003	-0.012	0.010	-0.005	-0.008
FU21	-0.011	0.001	-0.003	0.007	0.001	0.002
FMM22	0.007	-0.001	0.010	- -	- -	0.002

Expected Change for THETA-EPS

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	- -					
TLE8	- -	- -				
SAI9	0.000	0.004	- -			
RP10	-0.004	0.001	-0.002	- -		
IQAS11	0.000	- -	- -	0.000	- -	
ASRP12	-0.001	-0.003	- -	- -	0.006	- -
ASED13	-0.002	0.004	-0.005	0.000	0.006	0.000

ASE14	0.000	-0.003	- -	0.003	- -	-0.002
SA15	-0.001	0.001	0.002	-0.001	-0.010	0.002
STF16	0.002	0.001	0.001	0.004	- -	-0.005
SES17	0.002	0.000	0.002	-0.003	0.000	-0.002
VC18	- -	-0.001	-0.002	-0.007	0.001	0.002
IS19	0.006	-0.003	-0.007	0.002	0.001	-0.003
ASF20	0.003	-0.001	- -	-0.007	- -	0.014
FU21	-0.007	-0.001	0.004	0.003	-0.007	0.001
FMM22	- -	-0.003	0.000	0.000	-0.002	-0.007

Expected Change for THETA-EPS

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	- -					
ASE14	0.002	- -				
SA15	0.004	0.007	- -			
STF16	-0.001	0.003	0.008	- -		
SES17	0.001	- -	-0.006	- -	- -	
VC18	-0.002	0.004	- -	-0.007	0.004	- -
IS19	0.000	-0.002	- -	-0.008	0.007	- -
ASF20	0.007	-0.013	- -	-0.003	-0.002	0.013
FU21	-0.002	-0.005	0.002	0.002	-0.002	0.007
FMM22	-0.002	0.005	-0.010	-0.003	0.009	0.010

Expected Change for THETA-EPS

	IS19	ASF20	FU21	FMM22
IS19	- -			
ASF20	- -	- -		
FU21	- -	0.018	- -	
FMM22	- -	-0.014	- -	- -

Completely Standardized Expected Change for THETA-EPS

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	- -					
GG2	0.036	- -				
SKCS3	- -	-0.041	- -			
MIS4	- -	- -	- -	- -		
SP5	- -	- -	- -	- -	- -	
FIN6	- -	- -	- -	-0.025	0.026	- -
CD7	0.018	- -	- -	- -	- -	- -
TLE8	0.013	-0.007	-0.027	0.015	0.001	- -
SAI9	-0.036	0.032	0.022	0.000	-0.006	0.007
RP10	0.022	-0.011	0.025	0.010	0.011	0.011
IQAS11	-0.021	0.019	0.012	0.012	-0.036	-0.003
ASRP12	-0.022	0.032	0.026	0.010	0.006	-0.027
ASED13	0.027	-0.023	-0.022	-0.029	-0.025	0.004
ASE14	-0.030	0.001	0.021	-0.025	0.002	0.007
SA15	0.005	0.018	-0.014	- -	0.019	-0.024
STF16	-0.038	0.021	-0.003	0.030	-0.002	-0.003
SES17	0.008	-0.045	-0.004	-0.026	0.025	-0.011
VC18	- -	-0.024	0.021	-0.007	-0.018	0.015
IS19	0.038	-0.018	-0.047	0.007	0.025	0.035
ASF20	0.023	0.012	-0.041	0.032	-0.018	-0.032
FU21	-0.032	0.002	-0.011	0.024	0.003	0.007
FMM22	0.023	-0.003	0.035	- -	- -	0.008

Completely Standardized Expected Change for THETA-EPS

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	- -					
TLE8	- -	- -				
SAI9	0.003	0.022	- -			
RP10	-0.026	0.009	-0.010	- -		
IQAS11	-0.002	- -	- -	0.002	- -	
ASRP12	-0.003	-0.017	- -	- -	0.028	- -
ASED13	-0.010	0.026	-0.024	-0.001	0.033	0.000

ASE14	0.003	-0.021	- -	0.016	- -	-0.008
SA15	-0.005	0.003	0.007	-0.003	-0.046	0.008
STF16	0.012	0.007	0.005	0.021	- -	-0.021
SES17	0.014	0.000	0.008	-0.018	-0.002	-0.008
VC18	- -	-0.005	-0.009	-0.036	0.005	0.008
IS19	0.038	-0.020	-0.034	0.009	0.006	-0.013
ASF20	0.012	-0.005	- -	-0.028	- -	0.050
FU21	-0.031	-0.004	0.014	0.013	-0.025	0.004
FMM22	- -	-0.014	0.000	0.000	-0.008	-0.027

Completely Standardized Expected Change for THETA-EPS

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	- -					
ASE14	0.008	- -				
SA15	0.017	0.028	- -			
STF16	-0.006	0.011	0.031	- -		
SES17	0.005	- -	-0.029	- -	- -	
VC18	-0.008	0.017	- -	-0.030	0.023	- -
IS19	0.002	-0.008	- -	-0.036	0.035	- -
ASF20	0.026	-0.045	- -	-0.009	-0.009	0.043
FU21	-0.005	-0.016	0.007	0.006	-0.009	0.023
FMM22	-0.009	0.020	-0.033	-0.011	0.040	0.037

Completely Standardized Expected Change for THETA-EPS

	IS19	ASF20	FU21	FMM22
IS19	- -			
ASF20	- -	- -		
FU21	- -	0.042	- -	
FMM22	- -	-0.040	- -	- -

Maximum Modification Index is 11.29 for Element (18, 6) of LAMBDA-Y

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Factor Scores Regressions

ETA

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
LEA.SHI	0.697	1.085	1.131	-0.693	-0.453	-0.365
MSPF	-0.176	-0.534	-0.486	0.717	0.741	1.335
EDU.PRO	0.032	0.018	0.018	0.014	0.036	-0.008
QAS	0.041	0.023	0.031	0.014	0.050	0.091
CSS	0.048	0.015	0.027	-0.026	0.048	0.072
PH.FA	0.026	0.023	0.025	-0.035	-0.019	0.052

ETA

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
LEA.SHI	-0.022	0.177	0.101	0.069	0.121	0.107
MSPF	-0.472	0.136	0.168	0.123	0.189	0.123
EDU.PRO	0.152	0.591	0.517	0.433	0.607	0.141
QAS	0.008	0.224	0.205	0.115	0.202	0.467
CSS	-0.037	0.161	0.145	0.089	0.190	0.142
PH.FA	-0.001	0.057	0.198	-0.010	0.276	0.090

ETA

	ASED13	ASE14	SA15	STF16	SES17	VC18
LEA.SHI	0.126	0.075	0.117	0.040	0.042	0.134
MSPF	0.143	0.072	0.034	0.063	0.072	0.067
EDU.PRO	0.162	0.004	0.092	0.089	0.072	0.053
QAS	0.554	0.403	0.138	0.097	0.080	0.100
CSS	0.165	0.051	0.463	0.285	0.457	0.320
PH.FA	0.086	0.012	0.125	0.059	0.063	0.122

ETA

	IS19	ASF20	FU21	FMM22
LEA.SHI	0.005	0.044	-0.021	0.093
MSPF	0.048	0.078	0.059	-0.119
EDU.PRO	0.030	0.134	-0.003	0.000
QAS	0.072	0.092	0.021	0.012
CSS	0.357	0.073	-0.006	-0.016
PH.FA	-0.328	0.688	0.373	0.356

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Standardized Solution

LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	0.312	- -	- -	- -	- -	- -
GG2	0.269	- -	- -	- -	- -	- -
SKCS3	0.321	- -	- -	- -	- -	- -
MIS4	- -	0.292	- -	- -	- -	- -
SP5	- -	0.282	- -	- -	- -	- -
FIN6	- -	0.309	- -	- -	- -	- -
CD7	- -	- -	0.210	- -	- -	- -
TLE8	- -	- -	0.260	- -	- -	- -
SAI9	- -	- -	0.333	- -	- -	- -
RP10	- -	- -	0.293	- -	- -	- -
IQAS11	- -	- -	0.308	- -	- -	- -
ASRP12	- -	- -	- -	0.320	- -	- -
ASED13	- -	- -	- -	0.333	- -	- -
ASE14	- -	- -	- -	0.317	- -	- -
SA15	- -	- -	- -	- -	0.346	- -
STF16	- -	- -	- -	- -	0.321	- -
SES17	- -	- -	- -	- -	0.289	- -
VC18	- -	- -	- -	- -	0.280	- -
IS19	- -	- -	- -	- -	0.278	- -

ASF20	- -	- -	- -	- -	- -	0.417
FU21	- -	- -	- -	- -	- -	0.390
FMM22	- -	- -	- -	- -	- -	0.320

GAMMA

	EQFEC
LEA.SHI	0.578
MSPF	0.686
EDU.PRO	0.906
QAS	0.939
CSS	0.872
PH.FA	0.599

Correlation Matrix of ETA and KSI

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
LEA.SHI	1.000					
MSPF	0.396	1.000				
EDU.PRO	0.524	0.621	1.000			
QAS	0.543	0.644	0.850	1.000		
CSS	0.504	0.598	0.790	0.818	1.000	
PH.FA	0.346	0.410	0.542	0.562	0.522	1.000
EQFEC	0.578	0.686	0.906	0.939	0.872	0.599

Correlation Matrix of ETA and KSI

	EQFEC
EQFEC	1.000

PSI

Note: This matrix is diagonal.

LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
0.666	0.530	0.179	0.119	0.240	0.642

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Completely Standardized Solution

LAMBDA-Y

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
SL1	0.585	- -	- -	- -	- -	- -
GG2	0.646	- -	- -	- -	- -	- -
SKCS3	0.669	- -	- -	- -	- -	- -
MIS4	- -	0.621	- -	- -	- -	- -
SP5	- -	0.642	- -	- -	- -	- -
FIN6	- -	0.755	- -	- -	- -	- -
CD7	- -	- -	0.590	- -	- -	- -
TLE8	- -	- -	0.730	- -	- -	- -
SAI9	- -	- -	0.728	- -	- -	- -
RP10	- -	- -	0.734	- -	- -	- -
IQAS11	- -	- -	0.714	- -	- -	- -
ASRP12	- -	- -	- -	0.701	- -	- -
ASED13	- -	- -	- -	0.741	- -	- -
ASE14	- -	- -	- -	0.698	- -	- -
SA15	- -	- -	- -	- -	0.669	- -
STF16	- -	- -	- -	- -	0.625	- -
SES17	- -	- -	- -	- -	0.696	- -
VC18	- -	- -	- -	- -	0.606	- -
IS19	- -	- -	- -	- -	0.620	- -
ASF20	- -	- -	- -	- -	- -	0.659
FU21	- -	- -	- -	- -	- -	0.594
FMM22	- -	- -	- -	- -	- -	0.557

GAMMA

	EQFEC
LEA.SHI	0.578
MSPF	0.686
EDU.PRO	0.906

QAS	0.939
CSS	0.872
PH.FA	0.599

Correlation Matrix of ETA and KSI

	LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
LEA.SHI	1.000					
MSPF	0.396	1.000				
EDU.PRO	0.524	0.621	1.000			
QAS	0.543	0.644	0.850	1.000		
CSS	0.504	0.598	0.790	0.818	1.000	
PH.FA	0.346	0.410	0.542	0.562	0.522	1.000
EQFEC	0.578	0.686	0.906	0.939	0.872	0.599

Correlation Matrix of ETA and KSI

	EQFEC
EQFEC	1.000

PSI

Note: This matrix is diagonal.

LEA.SHI	MSPF	EDU.PRO	QAS	CSS	PH.FA
0.666	0.530	0.179	0.119	0.240	0.642

THETA-EPS

	SL1	GG2	SKCS3	MIS4	SP5	FIN6
SL1	0.657					
GG2	- -	0.583				
SKCS3	-0.092	- -	0.553			
MIS4	0.219	0.307	0.318	0.614		
SP5	0.164	0.297	0.263	0.158	0.588	

FIN6	0.132	0.206	0.226	- -	- -	0.430
CD7	- -	0.057	0.096	0.078	0.090	0.181
TLE8	- -	- -	- -	- -	- -	0.058
SAI9	- -	- -	- -	- -	- -	- -
RP10	- -	- -	- -	- -	- -	- -
IQAS11	- -	- -	- -	- -	- -	- -
ASRP12	- -	- -	- -	- -	- -	- -
ASED13	- -	- -	- -	- -	- -	- -
ASE14	- -	- -	- -	- -	- -	- -
SA15	- -	- -	- -	0.049	- -	- -
STF16	- -	- -	- -	- -	- -	- -
SES17	- -	- -	- -	- -	- -	- -
VC18	-0.066	- -	- -	- -	- -	- -
IS19	- -	- -	- -	- -	- -	- -
ASF20	- -	- -	- -	- -	- -	- -
FU21	- -	- -	- -	- -	- -	- -
FMM22	- -	- -	- -	0.060	0.066	- -

THETA-EPS

	CD7	TLE8	SAI9	RP10	IQAS11	ASRP12
CD7	0.652					
TLE8	0.130	0.468				
SAI9	- -	- -	0.470			
RP10	- -	- -	- -	0.461		
IQAS11	- -	-0.086	-0.075	- -	0.490	
ASRP12	- -	- -	-0.046	0.053	- -	0.508
ASED13	- -	- -	- -	- -	- -	- -
ASE14	- -	- -	0.048	- -	0.064	- -
SA15	- -	- -	- -	- -	- -	- -
STF16	- -	- -	- -	- -	-0.050	- -
SES17	- -	- -	- -	- -	- -	- -
VC18	0.060	- -	- -	- -	- -	- -
IS19	- -	- -	- -	- -	- -	- -
ASF20	- -	- -	-0.072	- -	-0.111	- -
FU21	- -	- -	- -	- -	- -	- -
FMM22	-0.044	- -	- -	- -	- -	- -

THETA-EPS

	ASED13	ASE14	SA15	STF16	SES17	VC18
ASED13	0.452					
ASE14	- -	0.512				
SA15	- -	- -	0.553			
STF16	- -	- -	- -	0.609		
SES17	- -	0.059	- -	0.072	0.516	
VC18	- -	- -	-0.058	- -	- -	0.633
IS19	- -	- -	-0.091	- -	- -	0.116
ASF20	- -	- -	-0.068	- -	- -	- -
FU21	- -	- -	- -	- -	- -	- -
FMM22	- -	- -	- -	- -	- -	- -

THETA-EPS

	IS19	ASF20	FU21	FMM22
IS19	0.615			
ASF20	0.119	0.566		
FU21	0.114	- -	0.648	
FMM22	0.118	- -	0.208	0.690

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Total and Indirect Effects

Total Effects of X on Y

	EQFEC
SL1	0.180
	(0.017)
	10.330
GG2	0.156
	(0.015)
	10.169

SKCS3	0.186
	(0.016)
	11.358
MIS4	0.200
	(0.016)
	12.455
SP5	0.194
	(0.015)
	12.799
FIN6	0.212
	(0.014)
	14.668
CD7	0.191
	(0.012)
	15.938
TLE8	0.235
	(0.012)
	20.102
SAI9	0.302
	(0.015)
	19.883
RP10	0.265
	(0.013)
	20.149
IQAS11	0.279
	(0.014)
	19.385
ASRP12	0.300
	(0.015)
	19.560

ASED13	0.312
	(0.015)
	21.120
ASE14	0.298
	(0.015)
	19.338
SA15	0.301
	(0.017)
	17.316
STF16	0.280
	(0.017)
	16.015
SES17	0.252
	(0.014)
	17.901
VC18	0.244
	(0.016)
	15.574
IS19	0.242
	(0.015)
	15.901
ASF20	0.250
	(0.023)
	10.634
FU21	0.233
	(0.023)
	10.123
FMM22	0.192
	(0.020)
	9.706

SECOND ORDER CFA MODEL OF EDUCATIONAL QUALITY OF FACULTY OF EDUCATION

Standardized Total and Indirect Effects

Standardized Total Effects of X on Y

	EQFEC
SL1	0.180
GG2	0.156
SKCS3	0.186
MIS4	0.200
SP5	0.194
FIN6	0.212
CD7	0.191
TLE8	0.235
SAI9	0.302
RP10	0.265
IQAS11	0.279
ASRP12	0.300
ASED13	0.312
ASE14	0.298
SA15	0.301
STF16	0.280
SES17	0.252
VC18	0.244
IS19	0.242
ASF20	0.250
FU21	0.233
FMM22	0.192

Completely Standardized Total Effects of X on Y

	EQFEC
SL1	0.338
GG2	0.373
SKCS3	0.387

MIS4	0.426
SP5	0.440
FIN6	0.518
CD7	0.534
TLE8	0.661
SAI9	0.659
RP10	0.665
IQAS11	0.647
ASRP12	0.658
ASED13	0.695
ASE14	0.655
SA15	0.583
STF16	0.545
SES17	0.607
VC18	0.528
IS19	0.541
ASF20	0.394
FU21	0.355
FMM22	0.333

Time used: 0.125 Seconds

Appendix C: Semi-Structured Interview Form

List of Interviewees

1. Chansophy NOU	Senior Researcher of Higher Education and Director of Institute of Education and Culture, Royal Academy of Cambodia (RAC) Doctoral Degree in Education
2. Phoumika KONG	Director of Higher Education Department, Ministry of Education, Youth, and Sport Master Degree in Educational Science
3. Sithol PEN	Deputy Secretary General at the Accreditation Committee of Cambodia, Ministry of Education, Youth, and Sport Master Degree in Education
4. Hing SOK	Director of Battambang Regional Teacher Training Centre, Ministry of Education, Youth, and Sport Master Degree in Law
5. Chanthe SON	Senior Researcher of Higher Eduation at Royal Academy of Cambodia Master Degree in Educational Science
6. Sam Ol NGUON	Associate Dean of Faculty of Education of Angkor Khemara University Master Degree in Educational Management and Master Degree in Linguistics
7. San SOM	Director of Bakan Higher SChool Master Degree in Educational Management
8. Bunkry MEAS	Director of Roluos Secondary School Bachelor Degree in Educational Managent

Letter of Cooperation

Date: ……

Dear Sir or Madam,

My name is Sokhom CHAN and I am doing a Master of Education in Educational Measurement and Evaluation at Chulalongkorn University in Bangkok, Thailand. Now, I am conducting a research study under the supervision of Prof. Sirichai Kanjanawasee.

The research is about "Development of Internal Quality Assurance Indicators of Faculty of Education in Cambodia", which aims 1) to construct a model of internal quality assurance indicators for faculty of education in Cambodia and 2) to validate the model of internal quality assurance indicators of faculty of education in Cambodia.

To develop this model of indicators of internal quality assurance, I would like to have your help and participation in this research. This would be a valuable thing for the development of higher education sectors in Cambodia. I guarantee that all of your responses will be anonymous during the research study and publication.

I would appreciate your generous help and meaningful participation within this open interview and please feel free to contact me for more information at 089270280 or channsokhom@gmail.com.

Yours faithfully,

Sokhom Chan

Semi-Structured Interview Form

(For Experts of Higher Education and Stakeholder of Faculty of Education in Cambodia)

This semi-structured interview form is used with experts of higher education by the researcher to gather more information about possible dimensions and indicators of internal quality assurance for faculty of education in Cambodia. This form consists of two questions as follow:

1. What dimensions of quality do you think faculty of education in Cambodia should consider and take care of during the process of internal quality assurance so as to improve and maintain quality of higher education?

2. What do you think faculty of education in Cambodia should do within each dimension of quality in order to ensure internal quality assurance?

Definition of the Terms

Internal quality assurance refers to the ongoing process of monitoring, assessing, enhancing, and maintaining education quality by the IQA body of faculty of education in Cambodia so as to see if the intended goals or stated objectives are being achieved.

Dimensions of quality refer to aspects, features, facets, or criteria of quality that require information from indicators of quality to reflect the actual state of faculty of education in Cambodia because they cannot be directly observed or measured during the IQA process.

Indicators of quality refer to observable variables or information used to indicate or measure the actual condition or characteristic of each component of an educational system during the IQA process of faculty of education in Cambodia.

Faculty of education refers to any institution, faculty, college, center, or school in Cambodia that is involved with the production of human resources for teaching and research careers.

Higher education institution refers to any institute, college, or school that provides higher education activities based on legally approved study programs at any level for students who graduate from high schools in Cambodia.

Appendix D: Questionnaire

Letter of Cooperation

Date: ……

Dear Sir or Madam,

My name is Sokhom CHAN and I am doing a Master of Education in Educational Measurement and Evaluation at Chulalongkorn University in Bangkok, Thailand. Now, I am conducting a research study under the supervision of Prof. Sirichai Kanjanawasee.

This research study is about "**Development of Internal Quality Assurance Indicators of Faculty of Education in Cambodia**", which aims 1) to construct a model of internal quality assurance indicators of faculty of education in Cambodia and 2) to validate the model of internal quality assurance indicators of faculty of education in Cambodia.

To develop this model of indicators of internal quality assurance, I would like to have your help and participation in this research. This would be valuable contribution for the development of higher education sectors in Cambodia. I guarantee that all of your responses will be anonymous during the research study and publication.

I would appreciate your generous help and meaningful cooperation within the important step of this research study. Should you need further information please feel free to contact me at +855 89 270 280 or channsokhom@gmail.com.

Yours faithfully,

Sokhom Chan

Questionnaire on Levels of Appropriateness of
Internal Quality Assurance Indicators of Faculty of Education in Cambodia

(For Staff, Academic Staff, and Students of Faculty of Education in Cambodia)

Internal quality assurance system is really important for an institution to ensure quality enhancement and maintenance. In this sense, a guideline with specific indicators of quality should be developed so as to make it easier to monitor, assess, and improve institutional performance or educational provisions.

Faculty of education where the production of human resources with teaching and research career is involved should have specific indicators of internal quality assurance in place so that their educational provision can meet standards of quality. Hence, the researcher has decided to construct a model of internal quality assurance indicators of faculty of education in Cambodia.

With the synthesis of the literature reviews and the results of open interviews with experts of higher education and stakeholders of faculty of education in Cambodia, the researcher has constructed a questionnaire of 6 dimensions with 77 indicators of internal quality assurance of faculty of education in Cambodia.

Definition of the Terms

Internal quality assurance refers to the ongoing process of monitoring, assessing, enhancing, and maintaining education quality by the IQA body of faculty of education in Cambodia so as to see if the intended goals or stated objectives are being achieved.

Dimensions of quality refer to aspects, features, facets, or criteria of quality that require information from indicators of quality to reflect the actual state of faculty of education in Cambodia because they cannot be directly observed or measured during the IQA process.

Indicators of quality refer to observable variables or information used to indicate or measure the actual condition or characteristic of each component of an educational system during the IQA process of faculty of education in Cambodia.

Faculty of education refers to any institution, faculty, college, center, or school in Cambodia that is involved with the production of human resources for teaching and research careers.

This questionnaire is applied with staff, teaching staff, and students of faculty of education in Cambodia to make sure that each indicator can be possible in the context of Cambodia. The questionnaire is divided into two parts: 1) general information about the respondents and 2) the consideration on levels of appropriateness and importance of indicators of internal quality assurance for faculty of education in Cambodia.

Part One: General Information about the Respondents

Instruction: Please tick (✓) in the box that is true for you.

1. Gender: ☐ 1) Male ☐ 2) Female
2. Age: ☐ 1) Under 30 ☐ 2) 30-39 ☐ 3) 40-49 ☐ 4) 50-59 ☐ 5) 60 up
3. Degree level: ☐ 1) Associate ☐ 2) Bachelor ☐ 3) Master ☐ 4) Doctor
4. Current position: ☐ 1) Staff ☐ 2) Teacher ☐ 3) Year-1 Student ☐ 4) Year-2 student ☐ 5) Year-3 student ☐ 6) Year-4 student
5. Work/Study place: ☐ 1) Public higher education institution ☐ 2) Private higher education institution

Part Two: The Appropriateness of Indicators of Internal Quality Assurance

Instruction: Please consider each indicator of internal quality assurance of faculty of education in Cambodia and decide to what extent the indicator is suitable for faculty of education within the context of Cambodia. Then, tick (✓) in the column from **1** to **5** and leave some comment in the suggestion column.

Level of Appropriateness

1 means the indicator is ***not suitable*** with the faculty of education in Cambodia.

2 means the indicator is ***fairly suitable*** with the faculty of education in Cambodia.

3 means the indicator is ***quite suitable*** with the faculty of education in Cambodia.

4 means the indicator is ***rather suitable*** with the faculty of education in Cambodia.

5 means the indicator is ***very suitable*** with the faculty of education in Cambodia.

Dimension 1: Leadership

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
1.1 Senior Leadership					
1) Vision and value setting and deployment to academic staff, administration staff, students, and other stakeholders					
2) Behaviors and actions with commitment and accountability towards faculty's mission and objectives and sustainable development					
Suggestion:					
1.2 Good Governance					
1) Effective mechanisms for selecting and nominating faculty seniors and administration staff and clear management structure, regulation, role and duties, and job description for them					
2) Sufficient faculty seniors and administration staff with consistent degrees and other important qualifications including leadership, accountability, commitment, nationalism, self-development, intra- and interpersonal skills, international languages, and information technology					
3) Effective mechanisms for assessing work performance of faculty seniors and administration staff and developing, awarding, and retaining them					
4) Dissemination of mechanisms for selecting and nominating faculty seniors and administration staff; mechanisms for assessing their work performance and developing, awarding, and retaining them; assessment results on work performance; and regulation, role and duties, and job description to the entire staff, students, and other stakeholders					
Suggestion:					
1.3 Support for Key Communities and Society					
1) Effective mechanisms for developing key communities and society based on faculty's mission and resources					
2) Regular assessment on the needs of key communities and society, the level of faculty's contribution towards them, and the level of their satisfaction with this contribution					
3) Dissemination of mechanisms for developing key communities and society and assessment results on their needs, the level of faculty's contribution towards them, and their level of satisfaction with the faculty's contribution to the entire staff, students, and other stakeholders					
Suggestion:					

Dimension 2: Mission, Strategic Planning, and Finance

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
2.1 Mission					
1) Consistency with the institution's mission, faculty's vision and resources, current national education policy or law, the protection of stakeholder's interests, and regional and global trends					
2) Effective mechanisms for assessing faculty's mission and modifying it based on the assessment result					
3) Dissemination of faculty's mission, mechanisms for assessing and modifying faculty's mission, the accomplishment level of faculty's mission, and the modification result of faculty's mission to the entire staff, students, and other stakeholders					
Suggestion:					
2.2 Strategic Planning					
1) Effective mechanisms for developing the strategic plan with key objective of the faculty based on the stated mission and needs assessment research of the faculty					
2) Action plan development and deployment supporting the stated objectives and faculty's resources					
3) Effective mechanisms for assessing the accomplishment level of the strategic plan and action plan for future improvement and implementation					
4) Dissemination of the strategic plan and action plan, accomplishment level of the strategic and action plans and the results of modification of strategic and action plans to the entire staff, students, and other stakeholders					
Suggestion:					
2.3 Finance					
1) Effective financial management system, budget planning, and strong committee for fund raising and new development partners based on faculty's mission and resources					
2) Effective mechanisms for financial requests and allocation within the faculty					
3) Adequate financial support for teaching and learning, research and publication, scholarship awarding, facility installment and repairs, support of key communities and society, and internal quality assurance process					
4) Fair and accurate financial reports and internal and external audits on the use of finances					
5) Dissemination of mechanisms for financial requests and allocation and the budged approved for each department or division of the faculty to the entire staff, students, and other stakeholders					
Suggestion:					

Dimension 3: Educational Programs

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
3.1 Curriculum Design					
1) Strong committee of curriculum development with clear management structure, regulation, role and duties, and job description for the members of this committee and effective mechanisms for assessing work performance of the committee members and developing, awarding, and retaining them					
2) Curriculum design and development in consistency with current national education policy or law, national framework, faculty's mission, assessment results on the needs of key communities and society, and current trend of education in the world					
3) Coverage of specific content for each program level provided in the faculty and other skills and topics including pedagogy, information technology, technology, educational measurement and evaluation, educational research, life and career skills, learning and innovation skills, interpersonal skills, international language, and global issues					
4) Special training on pedagogy and methods for measurement and evaluation and research in education and others for those who want to become professional teachers, researchers, or other types of educators					
5) Specific learning outcome setting for each subject/course and major within course syllabuses and objectives					
6) Regular assessment on the accomplishment level of current curriculum for future curriculum update or reform					
7) Effective mechanisms for curriculum review, and update or reform based on faculty development, current national education policy or law, national framework, and the needs of key communities and society, and regional and global trends of education					
8) Dissemination of the regulation, role and duties, and job description for the members of the committee of curriculum development; current curriculum; student learning outcomes; mechanisms for curriculum design, review, and update or reform; and opportunities for special training to the entire staff, students, and other stakeholders					
Suggestion:					
3.2 Teaching and Learning Effectiveness					
1) Effective mechanisms for teaching and learning, assignment for each subject/course, thesis or dissertation, and other research activities of academic staff related to teaching and learning					
2) Teaching and learning and assignment for each subject/course based on student learning outcomes, research results on teaching and learning, and appropriate course length for each program level provided					

Dimension 3 (Cont.)

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
3) Effective mechanisms for assessing teaching effectiveness and the level of students' satisfaction towards the subject or course					
4) Effective mechanisms for promoting or awarding best academic staff and students based on assessment results on teaching, learning, and research					
5) Appropriate library and laboratory with adequate installment of textbooks, reference books, journals, and other supporting documents and facilities; qualified librarians and laboratory staff; and good learning environment with the installment of high technology and good Internet speed					
6) Opportunities for orientation courses for new students, subject/course orientation at the beginning of the course, seminar or presentation from subject matter experts related to the course being conducted, and teaching practicums in target schools					
7) Effective mechanisms for assessing the needs of job providers of education for the characteristics of prospective teachers or employees within their schools, institutions, colleges, centers, or universities					
8) Dissemination of mechanisms for teaching and learning, assignment, thesis or dissertation, and research activities; mechanisms for assessing teaching effectiveness and the level of students' satisfaction with the course; student learning outcomes; course syllabuses and objectives; the regulation of the library and laboratory; assessment results on the needs of job providers; and other opportunities supporting teaching and learning and research to the entire staff, students, and other stakeholders					
Suggestion:					
3.3 Student Assessment and Improvement					
1) Effective mechanisms for assessing student achievements in each subject/ course and major and students' behaviors towards future profession of educators based on the intended learning outcomes					
2) Effective mechanisms for improving student learning outcomes for each subject/course and major					
3) Dissemination of mechanisms for assessing and improving student achievements to the entire staff, students, and other stakeholders					
Suggestion:					
3.4 Research and Publication					
1) Strong research committee or team of reviewers or editors for textbook, thesis or dissertation, and research publication with clear management structure, regulation, role and duties, and job description for the committee members and effective mechanisms for assessing their work performance and developing, awarding, and retaining them					

Dimension 3 (Cont.)

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
2) Research plans and regular research activities on teaching and learnings, faculty development, the needs of key communities and society, and regional and global trends of education and development					
3) Effective mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from conducted research studies					
4) Specific training courses on new research methodology for academic staff, current students, alumni, and stakeholders					
5) Dissemination of the regulation, role and duties, and job description for the members of research committee and mechanisms for assessing their work performance and developing, awarding, and retaining them; research plans and previous research studies; training courses on research methodology; and mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from previous research studies to the entire staff, students, and other stakeholders					
Suggestion:					
3.5 Internal Quality Assurance System					
1) Strong internal quality assurance unit of the faculty with clear management structure, regulation, role and duties, and job description for the members of the unit and effective mechanisms for assessing their work performance and developing, rewarding, and retaining them					
2) Regular training courses or meetings on internal quality assurance for the entire staff, students, and other stakeholders					
3) Assessment plans and effective mechanisms for monitoring, assessing, and enhancing faculty performance, educational activities, and other support services of the faculty based on the stated mission and strategic plan with key objectives of the faculty and national or international education quality standards					
4) Dissemination of the regulation, role and duties, and job description for the members of internal quality assurance unit; mechanisms for assessing their work performance and developing, rewarding, and retaining them; plans and mechanisms for assessing and enhancing faculty performance, educational provisions, and support services; opportunities for training or meetings on quality assurance; assessment results; and self-assessment report to the entire staff, students, and other stakeholders					
Suggestion:					

Dimension 4: Quality of Academic Staff

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
4.1 Academic Staff Recruitment and Placement					
1) Effective mechanisms for recruiting and placing academic staff and specific regulation for them					
2) Sufficient academic staff with consistent degrees, in-depth content knowledge, and other skills including pedagogy, technology, information technology, intra- and interpersonal skills, international languages, nationalism, commitment, self-development, measurement and evaluation skills, and research skills					
3) Dissemination of mechanisms for recruiting and placing academic staff; specific regulation; and qualification of academic staff to the entire staff, students, and other stakeholders					
Suggestion:					
4.2 Academic Staff Environment and Development					
1) Comfortable and secure workplace with easy access for academic staff					
2) Effective mechanisms for assessing academic staff's capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff					
3) Dissemination of mechanisms for assessing capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff to the entire staff, students, and other stakeholders					
Suggestion:					
4.3 Academic Staff Engagement					
1) Clear policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement					
2) Effective mechanisms for assessing the level of engagement of academic staff					
3) Dissemination of the policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement and the level of their engagement to the entire staff, students, and other stakeholders					
Suggestion:					

Dimension 5: Customers and Support Services

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
5.1 Student Admission					
1) Effective mechanisms for student selection and enrollment based on faculty's mission, resources, and programs and other important characteristics for the profession of teachers, educational researchers, or other educators					
2) Dissemination of mechanisms and criteria for student selection and enrollment to the entire staff, current students, high school students and other stakeholders					
Suggestion:					
5.2 Scholarship and Tuition Fee					
1) Clear policy and effective mechanisms for scholarship awarding and tuition fee setting based on faculty's mission and resources					
2) Dissemination of scholarship awarding policy, scholarship grantees, and current tuition fee to the entire staff, students, and other stakeholders					
Suggestion:					
5.3 Student Engagement and Services					
1) Specific regulation of students' workload and rights and responsibilities for both academic and social engagement					
2) Counselling services for academic and research performance; opportunities for practicums, exchange programs, and social activities; other services including dormitory, health center or first aid, canteen, sport complex, and hall for cultural activities or entertainment; and specific regulation for these services					
3) Effective mechanisms for assessing the effectiveness of counselling services; practicums, exchange programs, and other social activities; and the level of student satisfaction with these services					
4) Dissemination of regulation for students; counselling services, opportunities for practicums, exchange programs, social activities, other services, and the regulation for these services; the mechanisms for assessing the effectiveness of all services and the satisfaction level of students with these services; and assessment results to the entire staff, students, and other stakeholders					
Suggestion:					
5.4 Voices of the Customer					
1) Effective mechanisms for gathering information from potential students, alumni, other customers, and competitors' students for actionable information and feedback on the quality of educational programs					

Dimension 5 (Cont.)

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
2) Effective mechanisms for solving students' complaints and other customers' problems and building good relationship with students, alumni, and other customers and stakeholder					
3) Dissemination of the mechanisms for collecting information, managing complaints, and building good relationship to the entire staff, students, and other stakeholders					
Suggestion:					
5.5 Information System					
1) Effective information system for storing and releasing all information about current curriculum, curriculum update, student population, the satisfaction level of students and other stakeholders, employability rate of graduates, research plans, job opportunities, faculty development plan, opportunities for practicums and exchange programs, and assessment results					
2) Specific regulation for staff responsible for the information system and those who access or download data or documents					
3) Dissemination of the regulation for monitoring and managing the information system and accessing and downloading data or documents to the entire staff, students, and other stakeholders					
Suggestion:					

Dimension 6: Physical Facilities

Sub-Dimensions/Indicators	Level of Appropriateness				
	1	2	3	4	5
6.1 Adequacy and Security of Facilities					
1) Sufficient buildings, classrooms, meeting rooms, offices, rest rooms, parking lot, and sport complex with suitable telecommunication facilities, emergency exit, and secure-based design					
Suggestion:					
6.2 Facility Update					
1) Regular check and addition of physical facilities for teaching and learning, research, health care, entertainment, and other uses of the faculty					
Suggestion:					
6.3 Facility Management and Maintenance					
1) Effective mechanisms for facility management and maintenance and specific plan for physical facility expansion					
2) Regular check and repairs of physical facility for good process of teaching and learning, research activities, office work process, and other services provision within the faculty					
3) Dissemination of mechanisms for facility management and maintenance and specific plan for physical facility expansion to the entire staff, students, and other stakeholders					
Suggestion:					

THANKS FOR YOUR COOPERATION!

Appendix E: Evaluation Form

List of Focus Group Participants

1. Hing SOK	Director of Battambang Regional Teacher Training Center
2. Sareth SOR	Director of Takeo Regional Teacher Training Center
3. Sim SENG	Director of Kampong Cham Regional Teacher Training Center
4. Vuthy BUOY	Director of Prey Veng Regional Teacher Training Center
5. Chea DORK	Director of Phnom Penh Regional Teacher Training Center
6. Sokmeng OEUR	Director of Kandal Regional Teacher Training Center
7. Sochea KHEM	Associate Dean of Faculty of Education of Preah Sihanouk Raja Buddhist University
8. Sam Ol NGUON	Associate Dean of Faculty of Education of Angkor Khemara University
9. Sovannaroth KHIEV	Senior Staff at Cambodia-India Center for English Language Training, Royal Academiy of Cambodia
10. Voithna NHEAN	Deputy Director of Institute of Foreign Languages at University of Battambang
11. Munint MON	Staff at National Institute of Education

Letter of Cooperation

Date: ……

Dear Sir or Madam,

My name is Sokhom CHAN and I am doing a Master of Education in Educational Measurement and Evaluation at Chulalongkorn University in Bangkok, Thailand. Now, I am conducting a research study under the supervision of Prof. Sirichai Kanjanawasee.

This research study is about "**Development of Internal Quality Assurance Indicators of Faculty of Education in Cambodia**", which aims to 1) to construct a model of internal quality assurance indicators of faculty of education in Cambodia and 2) to validate the model of internal quality assurance indicators of faculty of education in Cambodia.

To develop this model of indicators of internal quality assurance, I would like to have your help and participation in this research. This would be valuable contribution for the development of higher education sectors in Cambodia. I guarantee that all of your responses will be anonymous during the research study and publication.

I would appreciate your generous help and meaningful cooperation within the important step of focus group discussion of this research study.

Yours faithfully,

Sokhom Chan

Evaluation Form of Internal Quality Assurance Indicators of Faculty of Education in Cambodia

Internal quality assurance system is really important for an institution to ensure quality enhancement and maintenance. In this sense, a guideline with specific indicators of quality should be developed so as to make it easier to monitor, assess, and improve institutional performance or educational provisions.

Faculty of education where the production of human resources with teaching and research career is involved should have specific indicators of internal quality assurance in place so that their educational provision can meet standards of quality. Hence, the researcher has decided to construct a model of internal quality assurance indicators of faculty of education in Cambodia.

With the synthesis of the literature reviews and the results of open interviews with experts of higher education and stakeholders of faculty of education in Cambodia, the researcher has constructed an evaluation form of the 77 indicators of internal quality assurance of faculty of education in Cambodia.

Definition of the Terms

Internal quality assurance refers to the ongoing process of monitoring, assessing, enhancing, and maintaining education quality by the IQA body of faculty of education in Cambodia so as to see if the intended goals or stated objectives are being achieved.

Dimensions of quality refer to aspects, features, facets, or criteria of quality that require information from indicators of quality to reflect the actual state of faculty of education in Cambodia because they cannot be directly observed or measured during the IQA process.

Indicators of quality refer to observable variables or information used to indicate or measure the actual condition or characteristic of each component of an educational system during the IQA process of faculty of education in Cambodia.

Faculty of education refers to any institution, faculty, college, center, or school in Cambodia that is involved with the production of human resources for teaching and research careers.

This evaluation form is used with deans or associate deans of faculty of education and directors of RTTCs in Cambodia in order to evaluate the 77 IQA indicators. The evaluation form is divided into two parts: 1) general information about the participants and 2) the evaluation on the proposed internal quality assurance indicators.

Part One: General Information about the Participants

Instruction: Please tick (✓) in the box that is true for you.

1. Gender: ☐ 1) Male ☐ 2) Female
2. Age: ☐ 1) Under 30 ☐ 2) 30-39 ☐ 3) 40-49 ☐ 4) 50-59 ☐ 5) 60 up
3. Degree level: ☐ 1) Bachelor ☐ 2) Master ☐ 3) Doctor
4. Position ☐ 1) Director of RTTC
   ☐ 2) Associate Dean of Faculty of Education
   ☐ 3) Deans of Faculty of Education
5. Work Place ☐ 1) Public Higher Education Institution
   ☐ 2) Private Higher Education Institution

Part Two: Evaluation on Internal Quality Assurance Indicators

Instruction: Please consider each indicator of internal quality assurance of faculty of education in Cambodia and decide to what extent the following 12 statements are true for it. Then, write 1, 2, 3, 4, or 5 in the column U1, U2, U3, F1, F2, F3, P1, P2, P3, A1, A2, and A3.

Evaluation Standards

Utility Standard

U1: To what extent is the indicator related to the needs of faculty of education in Cambodia?

U2: To what extent does the indicator reflect the condition or characteristics of faculty of education in Cambodia?

U3: To what extent is the indicator beneficial to faculty of education in Cambodia?

Feasibility Standard

F1: To what extent is the indicator easy to understand by faculty of education in Cambodia?

F2: To what extent is the indicator appropriate for the context of faculty of education in Cambodia?

F3: In terms of human and financial resources, to what extent can the indicator be utilized in faculty of education in Cambodia?

Propriety Standard

P1: To what extent did the researcher use the information from the respondents for the indicator construction for faculty of education in Cambodia?

P2: To what extent was the indicator construction performed in a legal and ethical manner towards faculty of education in Cambodia?

P3: To what extent does the indicator provide respect and attention for faculty of education in Cambodia?

Accuracy Standard

A1: To what extent was the information (concepts, guidelines, and previous research studies) appropriate for the indicator construction for faculty of education in Cambodia?

A2: To what extent was the context of education in Cambodia analyzed for the indicator construction for faculty of education in Cambodia?

A3: To what extent were the technique and procedures suitable for the indicator construction for faculty of education in Cambodia?

Rating Scales

1 means "*not at all*".

2 means "*somewhat/fairly*".

3 means "*moderately*".

4 means "*much*".

5 means "*completely/extremely/very*".

Example:

1) Vision and values setting and deployment to academic staff, administration staff, students, and other stakeholders

Utility			Feasibility			Propriety			Accuracy		
U1	U2	U3	F1	F2	F3	P1	P2	P3	A1	A2	A3
5	4[1]	5[2]	5[3]	2[4]	4	5	4	5	4	5	5[5]

Meaning

[1] The indicator ***much*** reflect the condition or characteristics of faculty of education in Cambodia.

[2] The indicator is ***very*** beneficial to faculty of education in Cambodia.

[3] The indicator is ***extremely*** easy to understand by faculty of education in Cambodia.

[4] The indicator is ***fairly*** appropriate with the context of faculty of education in Cambodia.

[5] The technique and procedures were ***very*** suitable for the indicator construction for faculty of education Cambodia.

Dimension 1: Leadership

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U1	U2	U3	F1	U1	U2	U3	F1	U1	U2	U3	F1
1.1 Senior Leadership												
1) Vision and values setting and deployment to academic staff, administration staff, students, and other stakeholders												
2) Behaviors and actions with commitment and accountability towards faculty's mission and objectives and sustainable development												
1.2 Good Governance												
1) Effective mechanisms for selecting and nominating faculty seniors and administration staff and clear management structure, regulation, role and duties, and job description for them												
2) Sufficient faculty seniors and administration staff with consistent degrees and other important qualifications including leadership, accountability, commitment, nationalism, self-development, intra- and interpersonal skills, international languages, and information technology												
3) Effective mechanisms for assessing work performance of faculty seniors and administration staff and developing, awarding, and retaining them												

Dimension 1 (Cont.)

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1
4) Dissemination of mechanisms for selecting and nominating faculty seniors and administration staff; mechanisms for assessing their work performance and developing, awarding, and retaining them; assessment results on work performance; and regulation, role and duties, and job description to the entire staff, students, and other stakeholders												
1.3 Support for Key Communities and Society												
1) Effective mechanisms for developing key communities and society based on faculty's mission and resources												
2) Regular assessment on the needs of key communities and society, the level of faculty's contribution towards them, and the level of their satisfaction with this contribution												
3) Dissemination of mechanisms for developing key communities and society and assessment results on their needs, the level of faculty's contribution towards them, and their level of satisfaction with the faculty's contribution to the entire staff, students, and other stakeholders												

Dimension 2: Mission, Strategic Planning, and Finance

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1
2.1 Mission												
1) Consistency with the institution's mission, faculty's vision and resources, current national education policy or law, the protection of stakeholder's interests, and regional and global trends												
2) Effective mechanisms for assessing faculty's mission and modifying it based on the assessment result												
3) Dissemination of faculty's mission, mechanisms for assessing and modifying faculty's mission, the accomplishment level of faculty's mission, and the modification result of faculty's mission to the entire staff, students, and other stakeholders												
2.2 Strategic Planning												
1) Effective mechanisms for developing the strategic plan with key objective of the faculty based on the stated mission and needs assessment research of the faculty												
2) Action plan development and deployment supporting the stated objectives and faculty's resources												
3) Effective mechanisms for assessing the accomplishment level of the strategic plan and action plan for future improvement and implementation												
4) Dissemination of the strategic plan and action plan, accomplishment level of the strategic and action plans and the results of modification of strategic and action plans to the entire staff, students, and other stakeholders												
2.3 Finance												
1) Effective financial management system, budget planning, and strong committee for fund raising and new development partners based on faculty's mission and resources												
2) Effective mechanisms for financial requests and allocation within the faculty												

Dimension 2 (Cont.)

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1
3) Adequate financial support for teaching and learning, research and publication, scholarship awarding, facility installment and repairs, support of key communities and society, and internal quality assurance process												
4) Fair and accurate financial reports and internal and external audits on the use of finances												
5) Dissemination of mechanisms for financial requests and allocation and the budged approved for each department or division of the faculty to the entire staff, students, and other stakeholders												

Dimension 3: Educational Programs

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1
3.1 Curriculum Design												
1) Strong committee of curriculum development with clear management structure, regulation, role and duties, and job description for the members of this committee and effective mechanisms for assessing work performance of the committee members and developing, awarding, and retaining them												
2) Curriculum design and development in consistency with current national education policy or law, national framework, faculty's mission, assessment results on the needs of key communities and society, and current trend of education in the world												
3) Coverage of specific content for each program level provided in the faculty and other skills and topics including pedagogy, information technology, technology, educational measurement and evaluation, educational research, life and career skills, learning and innovation skills, interpersonal skills, international language, and global issues												
4) Special training on pedagogy and methods for measurement and evaluation and research in education and others for those who want to become professional teachers, researchers, or other types of educators												
5) Specific learning outcome setting for each subject/course and major within course syllabuses and objectives												
6) Regular assessment on the accomplishment level of current curriculum for future curriculum update or reform												

Dimension 3 (Cont.)

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U1	U2	U3	F1	U1	U2	U3	F1	U1	U2	U3	F1
7) Effective mechanisms for curriculum review, and update or reform based on faculty development, current national education policy or law, national framework, and the needs of key communities and society, and regional and global trends of education												
8) Dissemination of the regulation, role and duties, and job description for the members of the committee of curriculum development; current curriculum; student learning outcomes; mechanisms for curriculum design, review, and update or reform; and opportunities for special training to the entire staff, students, and other stakeholders												
3.2 Teaching and Learning Effectiveness												
1) Effective mechanisms for teaching and learning, assignment for each subject/course, thesis or dissertation, and other research activities of academic staff related to teaching and learning												
2) Teaching and learning and assignment for each subject/course based on student learning outcomes, research results on teaching and learning, and appropriate course length for each program level provided												
3) Effective mechanisms for assessing teaching effectiveness and the level of students' satisfaction towards the subject or course												
4) Effective mechanisms for promoting or awarding best academic staff and students based on assessment results on teaching, learning, and research												
5) Appropriate library and laboratory with adequate installment of textbooks, reference books, journals, and other supporting documents and facilities; qualified librarians and laboratory staff; and good learning environment with the installment of high technology and good Internet speed												

Dimension 3 (Cont.)

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1
6) Opportunities for orientation courses for new students, subject/course orientation at the beginning of the course, seminar or presentation from subject matter experts related to the course being conducted, and teaching practicums in target schools												
7) Effective mechanisms for assessing the needs of job providers of education for the characteristics of prospective teachers or employees within their schools, institutions, colleges, centers, or universities												
8) Dissemination of mechanisms for teaching and learning, assignment, thesis or dissertation, and research activities; mechanisms for assessing teaching effectiveness and the level of students' satisfaction with the course; student learning outcomes; course syllabuses and objectives; the regulation of the library and laboratory; assessment results on the needs of job providers; and other opportunities supporting teaching and learning and research to the entire staff, students, and other stakeholders												
3.3 Student Assessment and Improvement												
1) Effective mechanisms for assessing student achievements in each subject/course and major and students' behaviors towards future profession of educators based on the intended learning outcomes												
2) Effective mechanisms for improving student learning outcomes for each subject/course and major												
3) Dissemination of mechanisms for assessing and improving student achievements to the entire staff, students, and other stakeholders												

Dimension 3 (Cont.)

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U1	U2	U3	F1	U1	U2	U3	F1	U1	U2	U3	F1
3.4 Research and Publication												
1) Strong research committee or team of reviewers or editors for textbook, thesis or dissertation, and research publication with clear management structure, regulation, role and duties, and job description for the committee members and effective mechanisms for assessing their work performance and developing, awarding, and retaining them												
2) Research plans and regular research activities about teaching and learning, faculty development, the needs of key communities and society, and regional and global trends of education and development												
3) Effective mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from conducted research studies												
4) Specific training courses on new research methodology for academic staff, current students, alumni, and stakeholders												
5) Dissemination of the regulation, role and duties, and job description for the members of research committee and mechanisms for assessing their work performance and developing, awarding, and retaining them; research plans and previous research studies; training courses on research methodology; and mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from previous research studies to the entire staff, students, and other stakeholders												

Dimension 3 (Cont.)

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U1	U2	U3	F1	U1	U2	U3	F1	U1	U2	U3	F1
3.5 Internal Quality Assurance System												
1) Strong internal quality assurance unit of the faculty with clear management structure, regulation, role and duties, and job description for the members of the unit and effective mechanisms for assessing their work performance and developing, rewarding, and retaining them												
2) Regular training courses or meetings on internal quality assurance for faculty seniors, academic staff, administration staff, students, and other stakeholders												
3) Assessment plans and effective mechanisms for monitoring, assessing, and enhancing faculty performance, educational activities, and other support services of the faculty based on the stated mission and strategic plan with key objectives of the faculty and national or international education quality standards												
4) Dissemination of the regulation, role and duties, and job description for the members of internal quality assurance unit; mechanisms for assessing their work performance and developing, rewarding, and retaining them; plans and mechanisms for assessing and enhancing faculty performance, educational provisions, and support services; opportunities for training or meetings on quality assurance; assessment results; and self-assessment report to the entire staff, students, and other stakeholders												

Dimension 4: Quality of Academic Staff

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U1	U2	U3	F1	U1	U2	U3	F1	U1	U2	U3	F1
4.1 Academic Staff Recruitment and Placement												
1) Effective mechanisms for recruiting and placing academic staff and specific regulation for them												
2) Sufficient academic staff with consistent degrees, in-depth content knowledge, and other skills such as pedagogy, technology, information technology, intra- and interpersonal skills, international languages, nationalism, measurement and evaluation skills, research skills, self-development, and commitment												
3) Dissemination of mechanisms for recruiting and placing academic staff; specific regulation; and qualification of academic staff to the entire staff, students, and other stakeholders												
4.2 Academic Staff Environment and Development												
1) Comfortable and secure workplace with easy access for academic staff												
2) Effective mechanisms for assessing academic staff's capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff												
3) Dissemination of mechanisms for assessing capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff to the entire staff, students, and other stakeholders												
4.3 Academic Staff Engagement												
1) Clear policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement												
2) Effective mechanisms for assessing the level of engagement of academic staff												
3) Dissemination of the policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement and the level of their engagement to the entire staff, students, and other stakeholders												

Dimension 5: Customers and Support Services

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1
5.1 Student Admission												
1) Effective mechanisms for student selection and enrollment based on faculty's mission, resources, and programs and other important characteristics for the profession of teachers, educational researchers, or other educators												
2) Dissemination of mechanisms and criteria for student selection and enrollment to the entire staff, current students, high school students and other stakeholders												
5.2 Scholarship and Tuition Fee												
1) Clear policy and effective mechanisms for scholarship awarding and tuition fee setting based on faculty's mission and resources												
2) Dissemination of scholarship awarding policy, scholarship grantees, and current tuition fee to the entire staff, students, and other stakeholders												
5.3 Student Engagement and Services												
1) Specific regulation of students' workload and rights and responsibilities for both academic and social engagement												
2) Counselling services for academic and research performance; opportunities for practicums, exchange programs, and social activities; other services including dormitory, health center or first aid, canteen, sport complex, and hall for cultural activities or entertainment; and specific regulation for these services												
3) Effective mechanisms for assessing the effectiveness of counselling services; practicums, exchange programs, and other social activities; and the level of student satisfaction with these services												

Dimension 5 (Cont.)

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1	U 1	U 2	U 3	F 1
4) Dissemination of regulation for students; counselling services, opportunities for practicums, exchange programs, social activities, other services, and the regulation for these services; the mechanisms for assessing the effectiveness of all services and the satisfaction level of students with these services; and assessment results to the entire staff, students, and other stakeholders												
5.4 Voices of the Customer												
1) Effective mechanisms for gathering information from potential students, alumni, other customers, and competitors' students for actionable information and feedback on the quality of educational programs												
2) Effective mechanisms for solving students' complaints and other customers' problems and building good relationship with students, alumni, and other customers and stakeholder												
3) Dissemination of the mechanisms for collecting information, managing complaints, and building good relationship to the entire staff, students, and other stakeholders												
5.5 Information System												
1) Effective information system for storing and releasing all information about current curriculum, curriculum update, student population, the satisfaction level of students and other stakeholders, employability rate of graduates, research plans, job opportunities, faculty development plan, opportunities for practicums and exchange programs, and assessment results												
2) Specific regulation for staff responsible for the information system and those who access or download data or documents												
3) Dissemination of the regulation for monitoring and managing the information system and accessing and downloading data or documents to the entire staff, students, and other stakeholders												

Dimension 6: Physical Facilities

Sub-Dimension/Indicator	Utility			Feasibility			Propriety			Accuracy		
	U1	U2	U3	F1	U1	U2	U3	F1	U1	U2	U3	F1
6.1 Adequacy and Security of Facilities												
1) Sufficient buildings, classrooms, meeting rooms, offices, rest rooms, parking lot, and sport complex with suitable telecommunication facilities, emergency exit, and secure-based design												
6.2 Facility Update												
1) Regular check and addition of physical facilities for teaching and learning, research, health care, entertainment, and other uses of the faculty												
6.3 Facility Management and Maintenance												
1) Effective mechanisms for facility management and maintenance and specific plan for physical facility expansion												
2) Regular check and repairs of physical facility for good process of teaching and learning, research activities, office work process, and other services provision within the faculty												
3) Dissemination of mechanisms for facility management and maintenance and specific plan for physical facility expansion to the entire staff, students, and other stakeholders												

THANKS FOR YOUR COOPERATION!

Appendix F: Item-Objective Congruence of IQA Indicators

List of Experts of Higher Education

1. Chhang RATH	Director of Graduate Program at the Accreditation Committee of Cambodia, Ministry of Education, Youth, and Sport Doctoral Degree in Quality Management
2. Uttara SOK	Dean of Faculty of Education of Pannasastra University of Cambodia Doctoral Degree in Educational Management and Leadership
3. Vicheanon KHIEU	Deputy Secretary General of the Accreditation Committee of Cambodia and Executive Member of the ASEAN Quality Assurance Network Master degree in public policy
4. Chanda NOU	Vice Rector of Angkor Khemara University Master Degree in Educational Management
5. Sovannaroth KHIEV	Senior staff at Cambodia-India Center for English Language Training Master Degree in Educational Management and Master Degree in Linguistics

IOC Indices for IQA Indicators

Dimensions/ Sub-Dimensions	Indicators	IOC Index
Dimension 1: Leadership		
1.1 Senior Leadership	1) Vision and value setting and deployment to administration staff, academic staff, students, and other stakeholders	1
	2) Behaviors and actions with commitment and accountability towards faculty's mission and objectives and sustainable development	1
1.2 Good Governance	1) Effective mechanisms for selecting and nominating faculty seniors and administration staff and clear management structure, regulation, role and duties, and job description for them	1
	2) Sufficient faculty seniors and administration staff with consistent degrees and other important qualifications including leadership, accountability, commitment, nationalism, self-development, intra- and interpersonal skills, international languages, and information technology	1
	3) Effective mechanisms for assessing work performance of faculty seniors and administration staff and developing, awarding, and retaining them	1
	4) Dissemination of mechanisms for selecting and nominating faculty seniors and administration staff; mechanisms for assessing their work performance and developing, awarding, and retaining them; assessment results on work performance; and regulation, role and duties, and job description to the entire staff, students, and other stakeholders	1
1.3 Support for Key Communities and Society	1) Effective mechanisms for developing key communities and society based on faculty's mission and resources	1
	2) Regular assessment on the needs of key communities and society, the level of faculty's contribution towards them, and the level of their satisfaction with this contribution	1
	3) Dissemination of mechanisms for developing key communities and society and assessment results on their needs, the level of faculty's contribution towards them, and their level of satisfaction with the faculty's contribution to the entire staff, students, and other stakeholders	1
Dimension 2: Mission, Strategic Planning, and Finance		
2.1 Mission	1) Consistency with the institution's mission, faculty's vision, mission, and resources, current national education policy or law, the protection of stakeholder's interests, and regional and global trends	1
	2) Effective mechanisms for assessing faculty's mission and modifying it based on the assessment result	1

IOC Indices for IQA Indicators (Cont.)

Dimensions/ Sub-Dimensions	Indicators	IOC Index
	3) Dissemination of faculty's mission, mechanisms for assessing and modifying faculty's mission, the accomplishment level of faculty's mission, and the modification result of faculty's mission to the entire staff, students, and other stakeholders	1
2.2 Strategic Planning	1) Effective mechanisms for developing the strategic plan with key objective of the faculty based on the stated mission and needs assessment research of the faculty	1
	2) Action plan development and deployment supporting the stated objectives and faculty's resources	1
	3) Effective mechanisms for assessing the accomplishment level of the strategic plan and action plan for future improvement and implementation	1
	4) Dissemination of the strategic plan and action plan, accomplishment level of the strategic and action plans and the results of modification of strategic and action plans to the entire staff, students, and other stakeholders	1
2.3 Finance	1) Effective financial management system, budget planning, and strong committee for fund raising and new development partners based on faculty's mission and resources	1
	2) Effective mechanisms for financial requests and allocation within the faculty	1
	3) Adequate financial support for teaching and learning, research and publication, scholarship awarding, facility installment and repairs, support of key communities and society, and internal quality assurance process	1
	4) Fair and accurate financial reports and internal and external audits on the use of finances	1
	5) Dissemination of mechanisms for financial requests and allocation and the budged approved for each department or division of the faculty to the entire staff, students, and other stakeholders	1
Dimension 3: Educational Programs		
3.1 Curriculum Design	1) Strong committee of curriculum development with clear management structure, regulation, role and duties, and job description for the members of this committee and effective mechanisms for assessing work performance of the committee members and developing, awarding, and retaining them	1
	2) Curriculum design and development in consistency with current national education policy or law, national framework, faculty's mission, assessment results on the needs of key communities and society, and current trend of education in the world	1

IOC Indices for IQA Indicators (Cont.)

Dimensions/ Sub-Dimensions	Indicators	IOC Index
	3) Coverage of specific content for each program level provided in the faculty and other skills and topics including pedagogy, information technology, technology, educational measurement and evaluation, educational research, life and career skills, learning and innovation skills, intra- and interpersonal skills, international language, and global issues	1
	4) Special training on pedagogy and methods for measurement and evaluation and research in education and others for those who want to become professional teachers, researchers, or other types of educators	0.80
	5) Specific learning outcome setting for each subject/course and major in course syllabuses and objectives	1
	6) Regular assessment on the accomplishment level of current curriculum for future curriculum update or reform	1
	7) Effective mechanisms for curriculum review, and update or reform based on faculty development, current national education policy or law, national framework, and the needs of key communities and society, and regional and global trends of education	0.80
	8) Dissemination of the regulation, role and duties, and job description for the members of the committee of curriculum development; current curriculum; student learning outcomes; mechanisms for curriculum design, review, and update or reform; and opportunities for special training to the entire staff, students, and other stakeholders	1
3.2 Teaching and Learning Effectiveness	1) Effective mechanisms for teaching and learning, assignment for each subject/course, thesis or dissertation, and other research activities of academic staff related to teaching and learning	1
	2) Teaching and learning and assignment for each subject/course based on student learning outcomes, research results on teaching and learning, and appropriate course length for each program level provided	1
	3) Effective mechanisms for assessing teaching effectiveness and the level of students' satisfaction towards the subject or course	1
	4) Effective mechanisms for promoting or awarding best academic staff and students based on assessment results on teaching, learning, and research	1
	5) Appropriate library and laboratory with adequate installment of textbooks, reference books, journals, and other supporting documents and facilities; qualified librarians and laboratory staff; and good learning environment with the installment of high technology and good Internet speed	1

THE IOC INDICES FOR IQA INDICATORS (Cont.)

Dimensions/ Sub-Dimensions	Indicators	IOC Index
	6) Opportunities for orientation courses for new students, course orientation at the beginning of the course, seminar or presentation from subject matter experts related to the current course, and teaching practicums in target schools	1
	7) Effective mechanisms for assessing the needs of job providers of education for the characteristics of prospective teachers or employees in their schools, , centers, institute, or universities	1
	8) Dissemination of mechanisms for teaching and learning, assignment, thesis or dissertation, and research activities; mechanisms for assessing teaching effectiveness and the level of students' satisfaction with the course; student learning outcomes; course syllabuses and objectives; the regulation of the library and laboratory; assessment results on the needs of job providers; and other opportunities supporting teaching and learning and research to the entire staff, students, and other stakeholders	1
3.3 Student Assessment and Improvement	1) Effective mechanisms for assessing student achievements in each subject/course and major and students' behaviors towards future profession of educators based on the intended learning outcomes	1
	2) Effective mechanisms for improving student learning outcomes for each subject and major	1
	3) Dissemination of mechanisms for assessing and improving student achievements to the entire staff, students, and other stakeholders	1
3.4 Research and Publication	1) Strong research committee or team of reviewers or editors for textbook, thesis or dissertation, and research publication with clear management structure, regulation, role and duties, and job description for the committee members and effective mechanisms for assessing their work performance and developing, awarding, and retaining them	1
	2) Research plans and regular research activities about teaching and learning, faculty development, the needs of key communities and society, and regional and global trends of education and development	1
	3) Effective mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from conducted research studies	1
	4) Specific training courses on new research methodology for academic staff, current students, alumni, and stakeholders	1

IOC Indices for IQA Indicators (Cont.)

Dimensions/ Sub-Dimensions	Indicators	IOC Index
	5) Dissemination of the regulation, role and duties, and job description for the members of research committee and mechanisms for assessing their work performance and developing, awarding, and retaining them; research plans and previous research studies; training courses on research methodology; and mechanisms for proposing and conducting research, checking and editing research reports and new textbooks, and managing knowledge from previous research studies to the entire staff, students, and other stakeholders	1
3.5 Internal Quality Assurance System	1) Strong internal quality assurance unit of the faculty with clear management structure, regulation, role and duties, and job description for the members of the unit and effective mechanisms for assessing their work performance and developing, rewarding, and retaining them	1
	2) Regular training courses or meetings on internal quality assurance for faculty seniors, academic staff, administration staff, students, and other stakeholders	1
	3) Assessment plans and effective mechanisms for monitoring, assessing, and enhancing faculty performance, educational activities, and other support services of the faculty based on faculty's mission and strategic plan with key objectives of the faculty and national or international education quality standards	1
	4) Dissemination of the regulation, role and duties, and job description for the members of internal quality assurance unit; mechanisms for assessing their work performance and developing, rewarding, and retaining them; plans and mechanisms for assessing and enhancing faculty performance, educational provisions, and support services; opportunities for training or meetings on quality assurance; assessment results; and self-assessment report to the entire staff, students, and other stakeholders	1
Dimension 4: Quality of Academic Staff		
4.1 Academic Staff Recruitment and Placement	1) Effective mechanisms for recruiting and placing academic staff and specific regulation for them	1
	2) Sufficient academic staff with consistent degrees, in-depth content knowledge, and other skills including pedagogy, technology, information technology, intra- and interpersonal skills, international languages, nationalism, commitment, self-development, measurement and evaluation skills, and research skills	1

IOC Indices for IQA Indicators (Cont.)

Dimensions/ Sub-Dimensions	Indicators	IOC Index
	3) Dissemination of mechanisms for recruiting and placing academic staff; specific regulation; and qualification of academic staff to the entire staff, students, and other stakeholders	1
4.2 Academic Staff Environment and Development	1) Comfortable and secure workplace with easy access for academic staff	1
	2) Effective mechanisms for assessing academic staff's capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff	1
	3) Dissemination of mechanisms for assessing capacity needs, teaching performance, and research studies and developing, awarding, and retaining academic staff to the entire staff, students, and other stakeholders	1
4.3 Academic Staff Engagement	1) Clear policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement	1
	2) Effective mechanisms for assessing the level of engagement of academic staff	1
	3) Dissemination of the policy on academic staff's workload, academic freedom, and responsibilities for both faculty and social engagement and the level of their engagement to the entire staff, students, and other stakeholders	1
Dimension 5: Customers and Support services		
5.1 Student Admission	1) Effective mechanisms for student selection and enrollment based on faculty's mission, resources, and programs and other important characteristics for the profession of teachers, educational researchers, or other educators	1
	2) Dissemination of mechanisms and criteria for student selection and enrollment to the entire staff, current students, high school students and other stakeholders	1
5.2 Scholarship and Tuition Fee	1) Clear policy and effective mechanisms for scholarship awarding and tuition fee setting based on faculty's mission and resources	1
	2) Dissemination of scholarship awarding policy, scholarship grantees, and current tuition fee to the entire staff, students, and other stakeholders	1
5.3 Student Engagement and Services	1) Specific regulation of students' workload and rights and responsibilities for both academic and social engagement	1
	2) Counselling services for academic and research performance; opportunities for practicums, exchange programs, and social activities; other services including dormitory, health center or first aid, canteen, sport complex, and hall for cultural activities or entertainment; and specific regulation for these services	1

IOC Indices for IQA Indicators (Cont.)

Dimensions/ Sub-Dimensions	Indicators	IOC Index
	3) Effective mechanisms for assessing the effectiveness of counselling services; practicums, exchange programs, and other social activities; and the level of student satisfaction with these services	1
	4) Dissemination of regulation for students; counselling services, opportunities for practicums, exchange programs, social activities, other services, and the regulation for these services; mechanisms for assessing the effectiveness of all services and the satisfaction level of students with these services; and assessment results to the entire staff, students, and other stakeholders	1
5.4 Voices of the Customer	1) Effective mechanisms for gathering information from potential students, alumni, other customers, and competitors' students for actionable information and feedback on the quality of educational programs	1
	2) Effective mechanisms for solving students' complaints and other customers' problems and building good relationship with students, alumni, and other customers and stakeholder	1
	3) Dissemination of the mechanisms for collecting information, managing complaints, and building good relationship to the entire staff, students, and other stakeholders	1
5.5 Information System	1) Effective information system for storing and releasing all information about current curriculum, curriculum update, student population, the level of satisfaction of students and other stakeholders, employability rate of graduates, research plans, job opportunities, faculty development plan, opportunities for practicums and exchange programs, and assessment results	1
	2) Specific regulation for staff responsible for the information system and those who access or download data or documents	1
	3) Dissemination of the regulation for monitoring and managing the information system and accessing and downloading data or documents to the entire staff, students, and other stakeholders	1

IOC Indices for IQA Indicators (Cont.)

Dimensions/ Sub-Dimensions	Indicators	IOC Index
Dimension 6: Physical Facilities		
6.1 Adequacy and Security of Facilities	1) Sufficient buildings, classrooms, meeting rooms, offices, rest rooms, parking lot, and sport complex with suitable telecommunication facilities, emergency exit, and secure-based design	1
6.2 Facility Update	1) Regular check and addition of physical facilities for teaching and learning, research, health care, entertainment, and other uses of the faculty	1
6.3 Facility Management and Maintenance	1) Effective mechanisms for facility management and maintenance and specific plan for physical facility expansion	1
	2) Regular check and repairs of physical facility for good process of teaching and learning, research activities, office work process, and other services provision within the faculty	1
	3) Dissemination of mechanisms for facility management and maintenance and specific plan for physical facility expansion to the entire staff, students, and other stakeholders	1

Appendix G: Letters of Cooperation

Ref. 0512.6(2791.10)/58- 0915

Faculty of Education
Chulalongkorn University
Phayathai Road, Pathumwan
Bangkok 10330, Thailand

February 19, 2015

Director General, Directorate General of Higher Education
Ministry of Education, Youth, and Sport
Kingdom of Cambodia

Subject: Request for cooperation in a master thesis research

Dear H.E. MAK Ngoy,

Attachment: Thesis Proposal Summary and questionnaire

On behalf of the Faculty of Education at Chulalongkorn University, I am writing to request a cooperation in a research project conducted by Mr. Sokhom Chan, one of the students in our Master Program in Educational Measurement and Evaluation. Mr. Sokhom Chan is currently conducting his master thesis research on "**Development of Internal Quality Assurance Indicators of Faculty of Education in Cambodia**" with two objectives: 1) to construct a model of internal quality assurance indicators of faculty of education in Cambodia and 2) to validate the model of internal quality assurance indicators. This research is under the supervision of Professor Sirichai Kanjanawasee, Ph.D.

For this research study, Mr. Sokhom Chan is planning to collect data from staff, teaching staff, and students of faculty of education in both public and private higher education institutions and regional teacher training centers in Cambodia through questionnaire and focus group discussion.

We do hope that you will grant permission to Mr. Sokhom Chan to collect data from the target respondents as mentioned above. Your kind cooperation is greatly appreciated.

Sincerely Yours,

(Associate Professor Noawanit Songkram, Ph.D.)
Associate Dean

Office of Academic Affairs Tel: +66 2 218 2681 Ext. 600

Ref. 0512.6(2791.10)/58- 0916

Faculty of Education
Chulalongkorn University
Phayathai Road, Pathumwan
Bangkok 10330, Thailand

February 19, 2015

Subject: Request for cooperation in a master thesis research

Dear Director of Regional Teacher Training Center,

Attachment: Questionnaire

On behalf of the Faculty of Education at Chulalongkorn University, I am writing to request a cooperation in a research project conducted by Mr. Sokhom Chan, one of the students in our Master Program in Educational Measurement and Evaluation. Mr. Sokhom Chan is currently conducting his master thesis research on "**Development of Internal Quality Assurance Indicators of Faculty of Education in Cambodia**" with two objectives: 1) to construct a model of internal quality assurance indicators of faculty of education in Cambodia and 2) to validate the model of internal quality assurance indicators. This research is under the supervision of Professor Sirichai Kanjanawasee, Ph.D.

For this research study, Mr. Sokhom Chan is planning to collect data from staff, teaching staff, and students in your teacher training center through questionnaire on the appropriateness of indicators of internal quality assurance of faculty of education in the context of Cambodia.

We do hope that you will grant permission to Mr. Sokhom Chan to collect data from the target respondents as mentioned above. Your kind cooperation is greatly appreciated.

Yours Faithfully,

(Associate Professor Noawanit Songkram, Ph.D.)
Associate Dean

Office of Academic Affairs Tel: +66 2 218 2681 Ext. 600

Ref. 0512.6(2791.10)/58- 0917

Faculty of Education
Chulalongkorn University
Phayathai Road, Pathumwan
Bangkok 10330, Thailand

February 19, 2015

Subject: Request for cooperation in a master thesis research

Dear Rector,

Attachment: Questionnaire

On behalf of the Faculty of Education at Chulalongkorn University, I am writing to request a cooperation in a research project conducted by Mr. Sokhom Chan, one of the students in our Master Program in Educational Measurement and Evaluation. Mr. Sokhom Chan is currently conducting his master thesis research on "**Development of Internal Quality Assurance Indicators of Faculty of Education in Cambodia**" with two objectives: 1) to construct a model of internal quality assurance indicators of faculty of education in Cambodia and 2) to validate the model of internal quality assurance indicators. This research is under the supervision of Professor Sirichai Kanjanawasee, Ph.D.

For this research study, Mr. Sokhom Chan is planning to collect data from staff, teaching staff, and students of faculty of education in your institution of higher education through questionnaire on the appropriateness of indicators of internal quality assurance of faculty of education in the context of Cambodia.

We do hope that you will grant permission to Mr. Sokhom Chan to collect data from the target respondents as mentioned above. Your kind cooperation is greatly appreciated.

Yours Faithfully,

(Associate Professor Noawanit Songkram, Ph.D.)
Associate Dean

Office of Academic Affairs Tel: +66 2 218 2681 Ext. 600

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

ក្រសួងអប់រំ យុវជន និងកីឡា
លេខ: ១៣៨១ **អយក.**ចស

រាជធានីភ្នំពេញ ថ្ងៃទី ០៣ ខែ មេសា ឆ្នាំ ២០១៥

ជម្រាបជូន

-ឯកឧត្តមសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យភូមិន្ទភ្នំពេញ
-ឯកឧត្តមសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យមានជ័យ
-ឯកឧត្តមសាកលវិទ្យាធិការ នៃពុទ្ធិកសាកលវិទ្យាល័យព្រះសីហនុរាជ
-ឯកឧត្តមសាកលវិទ្យាធិការ នៃពុទ្ធិកសាកលវិទ្យាល័យព្រះសីហមុនីរាជា
-លោកជំទាវសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យបាត់ដំបង
-ឯកឧត្តមនាយកវិទ្យាស្ថានជាតិអប់រំ
-ឯកឧត្តមនាយកវិទ្យាស្ថានជាតិបណ្តុះបណ្តាលវិជ្ជាជីវៈ
-លោកនាយកមជ្ឈមណ្ឌលគរុកោសល្យភូមិភាគរាជធានីភ្នំពេញ
-លោកនាយកមជ្ឈមណ្ឌលគរុកោសល្យភូមិភាគខេត្តព្រៃវែង
-លោកនាយកមជ្ឈមណ្ឌលគរុកោសល្យភូមិភាគខេត្តកំពង់ចាម
-លោកនាយកមជ្ឈមណ្ឌលគរុកោសល្យភូមិភាគខេត្តកណ្តាល
-លោកនាយកមជ្ឈមណ្ឌលគរុកោសល្យភូមិភាគខេត្តបាត់ដំបង
-លោកនាយកមជ្ឈមណ្ឌលគរុកោសល្យភូមិភាគខេត្តតាកែវ

កម្មវត្ថុ : សំណើសុំចុះធ្វើកម្មសិក្សាស្រាវជ្រាវប្រមូលទិន្នន័យ សម្រាប់សរសេរនិក្ខេបបទបញ្ចប់ការសិក្សាពីថ្ងៃទី ០៧ ខែ មេសា ឆ្នាំ ២០១៥ ដល់ ថ្ងៃទី ១២ ខែ មិថុនា ឆ្នាំ ២០១៥ ។

យោង : -លិខិតលេខRef.0512.6(2791.10)/58-0915 ចុះថ្ងៃទី ១៩ ខែ កុម្ភៈ ឆ្នាំ ២០១៥ របស់សាកលវិទ្យាល័យជូឡាឡុងកនព្រះរាជាណាចក្រថៃ ។

-ពាក្យស្នើសុំរបស់សាមីជនចុះថ្ងៃទី ១៣ ខែ មីនា ឆ្នាំ ២០១៥ ។

តបតាមកម្មវត្ថុ និងយោងខាងលើ ខ្ញុំសូមជម្រាបជូន **ឯកឧត្តម លោកជំទាវ លោកនាយក** មេត្តាជ្រាបថា លោក **ចាន់ សុខុម** ជានិស្សិតអាហារូបករណ៍ក្រោមគម្រោងព្រះរាជឧបត្ថម្ភដល់ព្រះរាជាណាចក្រកម្ពុជាលើវិស័យអប់រំ របស់ព្រះអង្គម្ចាស់ក្សត្រីយ៍មហាចក្រីសិរិនថន

នៃព្រះរាជាណាចក្រថៃ ។ សព្វថ្ងៃលោក **ចាន់ សុខុម** ជានិស្សិតអាហារូបករណ៍ថ្នាក់បរិញ្ញាបត្រ-ជាន់ខ្ពស់ ឆ្នាំទី២ នៅមហាវិទ្យាល័យអប់រំ នៃសាកលវិទ្យាល័យជូឡាឡុងកន សាមីជនស្នើសុំចុះធ្វើកម្មសិក្សាស្រាវជ្រាវ និងប្រមូលទិន្នន័យលើប្រធានបទ " **ការបង្កើតសូចនាករ នៃការធានាគុណភាពផ្ទៃក្នុងសម្រាប់មហាវិទ្យាល័យអប់រំនៅកម្ពុជា** " សម្រាប់សរសេរនិក្ខេបបទបញ្ចប់ការសិក្សានៅខែ សីហា ឆ្នាំ ២០១៥ ខាងមុខនេះ ។

អាស្រ័យដូចបានជម្រាបជូនខាងលើ ខ្ញុំសូម **ឯកឧត្តម លោកជំទាវ លោកនាយក** មេត្តាអនុញ្ញាតឲ្យលោក **ចាន់ សុខុម** បានចុះធ្វើកម្មសិក្សាស្រាវជ្រាវប្រមូលទិន្នន័យតាមគ្រឹះស្ថានឧត្តមសិក្សាស្នើសុំតាមការគួរ ។

សូម **ឯកឧត្តម លោកជំទាវ លោកនាយក** ទទួលនូវការរាប់អានដ៏ស្មោះពីខ្ញុំ

ជ. រដ្ឋមន្ត្រីក្រសួងអប់រំ យុវជន កីឡា
ប្រធានលេខាធិការ

យក ឡុយ

ចម្លងជូន
-ក្រសួងការបរទេស និងសហប្រតិបត្តិការអន្តរជាតិ
-ក្រសួងធម្មការ និងកិច្ចការសាសនា
-ក្រសួងការងារ និងបណ្តុះបណ្តាលវិជ្ជាជីវៈ
-ស្ថានទូតព្រះរាជាណាចក្រថៃ ប្រចាំព្រះរាជាណាចក្រកម្ពុជា
-មន្ទីរអប់រំ យុវជន និងកីឡារាជធានីភ្នំពេញ
-មន្ទីរអប់រំ យុវជន និងកីឡាខេត្តព្រៃវែង
-មន្ទីរអប់រំ យុវជន និងកីឡាខេត្តកំពង់ចាម
-មន្ទីរអប់រំ យុវជន និងកីឡាខេត្តកណ្តាល
-មន្ទីរអប់រំ យុវជន និងកីឡាខេត្តបាត់ដំបង
-មន្ទីរអប់រំ យុវជន និងកីឡាខេត្តតាកែវ
"ដើម្បីជូនជ្រាបជាព័ត៌មាន"
- កាលប្បវត្តិ-ឯកសារ នា.ទអ

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

ក្រសួងអប់រំ យុវជន និងកីឡា
លេខ: ១៣៧២ អយក.

រាជធានីភ្នំពេញ ថ្ងៃទី ០៧ ខែ មេសា ឆ្នាំ ២០១៥

ជម្រាបជូន
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យបញ្ញាសាស្ត្រកម្ពុជា
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យកម្ពុជា
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យមេគង្គកម្ពុជា
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យអន្តរខេមរា
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យឃ្លៀលប្រាយ
- លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យធនធានមនុស្ស
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យខេមរៈ
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យឯកទេស នៃកម្ពុជា
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យន័រតុន
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យអាស៊ីអឺរ៉ុប
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យភ្នំពេញអន្តរជាតិ
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យគ្រប់គ្រង និងសេដ្ឋកិច្ច
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យវេស្ទើន
-លោកសាកលវិទ្យាធិការ នៃសាកលវិទ្យាល័យពុទ្ធិសាស្ត្រ
-លោកនាយកវិទ្យាស្ថានអប់រំអន្តរជាតិ
-លោកនាយកវិទ្យាស្ថានអភិវឌ្ឍន៍អាស៊ីសច្ច:
-លោកនាយកវិទ្យាស្ថានគ្រប់គ្រង និងអភិវឌ្ឍន៍

កម្មវត្ថុ: សំណើសុំចុះធ្វើកម្មសិក្សាស្រាវជ្រាវប្រមូលទិន្នន័យសម្រាប់សរសេរនិក្ខេបបទបញ្ចប់ការសិក្សាពីថ្ងៃទី ០៧ ខែ មេសា ឆ្នាំ ២០១៥ ដល់ ថ្ងៃទី ១២ ខែ មិថុនា ឆ្នាំ ២០១៥ ។

យោង : -លិខិតលេខRef.0512.6(2791.10)/58-0915 ចុះថ្ងៃទី ១៩ ខែ កុម្ភៈ ឆ្នាំ ២០១៥ របស់សាកលវិទ្យាល័យជូឡាឡុងកនព្រះរាជាណាចក្រថៃ ។
-ពាក្យស្នើសុំរបស់សាមីជនចុះថ្ងៃទី ១៣ ខែ មីនា ឆ្នាំ ២០១៥ ។

អាសយដ្ឋានលេខ៨០ មហាវិថី ព្រះនរោត្តម ភ្នំពេញ កម្ពុជា ទូរស័ព្ទ: (៨៥៥-២៣) ២១០ ១៨៧ /២១៧ ២៥៣ /៨២៦ ៥៥១ ទូរសារ: (៨៥៥-២៣) ២១៧ ២៥០/ ២១២ ៥១២
អ៊ីមែល: info@moeys.gov.kh / crsmeys@camnet.com.kh គេហទំព័រ : www.moeys.gov.kh

តបតាមកម្មវត្ថុ និងយោងខាងលើ ខ្ញុំសូមជម្រាបជូន **លោកសាកលវិទ្យាធិការ លោកនាយក** មេត្តាជ្រាបថា លោក **ចាន់ សុខុម** ជានិស្សិតអាហារូបករណ៍ក្រោមគម្រោងព្រះរាជឧបត្ថម្ភ ដល់ព្រះរាជាណាចក្រកម្ពុជាលើវិស័យអប់រំ របស់ព្រះអង្គម្ចាស់ក្សត្រីយ៍មហាចក្រីសិរិនថន នៃព្រះរាជាណាចក្រថៃ ។ សព្វថ្ងៃលោក **ចាន់ សុខុម** ជានិស្សិតអាហារូបករណ៍ថ្នាក់បរិញ្ញាបត្រជាន់ខ្ពស់ ឆ្នាំទី២ នៅមហាវិទ្យាល័យអប់រំ នៃសាកលវិទ្យាល័យជូឡាឡុងកន សាមីជនស្នើសុំចុះធ្វើកម្មសិក្សាស្រាវជ្រាវ និងប្រមូលទិន្នន័យលើប្រធានបទ **" ការបង្កើតសូចនាករ នៃការធានាគុណភាពផ្ទៃក្នុងសម្រាប់មហាវិទ្យាល័យអប់រំនៅកម្ពុជា "** សម្រាប់សរសេរនិក្ខេបបទបញ្ចប់ការសិក្សា នៅខែ សីហា ឆ្នាំ ២០១៥ ខាងមុខនេះ ។

អាស្រ័យដូចបានជម្រាបជូនខាងលើ ខ្ញុំសូម **លោកសាកលវិទ្យាធិការ លោកនាយក** មេត្តាអនុញ្ញាតឲ្យលោក **ចាន់ សុខុម** បានចុះធ្វើកម្មសិក្សាស្រាវជ្រាវប្រមូលទិន្នន័យតាមគ្រឹះស្ថានឧត្តមសិក្សាស្នើសុំតាមការគួរ ។

សូម **លោកសាកលវិទ្យាធិការ លោកនាយក** ទទួលនូវការរាប់អានពីខ្ញុំ

ជ. រដ្ឋមន្ត្រីក្រសួងអប់រំ យុវជន កីឡា
រដ្ឋលេខាធិការ

យក់ ឌ៉ុយ

ចម្លងជូន

-ក្រសួងការបរទេស និងសហប្រតិបត្តិការអន្តរជាតិ
-ស្ថានទូតព្រះរាជាណាចក្រថៃ ប្រចាំព្រះរាជាណាចក្រកម្ពុជា
"ដើម្បីជូនជ្រាបជាព័ត៌មាន"
- កាលប្បវត្តិ-ឯកសារ នា.ទវអ

VITA

Mr. Sokhom CHAN was born on the 2nd of May, 1979 in a big jungle along the Thai-Khmer border. He was raised in a Camp called Sok San located in Trat Province in Thailand. As a refugee, he went to Sok San Primary and Secondary School in the camp. He was sent back to Pursat Province in Cambodia in 1992. There, he spent five more years with general education and he graduated from high school in 1998.

After graduation, he was selected to take a two-year educational program in order to become a secondary school teacher of Khmer Literature. However, he has never taught Khmer language since his first class in 2000. He was asked to teach English instead.

He had developed a strong interest in English and Khmer literature since then, which encouraged him to go to university for further education, especially in the English field. Finally, he earned a bachelor of education in Teaching English in 2010 and a bachelor of education in Khmer Literature in 2012.

With a big ambition to earn a master degree, he applied and won a scholarship to Faculty of Education at Chulalongkorn University in Thailand in 2013. There, he was studying for his Master of Education in Educational Measurement and Evaluation.