

Factor Analysis of Key Success Indicators in Curriculum Quality Assurance Operation for Bachelor's Degree in Physical Education

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Abstract

The purpose of this study was to analyze the factors of key success indicators in curriculum quality assurance operation for bachelor's degree in Physical Education. The 576 subjects were selected using cluster sampling from curriculum lecturers, staffs, and lecturers at the Academy of Physical Education Curriculum. The instrument was a related questionnaire with a 1-5 rating scale. The data were analyzed using exploratory factor analysis (EFA) with principal component analysis and orthogonal rotation by the Promax method.

The results of the study revealed that there were four factors influencing key success indicators in curriculum quality assurance operation for bachelor's degree in Physical Education, sorted by priority. The four factors are: 1) learning management and student assessment components, 2) student potential improvement components, 3) quality of lecturer components, and 4) system and mechanism of curriculum administration. Generally, the obtained factors accounted for 70.166 percent of key success indicators in curriculum quality assurance operation for bachelor's degree in Physical Education.

Keywords: Key Success Indicators, Quality Assurance, Bachelor's Degree in Physical Education

1. Introduction

Education quality assurance is an instrument for improvement and development of education quality. It is focused on the entire educational management and service system and it is a process to evaluate the quality of management. The keys components are quality of management, teachers, and learners which is determined with the objective to provide satisfaction to all parties involved. Every associated parties should be able to place confident in graduates and the quality of the institute. Ryan (2015) stated that the quality of higher education can be evaluated by efficiency of lecturers and students. Therefore, quality assurance is important to Thailand's education reform which can lead to a uniform standard of education in Thailand. Higher education is the most advanced level of education which provides broad learning in accordance with the philosophy "higher education is a series of courses to transform students into graduates whose needs have been properly fulfilled" (Office of the Higher Education Commission, 2014). Higher education institutes are required to provide the society with confidence in development of knowledge and production of graduates who can follow national development strategies. Institution leaders need to have strategies, policies and plans to introduce a quality culture for their staff, lecturers and students. Additionally, building a quality culture is associated with developing an internal quality assurance system within an institution. The involvement of every individual and the commitment of the leaders make quality culture invaluable to the institution. (Nguyen, Ta & Nguyen.2017) Currently, there is a division of quality assurance and the indicator is divided into three levels: 1) curriculum level. The standardization of curriculum management is linked to the performance indicators in the framework of the National Higher Education Qualifications Framework 2009, whose components include graduates, students, lecturers, curriculum, class management, assessment of learners, and learning support. 2) faculty level. Lastly, 3) institutional level. Indicators are production of graduates, research, academic service, preservation of arts and cultures, and learning support. (Office of the Higher Education Commission, 2014). It can be seen from the indicators that curriculum quality assurance is crucial to higher education institutions' mission in several aspects including quality of teaching, quality of personnel, sufficient

resource quality, quality of mission-based-research, quality of graduates, and quality of other academic work. Higher education institutions serve and guide the society. If the quality of the curriculum is high, the quality of education in the faculty and the institute will improve as well.

Physical Education is an available subject in higher education. Institutes that offer courses are required to produce teachers with their five years curriculum in accordance with national higher education standards on bachelor of education degrees. Courses are offered universities supervised by the government. The Institute of Physical Education, Rajabhat University plays an important part in national development since Physical Education is essential to health awareness of the people (Khuna-aphisit, 2010). Production of quality graduates majoring in Physical Education needs standards to ensure confidence in quality of graduates. Therefore, responsible institutes are required to conduct quality assurance and report their progresses at the end of every academic year as an insurance to learners, parents, societies, and communities, who entrust them with their education. This can lead to improvement of standards in every level of education. Noha (2015) stated that the concept of quality assurance for quality improvement is a part of management process which needs to be continuously conducted.

The researchers are interested in exploratory component analysis to evaluate the structural accuracy of observable variables and establish a frame of concepts to develop a model of key success indicators in curriculum quality assurance operation for bachelor's degree. The results of this research will be an important guideline for the curriculum in the field of physical education. At the bachelor degree level, the quality of education was evaluated according to the indicators appropriate to the operating conditions. It is also recognized that quality assurance helps improve the performance of education continuously.

2. Method

2.1 Objectives

To study factor analysis of key success indicators in curriculum quality assurance operation for bachelor's degree in physical education.

2.2 Sample

The subjects are lecturers and teachers of government education institutes offering bachelor degree courses in Physical Education. The sample size needs to be considerably large using the rule of thumb suggested by Hair et al. (2006) that factor analysis should set the groups to variables ratio at no less than 10:1. This research's sample size is 576 lecturers selected via cluster sampling

2.3 Variables

The researchers studied the concepts of curriculum quality assurance, national education standards, and principle of curriculum management (AUN, 2017; Deming, 1986; Kurusapha Committee, 2014; Ministry of Education, 2011; Office of the Higher Education Commission, 2014; Thailand's University President Conference, 2014; Thumthong, 2010) to use as a framework for the research and have experts evaluate the correspondence using Delphi Technique. The four components found are: 1) system and mechanism of curriculum administration components 2) quality of lecturer components 3) learning management and student assessment components 4) student potential improvement components.

2.4 Research Tools

The instrument was a related questionnaire of key success indicators in curriculum quality assurance operation for bachelor's degree in physical education with a 1-5 rating scale.

2.5 Data Analysis

The data were analyzed using exploratory factor analysis (EFA) with principal component analysis and orthogonal rotation by the Promax method.

2.6 Ethical Considerations

The researcher clearly explained the purpose and the procedures of the study to the participants, be used for research and then obtained informed consent from the participants. This research study was approved by the Human Research Ethics Committee, Srinakharinwirot University (certification number: SWUEC/E-061/2559).

3. Results

The result of analysis of key success indicators in curriculum quality assurance operation for bachelor's degree in

Physical Education. There are four components indicating key success of curriculum quality assurance operation for bachelor's degree in Physical Education at 70.166%, sorted by Eigen values in descending order as follows: 1) learning management and student assessment components, 2) student potential improvement components, 3) quality of lecturer components, and 4) system and mechanism of curriculum administration.

Table 1. Eigenvalues percentage of variations and percentage of accumulated variations

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	14.406	25.274	25.274	12.839
2	11.148	19.559	44.833	10.409
3	8.252	14.477	59.310	10.159
4	6.188	10.856	70.166	9.686

Each component is explained below.

1. First component: learning management and student assessment consists of 14 indicators with component weight ranged from .858-968 (Eigenvalues = 12.839). The top five are ranked as follows.

Table 2. First component: learning management and student assessment

Indicators	Factor Loading
1) Supervise standards on teachers' course syllabuses by improving content, activities, teaching methods, evaluation, and assessment.	.968
2) Set indicators of teaching success focused on learners in each course by conducting practice class, group discussion, seminar, case study, or research projects, and sessions with experts from outside the institute, outfield training, and evaluating success to improve the effectiveness of teaching.	.964
3) Set indicators, objectives, and evaluation on integrating academic services into teaching and apply academic management in sport teaching to teaching, both of which can affect the learning process.	.960
4) Evaluation and assessment need to be standardized and evaluation and assessment tools should be inspected at least once per curriculum edition	.956
5) Develop a database to manage learning.	.951

2. Second component: student potential improvement consists of 12 indicators with component weight ranged from .832-925 (Eigenvalues =10.409).The top five are ranked as follows.

Table 2. Second component: student potential improvement

Indicators	Factor Loading
1) Set goals, plan, and manage electronic database, forums, and websites to useful announce news and information for students such as scholarships, research funds, student development programs, job advertisement, up to date academic news related to the field of which students should be aware.	.929
2) Conduct academic or social activities. Students should be mainly responsible in this operation to develop skills and experiences in cooperation.	.925
3) Set indicators, objectives, and evaluation on effectiveness in development of learning skills suited for the 21 st century.	.924
4) Set goals, plan, and create channels in which students can receive advice using technology such as e-mails, Facebook, Line groups, group discussion at least once per semester, and hold meetings between students and lecturers or have students attend seminars with lecturers or fellow students via multimedia or face-to-face contact.	.923
5) Survey information from students and alumni to learn their satisfaction on the institute in every aspect. This information can be used in development of future management plans.	.919

3. Third component: quality of lecturer consists of 14 indicators with component weight ranged from .756-869(Eigenvalues = 10.159). The top five are ranked as follows.

Table 3. Third component: quality of lecturer

Indicators	Factor Loading
1) Establish a senior-junior pairing system to help new generations of lecturers and researchers to aid them in research writing and presenting in academic conferences or publishing in journals.	.869
2) Plan a long term manpower rate for lecturers in the department and use information on available and required manpower rate at least five years into the future. Use this information to plan staff needs.	.841
3) Clearly define roles, duties, and responsibilities of lecturers in the department and assign them with tasks suitable to their qualifications, knowledge, capabilities, and experiences.	.821
4) Develop a system to support and train every Physical Education teachers in the department, reinforcing their professional experiences.	.818
5) Define required qualifications of lecturers in the department in accordance with the quality of the curriculum.	.812

4. Fourth component: system and mechanism of curriculum administration consists of 17 indicators with component weight ranged from .513-802(Eigenvalues = 9.686).. The top five are ranked as follows.

Table 4. Fourth component: system and mechanism of curriculum administration

Indicators	Factor Loading
1) Develop a system of quality assurance on curriculum management quality. Courses are designed in accordance with desired qualities of graduates in order for lecturers to be aware and develop learners' skills required in their respective courses.	.802
2) Create a calendar of curriculum operation according to the four objectives of the institute to use as a direction for operation and establish confidence that the operation is proceeding according to plan and schedule.	.800
3) Develop a system to supervise and manage operation of curriculum in accordance with the national standards for higher education in terms of curriculum, profession, and expertise throughout the duration of the education.	.777
4) Develop a system to manage knowledge focusing on development of skills, teaching, student selection process, preparation process, student development activities suitable for the 21 st century, and management of lecturer support system.	.776
5) Develop a plan to select students into the Physical Education curriculum in accordance with the government and private organizations' needs, as well as the university's policy and availability of lecturers. Review and improve required qualities of graduates. This plan should suit the department, education level. Therefore, the needs for graduates are fulfilled. The curriculum should be up-to-date and appropriate to changes in each aspect.	.763

4. Discussion and Conclusions

The first component, learning management and student assessment, is the most important due to the fact that curriculum administrators need a database system for course administration. Course syllabuses are standardized and updated in terms of content, learning activities, teaching methods, evaluation and assessment. All sections of a course are conducted under the same standard. Teachers are required to possess suitable qualities to their courses and learners should receive diverse learning via multimedia and technology, which reinforces their knowledge and

learning skills. Kurusapha (2014) set a standard on production of teacher regarding class management and required course syllabuses detailing courses according to the standard of expertise in higher education, classes to be conducted according to the syllabuses, and credits and class hours according to the curriculum. Analysis on class results in each course as a guidance to improve teaching reflected directions for curriculum administration in future semesters. This corresponds Amphansirirat et al. (2013) who found that evaluation of courses according to learners' achievement as a guidance to improve future curriculum and class focused on learners with practice classes, group discussions, seminars, case studies or research projects, extracurricular class by outside experts, and field training sessions will help develop students professional skills, life skills, and social skills (Office of the Higher Education Commission, 2009).

Second component, student potential improvement, ranks second in terms of importance due to the fact that effective curriculum administration requires emphasis to be given on support and development of student potential. Academic or social activities should be held with students given main responsibilities to develop their skills and cooperation experiences in accordance with standards on teacher production. Kurusapha (2014) stated that activities reinforcing teachers', institute administrators, and educators' desired qualities should be held throughout duration of the curriculum and evaluation of participants should be conducted systematically. Indicators, objectives, and evaluation of effectiveness in reinforcing learning skills in the 21st century via teacher advice are essential to success of students. Aslina et al (2016) found that skills in giving advice are crucial for teachers as a factor to establish relationship between teachers and learners. These skills affect learning and well-being of learners. Students' longevity and supporting talented students should be given priority as well. Risks of students with low academic scores, dropouts, and delayed graduations should be managed. Sarrío Rosa & Coelho (2010) found that institutes prioritize each aspect in accordance with policies of countries with decreasing rates of dropouts and increasing rates of graduation. Goals should be set and plans should be made on management of electronic database, which serves as a channel of announcement and useful information for students such as scholarship information, student development activities, student recruitment, and modern and relevant academic information that students need to know. Develop channels for students or stakeholders to make suggestions regarding how to improve the service. Study satisfaction on all services provided by the institute to use as information for development of the service system and plan for the next academic year. (Maragakis, Dobbelsteen & Maragakis, 2016)

Third component, quality of lecturer, requires curriculum administrators to give importance on lecturers in the department. Long term plans should be made on teaching manpower. Information on manpower of lecturers and staffs both currently and at least five years into the future should be considered when planning staff requirement. Lecturers are selected by qualities suitable for courses and curriculum. There should be specific qualities and they should be experts on Physical Education careers (national athletes, national coaches, referees of sports associations).

Skills and knowledge obtained via self-development training programs with objectives to reinforce knowledge and skills on Physical Education class conduction should be applied. Theppornbanchakit (2013) found that directions of international curriculum administration in private universities are guided toward management of human resources. The direction guided by research should be considered in development of more effective class management. Teachers should be encouraged to use new teaching methods that improve students' learning skills, especially problem-based learning and research-based learning. Mentors should be assigned to new generation researchers to help write research reports for presentations at academic conferences or publish in journals. Duguet, Mener, & Morlaix (2016) found that educational research is the key predictor of success in universities in France.

Operation success evaluation and feedback of operation results as well as development results should be considered when assigning tasks or making agreements in working procedure in order to correct, praise, reward, and adjust suitable salary and fringe benefits for staffs. Wiwatphatthana, Phoomphattharakhom, & Siriwohan (2014) found that development of staff potential and appropriate salary affect evaluation of operation by staffs and teacher evaluation help improve the quality of teaching. Therefore, curriculum administrators should give advice on operation evaluation in order to improve and increase operation quality (Paul et al., 2016)

Fourth component, system and mechanism of curriculum administration, controls the operation of quality assurance on undergraduate Physical Education curriculum due to the fact that it is a process of planning, evaluation, and following-up of quality and standard of the curriculum. This should be set according to policies, goals, and specified standard quality level. In all processes, system and mechanism of curriculum administration need strategies obtained via SWOT analysis which can lead to a clearly defined strategy covering all objectives of the institute – class management, research, academic services, and supporting art and culture.

Curriculum administrators need an element of outside experts from government or private organization associated with Physical Education to obtain opinions on required knowledge and capabilities in real field operations which can be useful to the development and administration of the curriculum as well as education producing graduates who are capable of real teaching after graduation. Oyewole and Osalusi (2016) mentioned the concept of sustainable education standards. Class management should be supervised and cooperation from government and private organizations is encouraged. It is urgent to design curriculum suitable to the rapidly growing nature of the country. Risk management system should be developed and applied in curriculum administration. Trends analysis should be made using the curriculum information from the past three years. When curriculum administration is effective, the curriculum should be compared to other institutes offering courses on Bachelor of Physical Education according to overall quality administration principle. Benchmarking is a comparison of standards. Organizations with the best operation results should be selected for comparison. This concept is made with an objective to set goals for organizations wishing to compare their potential (Wareerat, 2011)

5. Recommendations

The result of this research revealed that key success in quality assurance of bachelor degree courses in the field of Physical Education should consist of the following four management components: 1) system and mechanism of curriculum administration 2) quality of lecturer, 3) learning management and student assessment, and 4) student potential improvement. The result of this research can be used as a guidance for curriculum administrators to consider when setting policies of bachelor degree courses quality assurance operation in the field of Physical Education. This can help improve the effectiveness of curriculum administration and make it truly suitable for operation conditions and contexts of bachelor degree courses in the field of Physical Education.

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