Development of an instructional quality assurance model in nursing science

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Abstract

The purpose of this study was to develop an instructional quality assurance model in nursing science. The study was divided into 3 phases; (1) to study the information for instructional quality assurance model development (2) to develop an instructional quality assurance model in nursing science and (3) to audit and the assessment of the developed model. The data were obtained from 37 external evaluation reports, 19 administrators, 374 nursing instructors, 654 nursing students and 9 specialists. The 8 research instruments were used in this phase. The data were analyzed through descriptive statistics, one-way analysis of variance, $PNI_{modified}$ index, the hierarchical linear model meta-analysis and content analysis were also used. Research results showed that; (1) the factors which affected the instructional quality of nursing science were the instructional quality assurance model that developed by the institutions, CU-QA84, the number of pages excluding the appendix of the assessment report and the quality of the report, (2) there were 3 models of instructional quality assurance needs such as 111, 011 and 000, and (3) the instructional quality assurance model in nursing science was systematic consisting of input, process and output. The operation was based on 3 domains: principles, concepts and practice. There were 6 standards and 18 indicators for instructional quality assurance in nursing science. There were 21 elements of guidelines for instructional quality assurance. This instructional quality assurance model was ranked from good to very good in all of the above categories.

Keywords: Instructional quality assurance, Nursing Education, Needs Assessment, Multi-site Evaluation

1. Introduction

Educational quality assurance is taking a major role in quality development in Thailand education of all systems. Nursing education is a professional education that constitutes education at the tertiary level. The instructional obligation highly crucial in producing quality nursing graduates to respond to society demand. Whereas, the National Education Act of 1999 (The Office for National Education Standards and Quality Assessment, 2004) requires all educational institutes to provide educational quality assurance, in which internal and external quality assurance systems included.

According to the result of the first round of external quality assessment by the Office for National Education Standards and Quality Assessment (ONESQA) (Public Organization), most nursing educational institutions have differing levels of instructional quality. Administrative summary analysis of the first round external assessment report from ONESQA found that the first examination result, in order to acquire Nursing Professional License, of most nursing educational institutes were below 80 percent. Upon consideration of evaluation results in combination with process standards, it was found that most instructional standard ranged from fair to good level of the quality. The external evaluator suggested the nursing educational institutes to develop the instructional administration system; improving learner's to meet the measurement of the examination required by Nursing Council, as well as to provide monitoring process to evaluate graduate's result of practice and satisfaction of graduate's commander, in explicit form.

The organization responsible for accreditation of nursing educational institutes is, for instance, ONESQA and the organization responsible for accreditation of curriculum is, for example, Nursing Council, by whom expert team shall be appointed to evaluate quality of the education. The result of institution accreditation from Nursing Council shall be valid for 5 years maximally. Each institute shall obtain different accreditation, demonstrating quality of curriculum and instructional administration.

The quality assurance in nursing science education is categorized into 2 levels; institutional level and curricular level. Nevertheless, there is still no distinctive model for the instructional quality assurance in nursing science. There is only the development of model for quality control in transforming the curriculum into the instruction for Bachelor degree of nursing science program at Royal Thai Navy College of Nursing (Wannarat Jaisuekul, 2004). Most developments of model or quality assurance system have been adopted from other countries. In Thailand context, there was still no approach of empirical data. Nursing institutes provide specific and professional education, unlike other higher educational institutes. Therefore, adapting general model of quality assurance for this education seems not to be adequate.

Quality assurance evaluation is a specific assessment for individual institutes. It doesn't provide overall information of development, giving non-referable results in conclusion of the model for instructional quality assurance. Each area conducts different operations, added that the participants in evaluation of each area possess different attributes (Turpin & Sinacore, 1991, Straw & Herrell, 2002). The evaluation should actually provide the applicable result, enabling acquirement of more information and development of the model for instructional quality assurance in nursing science. Such evaluation technique is "Multi-site evaluation".

Multi-site evaluations, or so called Cross site evaluation (Giard and team, 2005), is integration of the research conducted with several sites evaluation, thence to be analyzed as foundation principle in multisite evaluations. Such evaluation shall increase representative samples, impacting on statistical power. The assessment for the impact of cross-site activities provided decisive results referable in various contexts (Straw & Herrell, 2002). That quickly

provided lessons out of the project, effecting on the policy of theory and practice construction. Furthermore, this evaluation is emphasizing on participation between evaluator and vested interests (Worthen & Schmitz, 1997). Multi-site evaluation is different from other evaluations that it focus on the generalizability. For each site focusing on the same evaluation points such as objective or site attributes, Evaluation process shall relate to the user of evaluation result. Since this is participatory evaluation, it gives policy results used for transforming practices.

As such importance, the development of model for the instructional quality assurance in nursing science should be conducted, in order to assure the instructional quality in nursing science program, as well as the appropriateness to Thailand's context. Multi-site evaluation on instructional quality shall provide the efficient model for instructional quality in nursing science, in accordance with curriculum's objectives and society's demand.

2. Objectives

The main objective of this research was the development of instructional quality assurance model in nursing science with the following minor objectives:

1. To study information for development of the model for instructional quality assurance in nursing science
2. To assess needs of instructional quality assurance from administrators, nursing instructors and nursing students
3. To construct the model of instructional quality assurance for nursing science in Thai context
4. To audit and evaluate the model of instructional quality assurance for nursing science developed

3. Conceptual Framework

This research was the research and development. It combined concept of nursing science instruction, model of quality assurance and information from empirical data from multi-site evaluation and needs assessment. The concept of nursing science instruction consisted of 6 elements; curriculum, instruction's facilitating factor, theoretical and practical instruction, measurement and evaluation and nursing student/nursing graduate (Wongwanich, 1999, Pitiyanuwut, 2005, ONESQA 2005, Thailand Nursing Council 2008, and Office of the Higher Education Commission: OHEC 2007). The concept of educational quality assurance consisted of quality control, quality monitoring and quality evaluation.

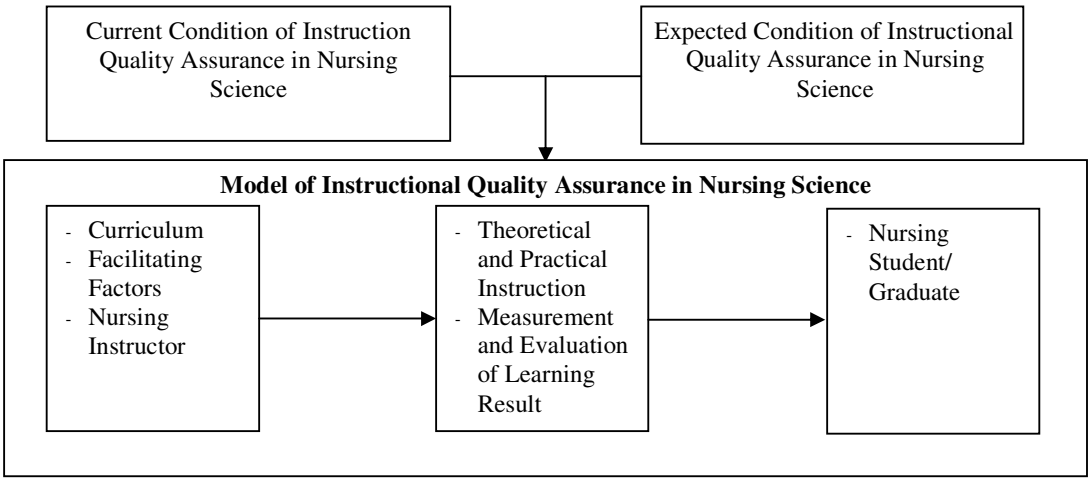

Fig. 1 Conceptual Framework for development model

4. Research Methodology

Process of the research was divided into 3 phases. The 1st phase was to study the information for instructional quality assurance model development by documentary research to . The 2nd phase was to develop an instructional quality assurance model in nursing science and the 3rd phase was to audit and the assessment of the developed model as in details follow.

Phase 1

The approach of information and condition of instructional quality insurance in nursing science was proceeded in 3 parts; (1) Study of documentations and relevant researches (2) Evaluation of instructional insurance in nursing science, using multi-site evaluation and (3) Assessment of needs from administrators, nursing instructors and nursing students for the instructional quality assurance in nursing science, including the definition and priority of needs.

Data Sources for first phase of the research came from 2 sources; (1) Documentary data source (2) Personnel data source from 3 groups; administrators, nursing instructors and nursing students, as follow.

1. Documentary data source

The research populations in this phase were 60 reports of 2nd external quality evaluation results from nursing institutes by ONESQA.

The samples were 37 reports of 2nd external quality evaluation results from nursing institutes by ONESQA.

Variables and Data for the research

The variables used in the research were attribute-independent variables and dependent variables. 2 types of attribute variables used were 17 categorical variables and 15 continuous variables.

2. Personnel Data came from 2 groups**;** focus group for qualitative data collection and sample group for quantitative data collection.

2.1 Focus group for qualitative data collection

Focus groups for qualitative data were from 6 institutions; 6 administrators of academic/educational quality assurance (1 person/institution), 12 nursing instructors teaching

in both practical and theoretical classes (2 persons/institution) and 42 nursing students from sophomore, junior and senior classes (6-10 persons/institution).

2.2 Sample group for quantitative data collection

The research populations in this phase were academic/educational quality assurance administrators, nursing instructors and nursing students from nursing institutions in Thailand.

Phase 2

Drafting and development an instructional quality assurance model in the nursing science sample were 37 assessment reports, conducted by ONESQA, of 2nd external quality evaluation results from nursing institutions, from 6 original affiliations

Phase 3

Evaluation of the model for instructional quality assurance in nursing science by using meta-evaluation (Wongwanich, 2006).

Instruments

The 8 research instruments comprised (1) the data recording form about model of instructional quality assurance, (2) the data recording form and a coding handbook, (3) the instructional quality assessment form about results of external assessment, (4) the questionnaire about types of instructional quality assurance in nursing science, (5) the needs assessment questionnaire, (6) the semi-structured interview (7) the questions for group discussion and (8) model evaluation form.

5. Data Analysis

The data analysis was divided into 3 parts. The first part was the documentary analysis using content analysis; the second part was the multi-site evaluation by meta-analysis or analysis of analysis. Data were analyzed using by Hierarchical linear models (HLM 6.02) program and cross site analysis (qualitative data) was conducted by content analysis. The proposed model was developed employing the evidences from related documents and findings from multi-site evaluation. The third part was the synthesis and evaluates the proposed model using expert opinion and analyzed using descriptive statistics.

6. Results

The presentation of the research was performed in accordance with the research objectives by dividing into 3 parts as follow.

6.1 Result from information approach in development of model for instructional quality assurance in nursing science.

Result from multi-site evaluation, using synthesis of the report from 2nd external quality evaluation on nursing educational institutes conducted by ONESQA.

6.1.1 Results from instructional quality evaluation in nursing science

The result of evaluation showed that instructional quality in nursing science program is in high level (Level 4 from 5 level of rating scale) with external evaluation result at standard 1, 5 and 6. Generally, all standards are in good level; Standard 5 (Institutional and personnel Development) gained maximum means, followed by standard 1 (Student/Graduate) and standard 6 (Curriculum and Instruction) respectively. At standard 1, Ministry of Defense affiliation obtained the second place of highest score, while the Ministry of Public Health acquired the highest score at standard 5. For standard 6, other affiliations gained highest score, while the second place had been taken by the Ministry of Defense. The result from comparative analysis of instructional quality among affiliations showed different means of instructional quality. The Ministry of Public health acquired highest score, while other affiliations gained equivalent scores.

6.1.2 Meta analysis using Hierarchical Linear Model

Hypothetical model is an analysis to monitor the influence of independent variable at report level on the literal (intercept: β_{0j}) or means of standard index of each external evaluation report, using t – test to fine fixed effect and χ^2 – test to find random effect (Kanjanawasee, 2007), as shown in analysis model below.

Level-1 Model (within report level)

$$Y = \beta_0 + \beta_1*(QA6) + \beta_2*(QA13) + R$$

Level-2 Model (between report level)

$$\beta_0 = \gamma_{00} + \gamma_{01}*(INOUT) + \gamma_{02}*(JU1) + U_0$$
$$\beta_1 = \gamma_{10} + \gamma_{11}*(NPNOT) + \gamma_{12}*(QUALITY)$$
$$\beta_2 = \gamma_{20} + \gamma_{21}*(NPNOT) + \gamma_{22}*(QUALITY)$$

Table 1 showed that the variables at report level of external evaluation influencing on means of instructional quality in nursing science (β_0) were, for instance, site, for which giving positive effect on means of instructional quality. That meant nursing institutions located in Bangkok Metropolis region shall acquire higher means than institutions out of Bangkok region. Number of report pages excluding appendix (NNOT) and quality of external evaluation report (QUALITY) gave negative result to the intercept β_1 (Result of model the educational institutes developed for instructional quality. And Number of report pages excluding appendix (NNOT) and quality of external evaluation report (QUALITY) gave negative result to the intercept β_2 (Result of model for instructional quality assurance CU-QA84 on instructional quality)

Table 1 The estimation result of the influence of variables at affiliation on means of instructional quality in nursing science of nursing educational institute (INSTQUA – intercept)

Instructional Quality	Coefficient	Standard – Error	T – ratio	p
For INTRCPT1, β_0				
INTRCPT2, γ_{00}	0.041	0.037	1.128	0.268
INOUT, γ_{01}	0.197	0.092	2.151	0.038
JU1, γ_{02}	0.173	0.111	1.559	0.128
For QA6 slope, β_1				
INTRCPT2, γ_{10}	-0.193	0.049	-3.963	0.000
NPNOT, γ_{11}	-0.049	0.013	-3.694	0.001

QUALITY, γ_{12}	-0.044	0.017	-2.599		0.011	
For QA13 slope, β_2						
INTRCPT2, γ_{20}	0.664	0.106	6.288		0.000	
NPNOT, γ_{21}	-0.023	0.005	-4.397		0.000	
QUALITY, γ_{22}	-0.096	0.042	-2.285		0.024	
Instructional Quality Mean	Random Effect					
	Between Unit Variance (U)	Within Unit Variance®	Total Observed Variance	df	χ^2	p
INSTQUA intercept, U_0	0.00014	0.22170	0.22184	34	23.820	>.500
$R^2 = 0.996$						

* $p < 0.05$, ** $p < 0.01$

6.2 Result from Qualitative Analysis

For the factors effecting on instructional quality in nursing science of the institutions with best performance, for example, the import factors was quality of student accepted from high school, the process factor were leadership of administrator, personnel development, intra-organization communication and internal quality assurance process. Each institutions emphasized on different points e.g. quality control,) quality assurance by holistic model, quality assurance model in accordance with indicators.

6.3 Results from assessment of needs for instructional quality assurance from administrators, nursing instructors and nursing students

Needs of instructional quality assurance in nursing science from nursing instructors and students were close ($PNI_{modified}$= .31 and .32), while administrator's needs were rather low. Considering from needs in accordance with the status, administrators needs were all over low, while the nursing instructor's was highest, followed by instructional facilitating factors and nursing student/graduate's ($PNI_{modified}$= .28, .26 and .22 respectively). Nursing instructor mostly needed instructor development, followed by instructional and curricular facilitating factors ($PNI_{modified}$= .47, .39 and .28 respectively). Nursing student/Graduate mostly needed instructional facilitating factors, followed by instructor factor and instructional factor. ($PNI_{modified}$= .45, .34 and .30 respectively)

In overall, among the sample group of nursing institutes, the internal vested interests needs 4 models; model 011 (administrators don't needs, nursing instructor and students needs) was mostly needed, followed by model 111 (administrators, nursing instructor and students needs) 000 (administrators, nursing instructor and students don't needs) and 001 (administrators and nursing instructor don't needs but nursing students needs) respectively.

The instructional quality assurance model in nursing science was systematic consisting of input, process and output. The operation was based on 3 domains: principles, concepts and practice. There were 6 standards and 18 indicators for instructional quality assurance in nursing science. Curriculum standard comprised 3 indicators, instructional support standard 4 indicators, nursing instructor standard 2 indicators, instruction standard 4 indicators, learning evaluation and assessment standard 3 indicators and nursing student/ graduate standard 2 indicators. There were 21 elements for guidelines for instructional quality assurance; as details shown in table 2-3

Table 2 Mean, Standard Deviation of Current condition, Expected condition, $PNI_{modified}$ and Rank of needs

Instructional Quality Assurance	Administrator						Nursing Instructor						Nursing Student					
	Current Condition		Expected Condition		Needs		Current Condition		Expected Condition		Needs		Current Condition		Expected Condition		Needs	
	M	S.D.	M	S.D.	$PNI_{modified}$	Rank	M	S.D.	M	S.D.	$PNI_{modified}$	Rank	M	S.D.	M	S.D.	$PNI_{modified}$	Rank
1. Program	4.28	.51	4.76	.42	.14	5	3.88	.31	4.71	.18	.28	3	3.76	.33	4.61	.15	.30	3
2. Facilitating Factor	3.96	.65	4.78	.33	.26	2	3.66	.39	4.70	.20	.39	2	3.44	.36	4.61	.14	.45	1
3. Instructor	3.96	.56	4.74	.38	.28	1	3.62	.36	4.74	.18	.47	1	3.80	.34	4.66	.13	.34	2
4. Learning	4.28	.42	4.76	.38	.14	5	3.99	.28	4.72	.19	.24	5	3.80	.30	4.65	.11	.30	3
5. Measurement and Evaluation	4.28	.56	4.77	.37	.15	4	4.04	.30	4.75	.18	.23	6	3.86	.30	4.65	.10	.28	4
6. Nursing Student /Graduate	4.13	.42	4.88	.26	.22	3	3.96	.27	4.77	.18	.27	4	3.96	.28	4.73	.11	.26	5
Total	4.15	.45	4.78	.33	.20	**3**	3.86	.29	4.73	.18	.31	**1**	3.77	.31	4.65	.12	.32	**2**

Table 3 Standard and Indicator for instructional quality assurance in nursing science

Standard and Indicator	**Criteria**
1. Curriculum	
1.1 Planning of Curriculum Administration and Development	1. Appropriation of curriculum philosophy
	2. Appropriation of curriculum structure
	3. Availability of lesson plan
	4. Efficiency of curriculum system, development mechanism and administration
1.2 Curriculum Implementation	1. Lesson progressed as plan
	2. Standard of the institute's curriculum for Bachelor of Nursing Science
1.3 Evaluation and Improvement	1. Availability of system and mechanism for curriculum evaluation and improvement
	2. Application of curriculum evaluation result in curriculum improvement
2. Learning Facilitating Factors	1. Adequacy of lecture building and classroom
2.1 Venue Promptness	2. Venue for extracurricular activity to enhance student's development
	3. Safety and Hygiene of student's accommodation
	4. Sufficiency and promptness of nursing operation room's equipments
	5. Sufficiency and promptness of laboratory's equipments
	6. Sufficiency and promptness of computer room's equipments
2.2 Facilitating Factor Administration	1. Planning for administration of instructional facilitating factor
	2. Compliance with administration plan for instructional facilitating factor
	3. Evaluation of administration plan for instructional facilitating factor
	4. Application of the result from evaluation of administration plan
2.3 Promptness of Learning media	1. Sufficiency and modernization of principal textbook for nursing.
	2. Sufficiency and modernization of journal for nursing profession.
	3. Availability of technological system for domestic and international data/information
	4. Sufficiency and availability of Audio visual media and equipment
	5. Sufficiency of Audio visual aids specialist
2.4 Availability of facilities and training	

Standard and Indicator	Criteria
venue	1. Adequacy of library service time for self-learning
	2 Completion of training venue for all branches of instruction
	3 Availability of the system for nursing quality assurance /control
	4 Availability of safety system to prevent and protect student and client during training
3. Instructor and instructor development	1. Implementation of Instructor development system
3.1 Instructor Development	2. Availability of new instructor's orientation system
	3. Adequacy of teaching task for instructor
3.2 Quantity and Qualification of instructor	1. Standard of certified and knowledgeable instructor
	2. Adequate quantity of instructor for practical training
	3. Compliance of the instructor to profession code of conduct as a instructor
4. Teaching Schedule	1. Determination of objectives for each subject in the curriculum
4.1 Lesson Plan	2. Availability of mechanism to enable instructor's comprehension on the curriculum
	3. Accordance between subject matter and subject's objective
	4. Availability of theoretical lesson plan
	5. Availability of practical lesson plan and clinical demonstration
	6. Planning of knowledge enhancing activity
	7. Availability of teaching evaluation plan
4.2 Lesson Process	1. Availability of course syllabus for all practical and theoretical subjects
	2. Availability of sheet and lecture note for all subjects
	3. Availability of appropriate teaching material for learning management
4.3 Teaching Technique and Learning Activity	1. Availability of practical training for student's real experience
	2. Flexibility of various learning methods, corresponding to learner's desire
	3. Participation of student in class
	4. Accordance between practical and theoretical learning
4.4 Assessment and Improvement	1. Availability of audit and evaluation system for teaching quality
	2. Availability of teaching quality evaluation by student
	3. Availability of teaching quality evaluation by instructor
	4. Development to modernize subject matter, corresponding to society changes
	5. Development of learning innovation
5. Evaluation of Learning	1. Determination of behavioral objective for each subject matter
5.1 Evaluation Plan	2. Availability of decision system for quality learning achievement
5.2 Evaluation Process	1. Periodical Evaluation for learner development
	2. Availability of various learning evaluations
	3. Availability of system for quality examination and examination paper
	4. Analysis of all subject's examination papers
5.3 Evaluation and Improvement of Instructional Evaluation System	1. Correspondence between examination papers and behavioral objectives
	2. Conduction of Critique for all subjects' examination papers
	3. Conduction of Comprehensive examination prior graduation
	4. Implementation of evaluation result to subject's development
6. Nursing Student/ Graduate	1. Student shall obtain satisfying learning achievement
6.1 Nursing Student	1. Student shall graduate within determined term of curriculum
	2. Student shall obtain nursing practical skills

Standard and Indicator	Criteria
	3. Student shall possess social morality and ethic
	4. Student shall possess professional morality and ethic
6.2 Nursing graduate	1. Nursing graduate shall securely get the job
	2. The result of professional registration examination shall meet the standard
	3. System for pundit's quality monitoring and evaluation
	4. Commander/Superior shall be satisfied with pundit's work operation

6.4 Result from audit and evaluation of the model for instructional quality assurance in nursing science

Overall result is in good quality ($\overline{X}$ = 4.32). Considering each part, it's found that the appropriateness is in good level ($\overline{X}$ = 4.17), the possibility is in good level ($\overline{X}$ = 4.20), the overall correctness is in good level ($\overline{X}$ = 4.09), the usefulness and innovative aspect are in very good level ($\overline{X}$ = 4.75 and 4.62 respectively)

7. Discussion

7.1 Information for development model for instructional quality assurance in nursing science.

The reports from external evaluation of nursing institutions employing own-developed model of instructional quality assurance, in which containing small number of page excluding appendix, providing low quality evaluation from the institution, acquired higher instructional quality than other institutions. Whereas, The reports from external evaluation of nursing institutions employing CU-QA84 model of instructional quality assurance, in which containing small number of page excluding appendix, providing low quality evaluation from the institution, acquired higher instructional quality than other institutions. The reason was that the institutions located within Bangkok Metropolis region are close to many modern technological and learning sources. Own-developed model of instructional quality assurance shall be appropriated to institution's context, respond to institution aims. The CU-QA84 model provides positive effect on instructional quality, since it bases on ISO system, with indicators, measurement and distinctive process of instructional quality assurance system.

Nursing educational institutions should develop their own models of instructional quality assurance, in accordance with own application, or develop models of instructional quality assurance from ISO basis as CU-QA84 model. That shall effect on instructional quality and external evaluator's level. For reporting external evaluation, the evaluator should present complete information as defined by ONESQA. It's not needed to be large number of page, but the information should be adequate to convince the trustworthy of evaluate result, as such information shall effect overall quality of evaluation report.

7.5 The result from development of the model for instructional quality assurance in nursing science

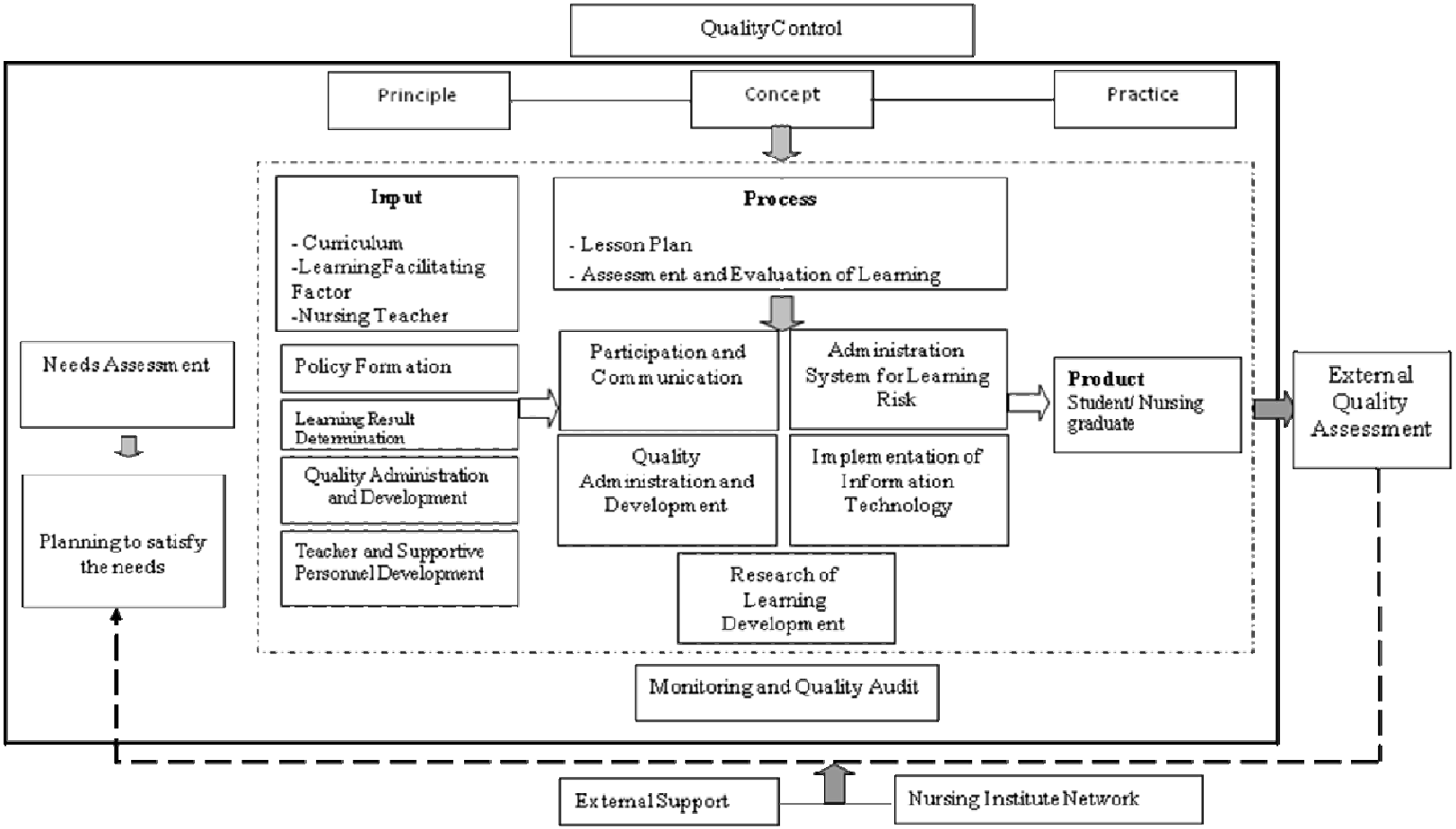

Fig. 2 model for instructional quality assurance in nursing science

7.2 Needs for instructional quality assurance in nursing science

The model of needs from 3 stakeholders; administrator, nursing instructor, nursing student, shall possibly come in 8 models. In this research, it was found that nursing educational institution was the sample with 3 of 8 models of needs for instructional quality assurance; model 111, 000 and 011. Therefore, nursing educational institutions should respond to the needs in accordance with the model, for appropriateness with institution's context in application for instructional quality insurance planning, as well as for approaching causes and strategies of instructional quality assurance. This approach was the study of needs by definition and priority, but the cause and strategy in instructional quality assurance. In next approach, the complete needs assessment should be conducted.

The administrator and nursing instructor possess equivalent needs at 1st and 2nd level; facilitating factors and instructor factors, while the student needed instructor factors the most, followed with facilitating factors. This suggested that nursing educational institutions should provide quality assurance of instructional facilitating factors for sufficiency, modernity and appropriateness. As crucial mechanism for instruction, nursing instructor mostly needed instructor's quality assurance for quantity and certification of instructor. This corresponded to external evaluation found that most of nursing institutions possessed inadequate portions of instructor against student, as well as inadequacy of doctor-degree instructor. It also showed that the instructors realized their essential roles in instructional quality assurance, demanding for needs of development, in order to provide qualitative instruction. At present most instructors are developing themselves by joining the training course of internal quality assurance and instructional development 1-2 times a year. From the qualitative information, the instructor found that nursing educational institution assigned overloaded tasks and responsibilities. Therefore, the systems of task administration and instructor development should be conducted to suite the instructor needs accordingly. The instructional quality assurance should focus on instructor development, as it's a crucial mechanism for model of instructional quality assurance. Not to leave the instructor alone with crucial roles, the model and system of quality assurance should be created to enhance the instructional operation.

As the difference of needs model in nursing educational institution, the instructional quality development should regard the needs of vested interests as well as evaluation result. The evaluation of needs for instructional quality assurance should be conducted, as it's an activity in quality control process.

7.3 Model of instructional quality assurance in nursing science

Model developed for instructional quality assurance in nursing science consisted of 6 elements; curriculum, facilitating factor, lesson planning, nursing instructor, measurement and evaluation of learning and nursing student/graduate, in accordance with ONESQA's standards and indicators in standard 1, 5 and 6, Nursing Council in instructional elements and Thailand Qualification Framework (TQF) for Certification of Bachelor degree in Nursing Science. Those are the organizations dealing with evaluation and accreditation of institutions and curriculum, providing the guideline for instructional quality assurance in nursing science. The research result from multi-site evaluation with meta-analysis using hierarchical linear model (HLM) showed that the model of instructional quality assurance effecting on instructional quality in nursing science were CU-QA84 model and own-developed model of the

institution. Therefore, application of needs evaluation concept shall be appropriated to individual context of institution, as flexible as needed by such institution. Nursing educational institutions should evaluate needs of instructional quality assurance, considering from external evaluation results of relevant organizations, along with needs of vested interests.

The instructional quality assurance according to the developed model consisted of 3 domains; principle, concept and practice. Practice consisted of 11 general rules harmonizing with the research of Chureewan Maneesang (2001) and Pongtheb Jiraro (2003).In actual operation, the institution can adapt those rules for appropriateness in own institution. The standard and indicator developed can be used as guideline for internal audit and evaluation, as well as to develop instructional quality in nursing science to meet the standard.

The model of instructional quality assurance in nursing science is systematic model developed for academic division of nursing educational institutions responsible for curriculum administration and lesson plan. The standard of instructional quality consisted of 6 standards with 18 indicators. That seems appropriate, as according to principle of indicator development, there should not be too many indicators. The indicators developed were the total indicators from relevant organizations, regarded by the experts as highly appropriate.

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