

DEVELOPMENT OF CURRICULUM STANDARDS FOR MASTER'S AND DOCTORAL DEGREE PROGRAMS IN EDUCATIONAL TECHNOLOGY IN THAILAND

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Abstract

The purpose of this research was to develop curriculum standards for Master's and doctoral degree programs in educational technology in Thailand. The samples were: 1) six experts in the fields of curriculum quality assurance, educational technology curriculum, and criteria and evaluation; 2) sixty experts, including 18 curriculum committees, 16 instructors, 12 students, six academic support personnel, and eight stakeholders. Research procedures included: 1) the outlining of an educational technology curriculum standards framework; 2) the study of experts' opinions about educational technology curriculum standards; 3) the development of educational technology curriculum standards; 4) the validating of educational technology curriculum standards; and 5) the examination of educational technology curriculum standards. The statistics used for data analysis were means, standard deviations, and coefficients of variation. The research findings supported 10 curriculum standards for Master's and doctoral degree programs in educational technology, with 37 indicators. They were: 1) curriculum objectives, 2) course content structure, 3) instructional process, 4) extra curriculum activities, 5) instructional measurement and evaluation, 6) instructors and academic support personnel, 7) instructional resources, 8) quality of graduates, 9) research quality, and 10) curriculum management.

Keywords: curriculum standards, educational technology, higher education

Introduction

Managing education for quality and efficiency are important factors in the curriculum. The Government Sector has realized the importance of educational

development in order to support the objectives of the National Education Act B.E. 1999 (Office of the National Education Commission, 2002). This Act has led to the

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establishment of the Office for National Education Standards and Quality Assessment (ONESQA), whose role is to set up the quality assurance and educational standards assessment system. The assessment of quality and efficiency of curriculum is considered to be the main factor in the educational equality assessment process. The Ministry of Education requires all educational institutions to revise their curriculum at least every 5 years and national assessment has to be performed every 5 years (Commission on Higher Education (2005)). Accordingly, many governmental sector organizations whose role is to monitor educational quality have developed standards criteria for use as tools in auditing the assessment and ensuring educational quality. For example, the standard of external quality assurance in higher education has been developed by ONESQA (2005), and the Curriculum Standard Criteria in Graduate Education have been developed by Commission on Higher Education (2005). These standard criteria have been developed for use in controlling the national educational standards and the overall curriculum standards, not to evaluate any specific curricula.

The educational technology curriculum currently used by many educational institutions contains many differences in the curriculum objectives, course content and structure, instructional management, supporting resources, graduate quality, research quality, as well as the curriculum management, each of which contains different practical standards, resulting in different quality of outcomes. Currently, however, there is no development or mention of the curriculum standard in the field of educational technology, which is the specific standard of

the field and accepted by personnel in that field and which can be applied as the quality guidelines for the management of the field of educational technology. Meanwhile, in the United States, the Standard for Accreditation of Programs in Educational Communications and Instructional Technology (ECIT) has been developed by the Association for Educational Communications and Technology (AECT), in cooperation with the National Council for Accreditation of Teacher Education (NCATE). These standards have been used as the guidelines in managing the curriculum for the field of educational technology and related subjects in the United States.

With this background, the researcher investigated the development of curriculum standards for the subject of educational technology in the context of teaching educational technology in Thailand. The researcher intended to develop the curriculum standards at the Master's degree and doctoral degree levels. The curriculum standards for the educational technology subject consist of factors that influence the curriculum quality, such as the instructional management, extra-curriculum activities, the management of the supporting resources, research quality, graduate quality and the management of curriculum. This curriculum standard may be used as the guidelines for the promotion, supervision, auditing, assessment and the curriculum quality guarantee of the educational technology subject.

Purposes of the research

There were three purposes of the present study:

1. To examine the opinions of curriculum committees, instructors, students, academic support personnel and

stakeholders, who employed the educational technology graduates, towards the curriculum standards of Master's and doctoral degree programs in educational technology in Thailand;

2. To develop a set of curriculum standards for master's and doctoral degree programs in educational technology in Thailand; and

3. To evaluate the curriculum standards of master's and doctoral degree programs in educational technology in Thailand.

Selection of subjects

The subjects of this research were selected by purposive sampling. They were divided into two groups: 1) six experts in the field of curriculum quality assurance, educational technology curriculum, criteria and evaluation. These experts were used to examine the content validity of the educational technology curriculum standards which were developed; and 2) sixty subjects from fifteen higher education institutions, comprising eighteen curriculum committees, sixteen instructors, twelve students, six academic support personnel, and eight stakeholders, whose opinions about standards were sought.

Procedures and Methods

The research procedures included the following 5 steps:

Step 1: developing the framework of curriculum standards of Master's and doctoral degree programs in educational technology in Thailand. The researcher analyzed the related theories, research and documents about standards development, indicator assignment, curriculum and curriculum evaluation, and the educational technology curriculum documents in the higher

education institutions which were used as the subjects of this study. The researcher analyzed information above to outline the curriculum standard framework, which included the issues in each standard and indicators in each issue. Then, the researcher examined the content validity of the curriculum standards which were developed by interviewing three experts in the field of curriculum quality assurance, educational technology, criteria and evaluation for adjusting the curriculum standards framework.

Step 2: studying the experts' opinions toward the curriculum standards of Master's and doctoral degree programs in educational technology in Thailand. The researcher interviewed the subjects who used the educational technology curriculum. The subjects included the curriculum committees who were interviewed about the curriculum management, the instructors and students who were interviewed about the instructional process, the academic support personnel who were interviewed about the management of instructional resources in the department, and, finally, stakeholders who were interviewed about the performance expected of educational technology graduates. Subsequently, the researcher summarized the opinions and suggestions from interviewing the subjects about each standard and indicator, by using a qualitative data analysis method.

Step 3: developing the curriculum standards of Master's and doctoral degree programs in educational technology in Thailand. The researcher analyzed and synthesized the information obtained from interviewing the subjects and information from studying the related documents and research as outlined above, in order to develop the

criteria for the educational technology curriculum standards. These curriculum standards consisted of the standard's topics, indicators in each standard's topics, and criteria in each indicator. Subsequently, the researcher examined the content validity of the curriculum standards which were developed by interviewing three experts in the field of educational technology, criteria and evaluation, in order to adjust the details of educational technology curriculum standards.

Step 4: validating the curriculum standards of the developed Master's and doctoral degree programs. The researcher arranged an academic seminar of seventeen experts in educational technology, who were educational curriculum committees from fourteen higher education institutions. They provided recommendations about the suitability and possibility of implementing the curriculum standards in higher education institutions.

Step 5: examining the curriculum standards of Master's and doctoral degree programs in educational technology in Thailand. The researcher used a Likert Scale questionnaire to request the experts who attended the seminar to provide their opinion about the appropriateness of the indicators and the criteria of the educational technology curriculum standards. Subsequently, the researcher analyzed the data by using means, standard deviations, and coefficients of variation in order to select the appropriate criteria for assigning the educational technology curriculum standards.

Results

As a result of the empirical consultation process, the following curriculum standards for Master's and doctoral degree programs in educational technology, Thailand

comprising 10 standards and 37 indicators, were developed:

Standard 1: Curriculum Objectives, consisting of one indicator:

1.1 identify the curriculum objectives

Standard 2: Course Content and Structure, consisting of two indicators:

2.1 identify core courses in educational technology

2.2 include a course improvement process

Standard 3: Instructional Process, consisting of six indicators:

3.1 provide students with preparation for prior learning

3.2 utilization of various instructional methods

3.3 conduct research for improvement of instruction

3.4 facilitate interactions with students

3.5 provide digital and on-line instruction

3.6 provide cooperation in research and instruction

Standard 4: Extra-Curriculum Activities, consisting of four indicators:

4.1 provide students with competency development activities

4.2 provide academic service activities

4.3 provide activities for developing a knowledge-based society

4.4 provide activities for developing professional skills.

Standard 5: Instructional Measurement and Evaluation, consisting of one indicator:

5.1 provide instructional measurement and evaluation process

Standard 6: Instructors and Academic Support Personnel, consisting of eight indicators:

6.1 percentages of instructors who hold a doctoral degree

6.2 having criterion on numbers and educational degrees of instructors

6.3 having criterion on numbers and educational degrees of academic support personnel

6.4 setting qualifications of academic support personnel

6.5 setting roles and functions of academic support personnel

6.6 conduct performance appraisal for academic support personnel

6.7 instructors participate in academic seminars and present academic papers

6.8 provide skills development for academic support personnel

Standard 7: Instructional Resources, consisting of two indicators:

7.1 provide the necessary and sufficient support resources

7.2 implement the management process of learning resources

Standard 8: Quality of Graduates, consisting of four indicators:

8.1 setting criteria for student graduation

8.2 graduates are knowledgeable in the field of study

8.3 graduates have the desired characteristics

8.4 percentage of graduates employed

Standard 9: Research Quality, consisting of three indicators:

9.1 specify the ratio of research advisors and students

9.2 implement research quality control

9.2 percentage of published research

Standard 10: Curriculum Management, consisting of six indicators:

10.1 having admission management

10.2 specify applicant qualifications

10.3 specify ratios of instructors and students

10.4 allocate funds for instruction and research

10.5 allocate budgets for instruction

10.6 implement an evaluation and curriculum improvement process

Discussion

The curriculum standards for the Master's and doctoral degree programs in educational technology in Thailand comprised 10 standards and 37 indicators, each of which will now be discussed:

Standard 1: The Curriculum Objectives

The results of the empirical research demonstrated that establishing the educational technology curriculum objectives in the higher educational institutions involved a number of important issues. At the Master's degree level, the learners are expected to have knowledge and competency in: 1) The design and development of the instructional system and the instructional media; 2) Research and application in the educational technology field; and 3) The management of the educational technology work system. At the doctoral degree level, the learners are expected to develop skills in: 1) The analysis, planning and management of the instructional system and the instructional

media system; 2) Research for the development of the body of knowledge in the science of educational technology; 3) The analysis, planning and management of the educational technology work system; and 4) Being technical leaders in the field of educational technology. These objectives are consistent with the views of the experts who concluded that graduates at the Master's degree level must possess the design and development skills in the research and the educational technology work system management, while at the doctoral degree level, the graduates must possess the skills in the analysis, planning and the management of the educational technology work system, being the technical leaders and the development of the body of knowledge in the science of educational technology subject. These views were expressed at the Chulalongkorn University academic seminar, held on November 25, 2005.

Standard 2: Course Content and Structure

The results of the study concluded that the course content and structure's requirement was to ensure the course content integration in the major subject, which is consistent with the intention of the National Education Act (1999), that emphasized content integration (Office of the National Education Commission, 2002). It was also consistent with the conclusion, expressed in the academic seminar referred to above, that the course content should be integrated, such as the Research and Theory in Educational Technology subject at Mahasarakham University. The research concluded that the content should be integrated in the individual subject of major subjects at the Master's degree level. For example, the content in

Psychology in educational technology is consistent with the individual subjects required in the group of major subjects of the higher educational institutions, such as the individual subject of Psychological Foundations in Education Technology at Kasetsart University. Secondly, the contents relating to the design of the materials and communication were consistent with the views of the business operators who expected the graduates in educational technology to possess skills in the design of materials and communication. Third, the contents relating to the knowledge management were to be integrated, which was consistent with the conclusion in the academic seminar for the integration of contents relating to the knowledge management in the individual subjects of the major subject group. Finally, the contents relating to the project evaluation and the evaluation of the cost effectiveness should be integrated, which was consistent with the views of the business operators who believed that the graduates in educational technology should not only play a role in designing and developing products, but also be involved in analyzing the cost effectiveness of those products. At the doctoral degree level, the course content to be required was: 1) the content relating to the provision of consultation in educational technology, consistent with the views of the curriculum management board, which stated that doctoral graduates must have the skills in providing consultation in educational technology; and 2) the content with respect to the leadership status, which was consistent with the individual subject of Leadership in Technology of Education, as required in the major subject group at Naresuan University.

Standard 3: Instructional Process

The research concluded that the instructional management processes at the Master's degree and doctoral degree levels must be diversified, consistent with the requirement of National Education Act, 1999 (Office of the National Education Commission, 2002). Vibulchai (2001) demonstrated that the suitable instructional methods in the higher educational level consisted of Research-Based Learning, Problem-Based Learning, Collaborative Learning and Student-Based Learning. This finding is consistent with the recommendations of the Chulalongkorn University Curriculum Quality Assurance report (2005), which required the instructors to integrate the performances, process and experiences obtained from their research into their instruction and to encourage students to think and analyze with judgment, seeking for knowledge by themselves and develop themselves continuously throughout their lives. In addition, the development of the instructional quality was also considered to be important. The instructors should use research for the improvement of instruction quality which is consistent with the National Education Act (1999), that required the educational institutions to encourage their instructors to conduct research for the learning development suitable for the learners in each educational level. It was also consistent with Chulalongkorn University Curriculum Quality Assurance report (2005), requiring the instructors to publish their research regularly. In addition, instructors must be capable of using digital and online instruction, which is consistent with Atisubda's research (2005), that indicated that the educational institutions should offer

computer-based lessons for at least 25% of individual subjects in the course. Furthermore, departments should develop cooperation on the instruction and research with other departments where the instruction in the educational technology curriculum was also available in order to strengthen the educational technology subject in Thailand. This was consistent with the intention of Chulalongkorn University Curriculum Quality Assurance report (2005), that required the cooperation in the instruction to be established, particularly for the research performed with other departments, faculties or other educational institutions.

Standard 4: Extra-Curriculum Activities

The results of the research concluded that the pattern of the extra-curriculum activities organization should consist of activities for the development of the learners' potential, activities for the technical services, activities for the development of the learning society in the departments and the activities for the enhancement of occupational skills, which is consistent with the Standard of External Quality Assurance in Higher Education (ONESQA, 2005), that required the higher educational institutions to develop a society of learning, a society of knowledge and a society of intelligence in the educational institutions. They must have the technical activities or technical service projects, organized in response to social requirements, and to be consistent with the views of the Curriculum Management Board, which suggested that educational technologists must be social developers for them to realize their abilities.

Standard 5: Instructional Measurement and Evaluation

Regular instructional evaluation must be performed by giving chances for learners to participate in the instructors' teaching evaluation for the development of the instruction and the learners must be given chances to evaluate their own learning ability. This standard is consistent with Vibulchai (2001), who concluded that learners must be given chances to participate in the instructional evaluation at all times for the improvement of the instruction and the instructors must require learners to participate in self-evaluation regularly. In addition, the instructors should require the learners to prepare the file accumulating their own works in the collection of knowledge information, individual subject performances and the self-evaluation which was consistent with Atisubda's research (2005), which required an electronic collection works filing system to be developed in the graduates' educational institutions.

Standard 6: Instructors and Academic Support Personnel

It was found that important issues in educational standards consisted of: 1) The qualifications required of the instructors and academic support personnel, which was consistent with the Curriculum Standard Criteria in Graduate Education (2005) that required specific qualifications of instructors, thesis advisory instructors and instructors who are responsible for thesis examination; 2) The requirement of the roles and duties of the academic support personnel which was consistent with the Chulalongkorn University Curriculum Quality Assurance report (2005) that required the quantity, quality and tasks of academic support personnel to be matched with the curriculum works; 3) The development of the instructors' and academic support personnel's efficiency, which was consistent with the research result of Ussavasuebsakul

(2003). He found that, for the improvement of the instructor's curriculum, one of the important factors was that the instructors must continually develop themselves through their performances, technical articles and research works.

Standard 7: Instructional Resources

Based on the research results, it was concluded that the departments must provide the instructional support resources management process, which was consistent with the Chulalongkorn University Curriculum Quality Assurance report (2005), that required the departments to survey their curriculum resources requirements, the establishment of additional capital sources for resources support other than the national budget, university and their faculty budget for effective supervision and auditing for the maximum benefits from such resources.

Standard 8: Quality of Graduates

It was found that the factors that resulted in high quality graduates consisted of: 1) Departments establishing the criteria of the graduates' graduation to be consistent with the Curriculum Standard Criteria in Graduate Education (2005), which was the Ministry of Education's notification requiring all higher educational institutions to follow; 2) Departments establishing standards of required effectiveness of the educational technology graduates, which was consistent with Atisubda's research (2005), that required educational technology effectiveness of the graduates; and 3) Departments determining the percentage of the employed graduates compared to all graduates and the collection of information on a yearly basis, which was consistent with the Standard of External Quality Assurance in Higher Education (ONESQA, 2005), that required

one of the indicators to be available (i.e., percentage of the employed graduates within a period of one year after graduation).

Standard 9: Research Quality

It was found that the factors affecting the research or thesis quality consisted of: 1) The departments establishing a suitable ratio of thesis advisory instructors to research students, which was consistent with the Curriculum Standard Criteria in Graduate Education (2005), that required one potential regular instructor to act as the advisory instructor for no more than 10 graduate and doctorate students; 2) The departments having a thesis quality control process, which was consistent with Chulalongkorn University Curriculum Quality Assurance report (2005) that required that the thesis be presented in the closed system and the monitoring and assessment system must be available for the thesis progress as the control measure for enabling students to be graduated within the scheduled time limits; 3) The departments to establishing a ratio of the published and publicized theses, compared to all theses available in each academic year. This requirement was consistent with the Standard of External Quality Assurance in Higher Education (ONESQA, 2005) that required one of the indicators to be available, (i.e., the number of published and publicized thesis in the master's degree and doctoral degree levels), compared to all of such theses and was consistent with the Chulalongkorn University Curriculum Quality Assurance report (2005), requiring that the thesis be published in a refereed journal.

Standard 10: Curriculum Management

According to the research, the issue agreed by the sample group in the most level was that the departments must provide for an assessment and curriculum improvement process. The persons who are involved with the educational technology subject, whether

they are instructors, students or the business operators who employ the graduates, should share their views for curriculum improvement, which was consistent with the practical guidelines of the higher educational institutions that required students to share their views with respect to the curriculum (Curriculum Management Board interview, 2005). It was also a view shared by the business operators who said that the departments should give them an opportunity to share their views on curriculum improvement on a continuous basis, including the skills and characteristics required by graduates.

Recommendations for Utilization

This article has outlined Master's degree and doctoral degree curriculum standards for the education technology subject in Thailand and has established the quality guidelines for their compliance. However, the departments should establish the assessment criteria for the action into 5 levels as follows: Acting in accordance with the criteria more than or equal to 90% is considered as an excellent educational standard; acting in accordance with the criteria at 80-89% is considered as a very good level; acting in accordance with the criteria at 70-79% is considered as a good level; acting in accordance with the criteria at 60-69% is considered as a fair level; and acting in accordance with the criteria at less than 60% is considered as a requirement for the improvement of the course. In this way, educational standards for educational technology courses will be kept under constant review and raised continually.

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