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Restructuring of General Education Program: An Experience of King Mongkut's University of Technology Thonburi (KMUTT)

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Abstract

This paper intends to share the KMUTT experience in framing and redesigning a general education program for its 2010 undergraduate curriculum. Since the Higher Education Commission (HEC) in Thailand has promulgated the Criteria Standardization of the Undergraduate Study Level Program B.E. 2548 (2005) in order to maintain the education standard at the study level, to be part of the accreditation criteria, and to facilitate academic administration, all undergraduate programs are required to comply with this standard to ensure the quality of programs. Since, the standard criteria is effective implementation The new undergraduate programs of several universities failed to comply with the regulation due to general education courses offered being claimed as fundamental courses of specific courses. As a result, most universities as well as KMUTT have studied and redesigned their general education courses. The revision of the general education program has been developed for a year, and consequently a new program framed on the standard criteria, the Thai Higher Education Qualification Framework, and the desired KMUTT graduate characteristics, is proposed and implemented for KMUTT students enrolled in the 2010 academic year.

Keyword: Higher Education, General Education, Learning Outcomes

1. Introduction

The Higher Education Commission (HEC) in Thailand has promulgated the Criteria Standardization of the Undergraduate Study Level Program B.E. 2548 (2005) in order to maintain the education standard at the study level, to be part of accreditation criteria, and to facilitate academic administration (Ministry of Higher Education, 2005).

All undergraduate programs are required to comply with this standard to ensure the quality of programs. A number of requirements written in the standard are constituted of the education system, credit calculation, number of credits and length of study, curriculum structure, numbers and qualification of lecturers, evaluation and graduation criteria, name of degree, curriculum quality assurance, and curriculum development and advancement. The 4-year undergraduate curriculum consists of not less than 120 credits for the whole program and curriculum structure composed of three course categories namely general education courses (30 credits), specific courses (84 credits of core, professional foundation and professional courses), and elective courses (6 credits). The standard criteria cover all new undergraduate programs which will be offered as well as the existing programs (Ministry of Higher Education, 2005).

Effective enforcement of the general criteria has highlighted a contentious issue. The curriculum structure components are in focus from among several standard requirements, and general education courses have become controversial in two aspects: do general education courses

consume disproportionately more credits and dilute the strength of professional courses, and, what subjects should be claimed as general education courses?

Similar to other universities, some new KMUTT undergraduate curriculums planned to be offered after the criteria standard was judged effective struggled to get approval due to some proposed general subjects being considered as fundamental components of professional courses and not strictly general education courses, particularly science and mathematics fundamental courses.

To solve this problem, KMUTT set up a working group to study and revise general education courses aimed to comply with the standard criteria and serve KMUTT desired graduate characteristics that are suitable in the KMUTT context. Approximately a year, the new KMUTT general education program launched in 2010 and was implemented in all undergraduate programs. After the new KMUTT general education courses have been in operation for a few years, it appears that the general education program at KMUTT is acceptable among educators in terms of being an innovative program in course design and a pioneer in learning and teaching approaches especially for large classes.

This paper intends to share the KMUTT experience in restructuring and implementing general education courses. The paper will be organized in four sections: the concept of general education courses in the undergraduate curriculum, the importance and evolution of general education courses in Thailand, the development of KMUTT general education, and summary and conclusion.

2. The Concept of General Education Courses in Undergraduate Curriculum

General education has a long history in American higher education dating from the early 19th century. The definition of general education has changed from time to time because it is a dynamic concept and its meaning in one concept may differ from another (Neuabauer, 2007).

The General Education Program at Harvard University is known among Thai universities as a constructive model and has been adopted as a prototype in designing Thai general education courses. Harvard University clarifies general education courses as the courses that seek to

connect in an explicit way what students learn in classrooms to life outside the ivied-covered walls and beyond the college years (Harvard University, 2014).

Referring to the Malaysian Education System, Mastor (Mastor, 2012) cites that “general education is mainly and intrinsically about preparing students to be a functional and good global citizen for the country and the whole community”. At Universiti Kebangsaan Malaysia, general education means “a program offered at the undergraduate level with the aim of providing students with living skills in modern society” (Mastor, 2012).

In Japan, International Christian University says that “general education courses are designed to nurture the ability to think critically and creatively, enabling students to grasp the essentials of an issue from a board range perspective. General Education courses neither provide the basics for specialized courses, nor aim to delve into specialized fields” (International Christian University, 2014).

3. The Importance and Evolution of General Education Courses in Thailand

In Thailand, the concept of general education came into existence after WWII and was influenced by the American education system. However, general education courses seemed to struggle for a long time until the Ministry of University Affairs (currently merged with the Ministry of Education) announced the Criteria for Undergraduate Program in 1974, which stipulated that all undergraduate programs were required to provide general courses of at least 30 credits including 6 credits in social sciences, 6 credits in humanities, 6 credits in language, and 6 credits in sciences and mathematics. This can be referred to as the inception of concrete general education in Thailand with the aim to educate and prepare students with wide and broad knowledge in different disciplines (Pitoon Sinlarat, 2007).

In 1989, the definition of general education was drafted for the first time during revision of the Criteria for Undergraduate Program B.E. 2532 and this definition remains the same with little adjustment until now even though the Criteria for Undergraduate Programs has continuously evolved.

At present, as mentioned in the Criteria Standardization of the Undergraduate Study Level Program B.E. 2548 (2005) the concept of general education courses is defined as:

“The courses that emphasize the development of the student to become a well-rounded citizen who understands the natural environment, oneself, others and immediate social organization. In addition, the courses aim to develop the student to think constructively and develop excellent communication skills. General education courses stress developing the role model citizen who

shows moral excellence, propriety and etiquette. These courses also aim to produce the student that values the importance of Thai and foreign art and culture. As a result, the students are able to use their knowledge in regular life and maintain their good standing in the society” (Ministry of Higher Education, 2005).

General education courses can be offered in the manner of individual courses or integrative courses depending on each educational institute. In addition, knowledge in general education courses should be covered by social sciences, humanities, language, science and mathematics in the appropriate proportion.

4. Development of KMUTT General Education

KMUTT is a public university located in suburban south Bangkok in Thailand and was established for 54 years as Thonburi Technology Institute (TTI) by the Department of Vocational Education, Ministry of Education. The objective of TTI was to offer training to technicians, technical instructors and technologists. In 1971, TTI was transformed to King Mongkut’s Institute of Technology (KMIT) at the Thonburi campus and in 1986 became King Mongkut’s Institute of Technology Thonburi (KMUTT). On March 7, 1998 as announced in the Royal Gazette, KMUTT became King Mongkut’s University of Technology Thonburi (KMUTT).

KMUTT positions itself as a science and technology based university. A wide range of undergraduate programs are offered in the fields of engineering, sciences, education technology, information technology, and architecture. Currently, 47 programs and 147 fields of study are offered with approximately 11,666 undergraduate students out of a total of 16,438.

At the beginning of the implementation of the standard criteria B.E. 2548, a number of new programs planned to be offered was unable to follow the standard criteria due to the issue of general education; some subjects in general education courses were considered to be specialized subjects, not general education. This issue created a lot of impact since the new programs could not recruit students as planned and caused various problems for the institutes.

To resolve this problem, KMUTT set up a working group to study and revise current general education courses and announced a policy to be the basis of revision that the new general education courses should be framed by considering desired graduate characteristics, use an integrative style to cover knowledge in social sciences, humanities, science and mathematics, employ active learning approaches, and design a team teaching approach consisting of lecturers from different fields working together. The members of the working group would be representatives from the faculties that offer undergraduate programs and former lecturers in general education courses, and the vice president for academic affairs was assigned to be the chairperson of the group.

This section will present a conceptual framework employed to draft a new KMUTT general education program, the New KMUTT General Education Program 2010, and course description in brief.

4.1 Framework for the New KMUTT General Education Program

In the revising process, a number of documents were reviewed such as the standard criteria, Thai Higher Education Qualification Framework (TQF), general education courses offered by lead national and international universities, 21st century skills and desired KMUTT graduate characteristics (KMUTT QF). In addition, the key educators and general education scholars were interviewed. With this process, all information was synthesized and the new KMUTT general education framework was developed as shown in figure 1.

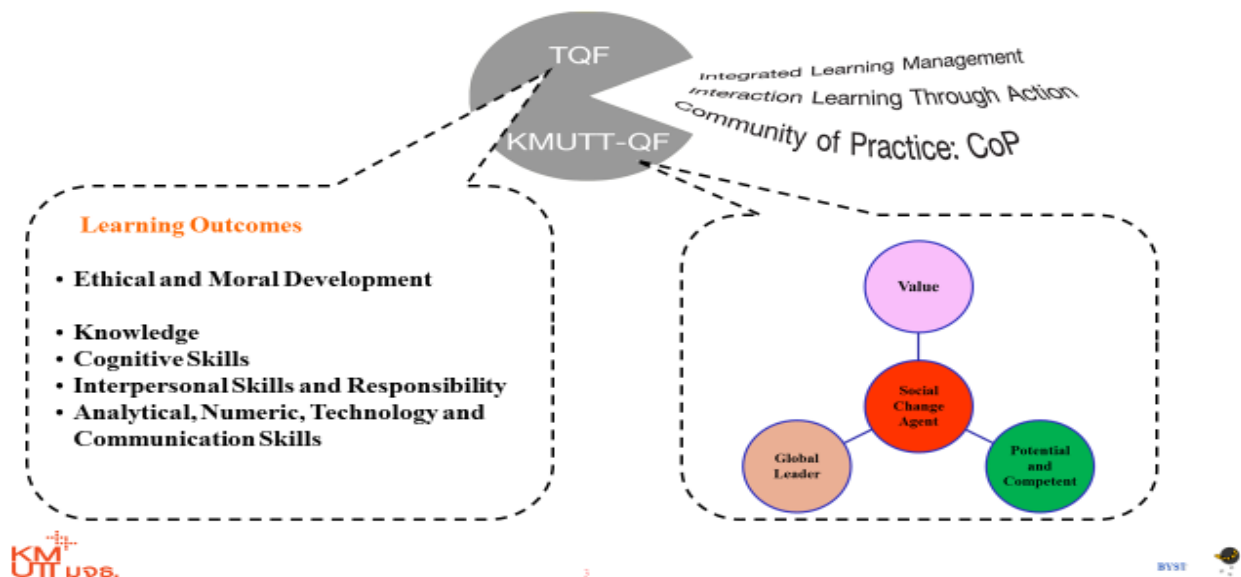


Fig. 1: A Framework for the New KMUTT General Education Program

Regarding figure 1, KMUTT QF aims for its graduates to be social change agents and the framework is composed of three components with details as follows: value (KMUTT's citizenship and social responsibility), potential and competence (general and professional knowledge; learning, thinking, management and professional skills); and global leaders (adaptability and leadership). Some elements are applied to frame the general education framework.

Another requirement for the educational institutes in order to offer degrees is the Thai Higher Education Qualification Framework (TQF) which consists of five major components: ethical and

moral development; knowledge; cognitive skills; interpersonal skills and responsibility; and analytical, numeric, technology, and communication skills.

Based on the conceptual framework of the KMUTT general education program mentioned above, learning outcomes of general education are to be obtained and used in courses and learning method designs to 1) be of good health in mental, emotional, and physical aspects, 2) be able to live morally and ethically, 3) be able to acquire knowledge and solve daily problems (learning and thinking skills), 4) value and appreciate nature, culture and arts, 5) be able to self-manage and play a role as a leader, and 6) be enabled to use language to communicate effectively.

4.2 The New KMUTT General Education Program 2010

In addition, the outcome based education concept proposed by Chulalongkorn University is applied as a course design framework as shown in figure 2. Course contents and teaching and learning processes of the KMUTT general education courses have been built up under the principle of learner-centeredness with its teaching methodology varying according to the learning outcomes of each particular course such as Problem-Based Learning (PBL), Research-Based Learning, and Activity-Based Learning.

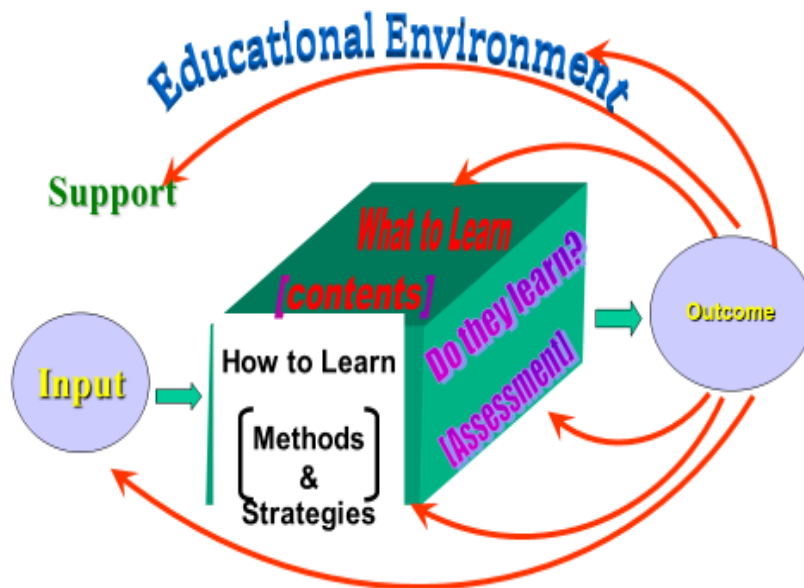


Fig. 2: General Education Course Design Framework

The courses provided in the 2010 general education program comprises 25 credits for compulsory courses with 3 clusters including a health and physical cluster, an integrated cluster, and a language cluster, and 6 credits for elective prescribed courses as shown in table 1 below. Two responsible agencies are involved in offering general education courses: the Office of General Education and the Department of Language.

Table 1: The New General Education Program Structure 2010

Course Cluster	Total Credits	Responsible Agency
Compulsory Courses	25 Credits	
<ul style="list-style-type: none"> • Health and Physical Cluster 	1 Credit	Office of General Education
<ul style="list-style-type: none"> • Integrated Cluster 	15 Credits	Office of General Education
<ul style="list-style-type: none"> • Language Cluster 	9 Credits	Department of Language
Elective prescribed courses	6 Credits	Office of General Education/Faculty/Department concerned
Total	31 Credits	

The structure of the General Education program, particularly the contents of each course, has been framed by considering the skills and knowledge necessary for studying in KMUTT during each year of enrollment. Students need to acquire skills for adjusting and adapting themselves, together with analytical skills, knowledge searching and managerial skills. KMUTT students enrolled in the 2010 academic year must take 25 credits of compulsory courses as shown in table 2. The Department of Language is responsible for the teaching and learning of 9 credits of language cluster courses. Apart from taking the 25 compulsory credits as explained above, students, according to their preference and interest, must take at least 6 credits from the elective prescribed courses offered.

Table 2 Courses Structure of General Education Program 2010.

Learning Outcomes of KMUTT General Education Course	Course Structure of General Education Program (31 Credits)
	Compulsory Courses (16+9 Credits)
Physical Health	GEN 101 Physical Education 1 (0-2-2)
Morality and Ethics of Living	GEN 111 Man and Ethics of Living
Life-Long Learning	GEN 121 Learning and Problem Solving Skills 3 (3-0-6)
Systematic Thinking	GEN 231 Miracle of Thinking 3 (3-0-6)
Value and Beauty	GEN 241 Beauty of Life 3 (3-0-6)

Technology, Innovation and Management	GEN 351 Modern Management and Leadership 3 (3-0-6)
Language and Communication	LNG 101-104 / LNG 105-106 (9 Credits)
	Elective Prescribed Courses (6 Credits)

Note: Students who obtain acceptable English scores in accordance with the standard set by the Department of Language can take higher level Language Courses.

4.3 Course Description

This section will present the details of general education compulsory courses in brief.

GEN 101 Physical Education

This course aims to study and practice sports for health, principles of exercise, care and prevention of athletic injuries, and nutrition and sports science, including basic skills in sports with rules and strategy from popular sports. Students can choose one of several sports provided, according to their own interest. This course will create good health, personality and sportsmanship in learners, as well as develop awareness of etiquette of playing, sport rules, fair play and being good spectators.

GEN 111 Man and Ethics of Living

This course studies the concept of living and working based on principles of religion, philosophy, and psychology by fostering students' morality and ethics through the use of knowledge and integrative learning approaches. Students will be able to gain desirable characteristics such as faithfulness, social responsibility, and respect of others, tolerance, acceptance of differences, self-discipline, and respect for democracy, public awareness, and harmonious co-existence.

GEN 121 Learning and Problem Solving Skills

This course aims to equip students with the skills necessary for life-long learning. Students will learn how to generate positive thinking, manage knowledge and be familiar with learning processes through projects based on their interest. These include setting up learning targets; defining the problems; searching for information; distinguishing between data and fact; generating ideas, thinking creatively and laterally; modeling; evaluating; and presenting the project.

GEN 231 Miracle of Thinking

This course aims to define the description, principle, value, concept and nature of thinking to enable developing students to acquire the skills of systematic thinking, systems thinking, critical thinking and analytical thinking. The Six Thinking Hats concept is included. Moreover, idea connection/story line and writing are explored. Examples or case studies are used for problem solving through systematic thinking using the knowledge of science and technology, social science, management, and environment, etc.

GEN 241 Beauty of Life

This course aims to promote the understanding of the relationship between humans and aesthetics amidst the diversity of global culture. It is concerned with the perception, appreciation and expression of humans on aesthetics and value. Students are able to experience learning that stimulates an understanding of the beauty of life, artwork, music and literature, as well as the cultural and natural environments.

GEN 351 Modern Management and Leadership

This course examines the modern management concept including basic functions of management—planning, organizing, controlling, decision-making, communication, motivation, leadership, human resource management, management of information systems, social responsibility—and its application to particular circumstances.

5. Summary and Conclusion

The new KMUTT general education program has been implemented for four years, and a lot of experience has revealed whether results gained were expected and unexpected. Lessons learned from implementation reveal that the application of active learning in general education courses, particularly in compulsory courses, continues to need research results to support effective implementation in learning and teaching. Several factors, the number of students per class, teachers' understanding of learning objectives, and the availability of learning resources, should be of concern during the designing process. Nonetheless, KMUTT keeps learning by doing to find an appropriate approach to design and implement a general education program. At present, KMUTT is in the process of assessing its graduates to ascertain the extent to which the expected learning outcomes are being achieved.

6. References

Harvard University. (2014, November 5). *Program in General Education*. Retrieved from
Homepage § Program in General Education:
<http://www.generaleducation.fas.harvard.edu>

International Christian University. (2014). *ICU General Education Handbook*. Tokyo, Japan: International Christian University.

Mastor, Khairul Anwar. (2012). Malaysian Experiences in Cultivating Quality Global Citizens through General Education Program. *Journal of General Education*, 3(1), 15-24.

Ministry of Higher Education. (2005). *The Criteria Standardization of the Undergraduate Study Level Program B.E. 2548*. Bangkok: Ministry of Education.

Neuabauer, D. (2007). *General Education in a Thai Context developing a Proposed System*. Bangkok: Concept Paper presented to King Mongkut's University of technology Thonburi.

Pitton Sinlarat. (2007). *General Education Program: Concept and Approach (in Thai)* (3rd ed.). Bangkok: Chulalongkorn Press.