Development of Theoretical Based Multidimensional Learners' Evaluation of Higher Education in Thailand: A Case Study of the University in Graduate Level

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Abstract

This study was performed with the purposes of developing indigenous explanation for higher education in Thailand regarding what should be included in teaching and learning evaluation for the purpose of educational quality evaluation and development by completing five of eight steps of Dubin's theory building method. Qualitative data collection methods were adopted, with triangulation of data to ensure trustworthiness. After data analysis and development of theoretical conceptual framework, Patterson's criteria for evaluating theory were adopted to evaluate the theoretical conceptual framework. Results of this study reveal a theoretical conceptual framework which consists of 25 units, three laws of interaction, three system states, and one proposition. The results are not yet the measurement of teaching and learning. To utilize the theoretical conceptual framework in a measuring aspect, further research is needed, and will be performed in the near future.

Keywords: *Multidimensional Learners' Evaluation, Higher Education, Thailand, Dubin's Theory Building*

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การพัฒนาตัวแบบการประเมินคุณภาพการเรียนการสอนโดยผู้เรียนแบบหลายมิติบนฐานทฤษฎีในระดับอุดมศึกษาในประเทศไทย: กรณีศึกษาสถาบันอุดมศึกษาที่จัดการเรียนการสอนระดับบัณฑิตศึกษา

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บทคัดย่อ

การศึกษานี้มีวัตถุประสงค์เพื่อสร้างความเข้าใจและอธิบายเกี่ยวกับปัจจัยการประเมินคุณภาพการเรียนการสอนโดยผู้เรียนในระดับอุดมศึกษาในประเทศไทย ดำเนินการศึกษาตามแนวทาง ระเบียบวิธีการสร้างทฤษฎีของดูบิน โดยดำเนินการทั้งหมดห้าขั้นตอนจากกระบวนการทั้งสิ้นแปดขั้นตอน จากการรวบรวมข้อมูลเชิงคุณภาพ การสรุปผลแบบสอบถาม และการสรุปผลการทบทวนวรรณกรรมอย่างเป็นระบบและดำเนินการประเมินคุณภาพกรอบความคิดบนฐานทฤษฎีที่สร้างขึ้นโดยใช้เกณฑ์การประเมินของแพทเทอร์สัน ผลของการศึกษา ได้แก่ ปัจจัยการประเมินคุณภาพการเรียนการสอนโดยผู้เรียนในระดับอุดมศึกษา 25 ปัจจัย ที่สามารถจัดเป็น 3 ส่วนหลัก ได้แก่ ส่วนที่เป็นปัจจัยนำเข้า ส่วนกระบวนการ และส่วนผลของการเรียนการสอน และสามารถแบ่งเป็นหมวดหมู่ย่อย ได้แก่ หัวข้อที่เกี่ยวกับผู้เรียน หัวข้อที่เกี่ยวกับผู้สอน หัวข้อที่เกี่ยวกับวิชา และหัวข้อที่เกี่ยวกับปัจจัยสนับสนุนต่าง ๆ อย่างไรก็ตาม กรอบความคิดนี้ยังไม่ใช่เครื่องมือวัดประเมินคุณภาพการเรียนการสอน การศึกษาต่อยอดเพื่อสร้างเครื่องมือดังกล่าวจึงเป็นสิ่งจำเป็นและจะได้รับการดำเนินการในอนาคตอันใกล้

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Rationale and Problem Statement

Role of learners' reaction in evaluation of learning process and achievement is still in conversation, participants' satisfaction which is one type of learners' reaction has been the most frequently used method to evaluate learning session in Thailand (Yamnill, 2001: 1).

In the field of higher education, learners' reaction frequently mentioned as student evaluation (Hendry & Dean, 2002: 75-82; Ramsden, 1991: 129-150; Shevlin, Banyard, & Griffiths, 2000: 397-398; Wachtel, 1998: 191), student feedback (Menges & Brinko, 1986) or course experience (Ramsden, 1991: 129-150). The validation and utility of it has been researched and well supported (Hendry & Dean, 2002: 76; Wachtel, 1998: 192). Even though the terms are different; the constructs are the same. Student evaluation is when students rate aspects of course or units of study (Hendry & Dean, 2002: 76). Student evaluation of teaching has been widely used, yet there have been theoretical issues that are not resolved, for example, number of dimensions covered in the evaluation (Shevlin et al., 2000: 398).

The evaluation of higher education quality is performed to serve the higher education quality assurance in Thailand, covering system and mechanism of teaching and learning (Office of Higher Education Commission of Thailand, 2007). Evaluation of learners is counted as a part of indicators in this area. The selected university is performing the evaluation of its educational quality by learners' evaluation approach. Not only learners' evaluation is counted as a part of educational quality assurance system, it is also taken for the purpose of improvement of teaching and learning quality and human resource management. The evaluation of teaching and learning is performed by learners' reaction-based approach; therefore, it should hold validity and should be designed carefully in order to evaluate quality of education properly.

By definition, learner's reaction-based educational quality evaluation is considered in two dimensions: teaching and learning. However, the evaluation form of the selected university covers only learners' attitude toward instructor. This leaves room for development, as Morgan and Casper (2000: 302) suggested that a multi-dimensional approach of reaction evaluation needed to be well designed to

ensure reliability. The development of theoretical-based multi-dimensional learners' evaluation can benefit the educational quality evaluation and quality assurance system by being a well-rounded measurement tool to be used in evaluation system, as well as serving the learning outcome aspect of the Thailand Quality Framework (TQF) (Wongwanich, 2011: 1).

Among the endless conversation regarding roles and capability of learners' evaluation in evaluating teaching and learning quality, there is no solid explanation for higher education in Thailand regarding what should be included in teaching and learning evaluation for the purpose of educational quality. The indigenous explanation can help mature human resource development and higher education field in Thailand, as indigenous theories and subsequent practices are needed in this era of knowledge economy, as mentioned by McLean (2010: 1-15).

Purpose of the Study

Since there are limited agreed-upon explanations of what should be included in teaching and learning evaluation, the purpose of this study was to develop the theoretical-based conceptual framework of multidimensional learners' evaluation for the purpose of educational quality evaluation and development. This study was the initial stage of further study of developing empirical indicators, and to develop the multi-dimensional learners' evaluation to evaluate teaching and learning in Thai higher education in the near future. This initial development is believed to be important research process in itself as it lays the foundation for further study (Lowe & Holton, 2005: 163).

Research Method

A widely used theory building method suggested by Dubin's (Holton & Lowe, 2007; 304), which is a two-part, eight-step theory building method (Lynham, 2002: 242), is adopted to be a backbone for this study. It is adopted in order to initially develop a framework for theoretical-based multi-dimensional learners' evaluation to lay the foundation for further empirical study (Lowe & Holton, 2005: 163). This theory-research approach is believed to be necessary for the development of valid and trustworthy applied theory (Lynham, 2002: 242).

Dubin's theory building method consists of two distinct, but related components: the theory development part and the research operation part. Completion of this part results in a conceptual framework of the theory. Completion of this second component results in the development of valid and trustworthy applied theory (Holton & Lowe, 2007: 302; Lynham, 2002: 243-244). Based on Dubin's Theory Building Method, Holton and Lowe (2007) suggested nine steps of research process which were applied to the following eight steps used in this study. The steps of Developing Empirical Indicators of Key Terms and onward were left for further study.

1. Phenomena Understanding

Holton and Lowe (2007: 305) suggested that a phenomena understanding was about conducting an initial review of the literature to understand the phenomena and refine them to formulate the study. This step of the literature review did not need to be systematic.

Initial review of literature of this study was conducted to understand the phenomena and refine it to formulate the study. Initially, there were several main topics covered in the initial literature review as follow: (1) higher education and evaluation method, and (2) existing constructs of learners' evaluation. Numbers of constructs were mentioned relating to learners' evaluation. However, most of the literature reviewed was not in the boundary of Thailand, except the study done by Sukserm and Takahashi (2010: 247-262).

2. Identification and Retrieval of Studies

Holton and Lowe (2007: 305-306) suggested to conduct an expanded review of the literature by performing a systematic and comprehensive review of the literature.

This step of this study commenced with a computerized search of various databases using the e-journal list by Ebsco. Journal list was searched by subjects, using higher education as a keyword. With higher education and evaluation were put as keywords.

The following keywords were used in the abstracts to focus the search in the emerging journal: course evaluation, evaluating teaching effectiveness, evaluation of lectures, evaluation of teaching effectiveness, faculty evaluation, instructor evaluation, professor evaluation, student evaluation, student rating, and teaching evaluation. All volumes of the journal from 2004 to the lasted issue possible to acquire were searched by reviewing the abstracts and keywords. This approach was performed to make sure that articles are not overlooked by electronic search method (Holton & Lowe, 2007: 306).

3. Qualitative Data Collection

This step was not included in Holton and Lowe's (2007) general research process for implementing Dubin's theory building model. It was added for the purpose of the trustworthiness of constructs.

This step was added for the purpose of trustworthiness of constructs to assure that the work is agreed upon and credible (Glesne, 2011: 49). To perform triangulation, qualitative data collection performed by a group interview was adopted. Data was collected from multiple groups of participants.

Selection of Participants. Participants are members of the selected university. Purposive sampling technique was adopted by choosing participants arbitrarily for their unique characteristics or experiences, attitudes, or perceptions (Cooper and Schindler, 2006: 204). Maximum variation sampling (Patton, 2002 as cited in Glesne, 2011: 45), was adopted. Participants joined this data collection process on the basis of voluntary to yield a characteristic of willingness of key informants (Marshall, 1996: 92) based on the three major types of university's members, namely instructors, officers, and students. Thus,

Participants were selected by reviewing the archived document regarding their work functions as well as working performance. The selected instructors were awarded for outstanding teaching performance. The selected officers were from related department(s) or job function(s). The selected students were awarded as outstanding learning performance or those with equivalent learning performance to reach both students who were still in their study, and those who were close

to graduation, from different schools, both regular and executive program. Six to ten of those who work related to the matter were needed. Snowball sampling was performed to have participants refer to other who have experiences and knowledge about the matter (Cooper and Schindler, 2006: 204).

Data Collection Method. The method of group interview for the purpose of exploring range of attitudes, and opinions about the matter (Cooper and Schindler, 2006: 204) was adopted. Instructors, officers and students were not mixed up to ensure that they could provide information freely without concerning about conflict of interest. Homogeneity of groups was expected as homogeneous groups could allow more free-flowing and relaxed conversations and discussions, as well as facilitate the development of analytic conversations (Glesne, 2011: 132). Two small groups of six to ten participants were interviewed. One group was that of students. The other one was that of officers. Instructors were interviewed individually. In total, there were 18 participants participated in the qualitative data collection.

Data Interpretation. Coding was performed by the use of full transcription of every interview recording. Only codes which were mentioned by two out of three parties of instructors, officers, and learners were included into the process of construct analysis. Codes were categorized in categories, then in themes.

To triangulate the collected data, a list of constructs is provided to each participant. After each interview session, they are asked to rate, in a Likert-scale approach, the appropriateness of each construct in being included in learners' evaluation. Five refers to very appropriate, and one refers to not appropriate at all.

Member checking which is the process of sharing data collected and tentative interpretation back to participants to confirm that data has been processed accurately and their ideas are represented accurately (Creswell, 1998 as cited in Glesne, 2011: 49; Rouna, 2005: 249).

Audit trail was adopted as the procedure to ensure that it was well described about how data is collected, how codes and categories were derived (Rouna, 2005: 249) for the purpose of trustworthiness.

4. Construct Analysis

According to Holton and Lowe (2007: 307), this step analyzes the constructs and relationships from the existing literature. Construct analysis focused on drawing out the basic constructs of the domain (Holton & Lowe, 2007: 307).

Constructs found from the systematic literature review were put together with those emerged from the qualitative data collection, and triangulating with data from Likert-scale survey by the concept of intersection. Constructs were counted in the initial conceptual framework only if they emerged in two out of three sources of data.

5. Develop an Initial Theory

Holton and Lowe (2007: 305-306) suggested Patterson's eight criteria for evaluating theory (Patterson, 1986 quoted in Holton and Lowe, 2007: 310) were adopted to provide guidance in developing the initial theoretical framework: (1) importance, (2) preciseness and clarity, (3) parsimony and simplicity, (4) comprehensiveness, (5) operationality, (6) empirical validity or verifiability, (7) fruitfulness, and (8) practicality. The developing an initial theoretical framework was performed by responding to the following five objectives representing the first five steps in Dubin's methodology (Lowe & Holton, 2005: 163), by defining five elements of the concept of theoretical-based multidimensional learners' evaluation of higher education in Thailand, namely (1) units, (2) laws of interaction, (3) boundaries, (4) system states, and (5) propositions. The following are elaborations on the five elements. Units are the basic building blocks, out of which the theory is built (Dubin, 1983: 27; Lynham, 2002: 247). At this step, constructs which emerged in two out of three sources of data were counted as *units* of the initial theoretical conceptual framework. A law of interaction is a statement by the researcher-theorist of the relationship between units and shows how the units of the theory are linked (Lowe & Holton, 2005: 170). Boundaries are the scopes which can determine and clarify the domains within the theory that it is expected to hold up and apply (Lynham, 2002: 253). A conceptual framework is expected to work in the real world. System states are, therefore, needed to represent conditions under which

a conceptual framework is possibly operating (Dubin, 1978; Torraco, 1994). Proposition is a statement about the framework in operation. It logically derives from a theoretical system of units, laws of interaction, boundaries, and system states (Lynham, 2002: 261)

6. **Conceptual Framework Evaluation**

Holton and Lowe (2007: 313) suggested that without empirical testing, it is difficult to evaluate a theoretical framework for validity. One way to evaluate a newly-developed theoretical framework is by adopting a certain set of criteria to evaluate whether framework meets with those criteria.

In this step of this study Patterson's (1986 as cited in Holton & Lowe, 2007: 310) criteria for evaluating theory was adopted with definitions mentioned in the step of developing an initial theory. The evaluation form was back-translated into Thai. The back translated version is put together with the original version so that evaluators can choose to perform their evaluation in either languages at will.

In sum, there were 15 evaluators consisting of instructors, officers, and learners. Twelve of those who were participants of the qualitative data collection, and another three who held the equivalent characteristics referred by snowball technique were the evaluators. They were provided with document explaining the concept of this evaluation and how to evaluate, as well as the document explaining the conceptual framework, and evaluation form. Evaluators were provided with researcher's contact information in the case of any questions or concerns. All evaluators were asked to evaluate all units, laws of interaction, boundaries, system states, and proposition.

7. **Analyze and Synthesize Feedback and Theory Modification**

Lowe and Holton (2005: 163), and Holton and Lowe (2007: 317) suggested that this step analyzed and synthesized the feedback from the experts by looking for disconfirming ideas or data that constituted signals for modifying or redoing the theory. There was no single method in the present study for theory modification (Holton and Lowe, 2007: 317). In this study, this step was used for the purpose of

modifying the initial concept of the theoretical-based multidimensional learners' evaluation of higher education based on the synthesis of the scholarly evaluation, resulting in a modified concept.

Rating score provided by evaluators was calculated. The average of rating score of 4.00 was expected to confirm the theoretical conceptual framework. The criteria which yielded lower than 4.00 in average needed to be discussed and revised.

In sum, the average of evaluation score is 4.4792, without any criteria yielding lower average score than 4.00. However, evaluators' comments were grouped by question and synthesized. Qualitative approach is used to analyze all experts' responses using words or responses obtained as the basis of analysis. Even Dubin's theory building model is not a qualitative research study, experts' comments are appropriate to describe how the data from the evaluators was analyzed (Holton & Lowe, 2007: 317).

After discussion with evaluators, the conceptual framework was revised in several aspects, such as words selection. The following section presents a detailed discussion of the components of the theoretical-based conceptual framework of multidimensional learners' evaluation. Implications for further research will be discussed as well.

Results: The Theoretical-Based Conceptual Framework of Multidimensional Learners' Evaluation

A theoretical-based conceptual framework of multidimensional learners' evaluation consists of the critical components of multi-dimensional learners' evaluation for higher education in Thailand. The final conceptual framework is shown in Figure 1.

The conceptual framework was developed using the general systems approach. Units were put together within a system of input, process, and output of teaching and learning. There are 25 units of the framework. Units are put together in groups of learners-related, instructors-related, course-related, and supporting element- related, according with the results of the data interpretation, the

development of an initial theoretical conceptual framework, and the conceptual framework evaluation. The results will be reported as units, laws of interaction, boundaries, system states, and proposition respectively.

Units of the Conceptual Framework

The conceptual framework was developed using the general systems approach. Units were put together within a system of input, process, and output of teaching and learning. This approach holds several advantages. Systems approach provides an elegant and logical way to organize and understand a complex system of ideas (Lowe & Holton, 2005: 163-164).

The units of the conceptual framework will be discussed from inputs to processes, then to outputs.

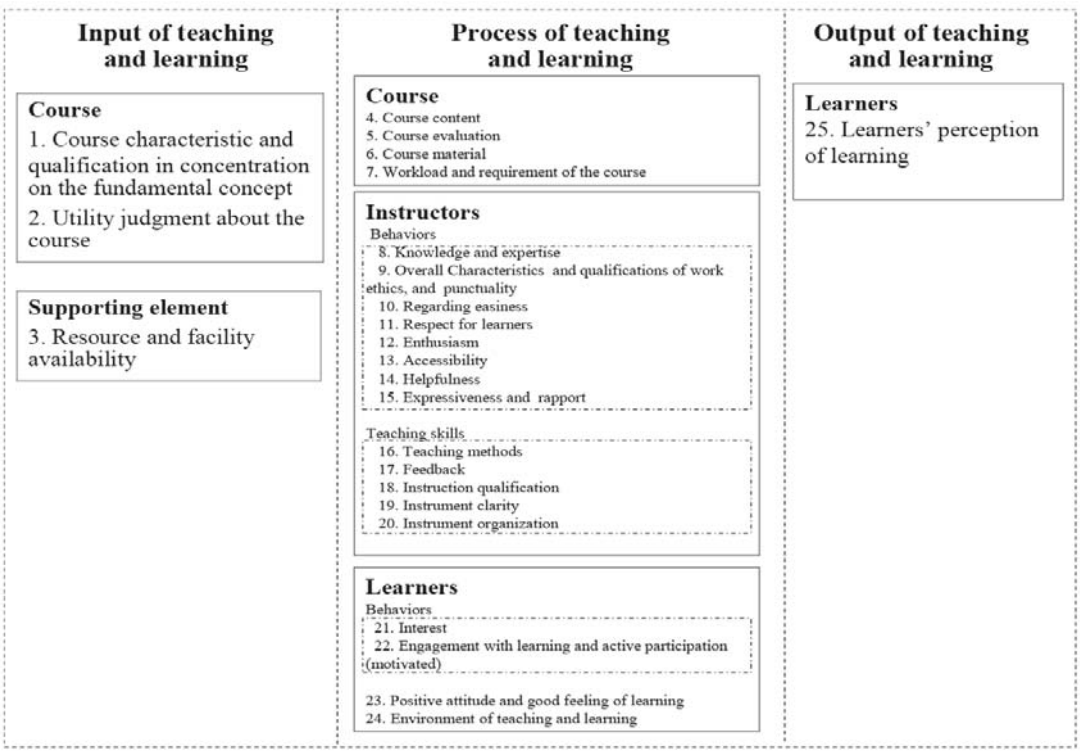

Figure 1: A Conceptual Framework of Multidimensional Learners' Evaluation

There are 25 units of the framework. Units are put together in groups of learners-related, instructors-related, course-related, and supporting element- related. Data from qualitative data collection and interpretation was reported with audit trail in the form of participant code.line number(s) according to the transcription. Codes in the form of number refer to the individual participants. Those in the form of capitalized alphabet with number refer to groups of participants.

Input Units of the Conceptual Framework

Input units are those which were considered as input of teaching and learning process. Units were grouped into this group for their characteristics of being contributive element to teaching and learning, and not being fully controllable by instructors or learners.

There are three units fall into the input section. The first two are course characteristic and qualification in concentration on the fundamental concept, and utility judgment about the course, which are learners-related. The third unit is instructors' supporting elements-related.

Course-related Units

Course characteristic and qualification in concentration on the fundamental concept. Course characteristic and qualification in concentration on the fundamental concept refers to linkage between course content and program which the course belongs to. It was mentioned by subject matter experts that "Linkage of the course with other courses should be included" (17.110-111) and "I would like to give an example of an inappropriate course" (G2.496-499). In sum, course characteristic and qualification in concentration on the fundamental concept refers to the linkage between the course and the program it belongs to.

According to the literature review, course characteristics were evaluated in many different aspects. A concentration on the fundamental concept (Kember & Leung, 2008: 348-349) was one of them.

Utility judgment about the course. Utility judgment about the course is multidimensional.

The first definition is usefulness of the course. It is a judgment whether this course is useful and practical. It was mentioned by subject matter experts about this matter as follow.

"Focus should be on what learners will get and how they can use what they get from classes...How it can be used?" (G1.137-138)

The second definition is contribution in preparing for learners' future work. It was mentioned as "Usefulness to career advancement of what learners learnt from classes" and "The course being beneficial to learners' career" (17.98-103)

According to the literature review, it is a judgment of learners whether they can apply content or what they learn from the training in their jobs or tasks and to what extent that they can do so. It is the reaction of learners about how useful the training program or the module is or how worthwhile it is (Shevlin et al., 2000: 397: Warr & Bunce, 1995). Current studies include utility judgment in learners' evaluation in terms of (1) contribution to learners' preparation for future work (Lemos, Queirós, Teixeira, & Menezes, 2011: 854-856; Nasser & Fresko, 2006: 1), and (2) usefulness (Gonyea & Gangi, 2012: 50-52).

Supporting Element-related Units

*Resource and facility availability***.** This unit refers to resource and facility which support and facilitate teaching and learning. It was mentioned by subject matter experts that resource and facility availability could be great support for teaching and learning quality. However, it should not be included in instructors' evaluation. It should be evaluated, but separately.

"Resource and facility availability could contribute to quality of teaching and learning, but it should not be counted as instructor's evaluation." (1.187-188)

There are three dimensions of this unit. The first one is availability and appropriateness of classrooms and study areas. It is about "readiness of classrooms, and convenience of classroom's elements, such as projectors' and sound system's readiness" (G2.112-114), "temperature" (1.179), and "basic comfort" (2.178). Moreover, "Study areas for learners, other than classrooms, should be enough for everyone and quiet." (G2.680-683/ 760)

The second dimension is that support material and library resources meet with needs for the subject matter, such as internet system, database, computer software, are available and appropriate. It was mentioned by subject matter experts that resource and facility availability is not only about classrooms and classroom related matter, but also about library resources, as well as software and data base.

"The evaluation should not just cover classroom matter, but including library resources. Are there enough books? and so on." (G2.164-170)

"Library is a concern. Some textbooks are so outdated. New editions should be available." (G2.225-226)

"I would like to have more of computer software. I am studying mathematics. I need advanced software, such as math integration software, which is not available currently." (G2.736-737)

The third dimension is about facilities, other than classroom and library resource, such as "elevators" (G1.376), "parking areas" (G1.382), as well as cafeteria, and restroom, are available and appropriate as it was mentioned by subject matter experts as follow.

"About building and facility, as I mentioned, should cover holistic picture of every building, including restrooms, as well as cleaning crews." (G2.202-203)

According to the literature review, many different dimensions of supporting elements of learning being studied and evaluated in learners' evaluation of higher education. The following are dimensions of learners being studied. (1) Positive environment refers to positive and pleasant atmosphere that is conductive to learning (Nasser & Fresko, 2006: 1; Parpala, Lindblom-Ylänne, & Rytkönen, 2011: 511-558; Zhao & Gallant, 2012: 231). (2) Resource availability refers to the availability and appropriateness of support material and library resources that met with needs for the subject matter (Lemos et al., 2011: 854-856; Palmer, 2012: 976-977). (3) Technology availability refers to the availability of technologies that assist in delivery of content and to enhance learning experiences of learners, such as online teaching and visual aids (Palmer, 2012: 976-977; Rantanen, 2012: 6).

Process Units of the Conceptual Framework

Process units are those which could be planned and controlled by instructors or learners.

There are 21 units fall into the process section, falling in groups of learners-related, instructors-related, course-related, and supporting element- related. The first four units are course related. The next 12 units are instructor related. The next four units are learners related. The last unit is supporting elements related.

Course-related Units

Course content. There are two main dimensions emerged as follow.

The first one is that the course content that meets with what was promised and declared, and covers the whole picture of the course.

"Course content should hit the point and should relate to the course description." (18.20-24), and "relates to what was described." (2.099), as well as "covers the whole picture of the course." (1.14)

According to the literature review, it has been evaluated in the aspect of meeting with what was promised to learners (Rantanen, 2012: 6). The other dimension is about organization of course content. The course content should be well organized, meets the standards, and does not overlap with the content of other courses. "Order of content should be properly organized and put together in the proper sequent." (2.171)

Course evaluation. Course evaluation as a part of process of teaching and learning was mentioned to be a mixture of evaluation methods, which were selected reasonably. Subject matter experts mentioned that course evaluation should be designed and implemented in a mixed-method approach.

"Methods of evaluation need to be mixed; take-home assignments together with in-house examination for different purposes. In-house examination can make learners write about what they know right away." (G2.635-636)

"For certain courses, in-house examination are still needed. However, instructor should be rational in designing course evaluation method." (G2.647-648)

Appropriateness of evaluation, in terms of methods were mentioned in the previous literature by Lemos et al. (2011: 854-856).

Course material. This unit is about contribution and helpfulness of material to understanding of subject matter. Course material should support and help in understanding the subject matter as mentioned that "There is the use of course material to help learners easily understand the matters." (1.243)

According to the literature, course material can be evaluates for its (1) contribution and helpfulness to understanding the subject matter (Beran & Violato, 2005: 597; Beran, Violato, Kline, & Frideres, 2009: 522; Cohen, 2005: 126; Spooren, Montelmans, & Denekens, 2007: 671), (2) interestingness (Nasser & Fresko, 2006: 17), (3) sufficiency, and (4) applicability of course material (Krantz-girod et al., 2004: 126).

Workload and requirement of the course. To evaluation quality of teaching and learning it was found from the data that appropriateness and manageability of workload and requirement of the course was needed. It was mentioned about appropriateness and manageability of workload that "I would prefer instructors to discuss about assignments of each course. What should be considered are how many courses we take, how many assignments assigned by each instructor, and how long learners need to finish each assignment? Workload should be assigned properly." (G2.136-138)

Referring to the literature, this aspect could be evaluated for its' (1) clarity (Palmer, 2012: 976) by providing courses' detail and requirement before the courses really start, (2) contribution to learning (Barkhi & Williams, 2010: 262; Nasser & Fresko, 2006: 1), and (3) manageability both in terms of difficulty and amount (Balam & Shannon, 2010: 211; Davies ,Hirschberg , Lye & Johnston, 2010: 89-91; Gonyea & Gangi, 2012: 50-52; Lemos et al., 2011: 854-856; Palmer, 2012: 976), which aligns with what was found from data collection.

Instructors-related Units

There are two main groups of instructors-related units: instructors' behaviors, and instructors' teaching skills. Per instructors' behaviors, there are seven units as follow.

Instructors' knowledge and expertise. Instructors are experts of the course or subject that they instruct. According to subject matter experts, it is important for instructors to be knowledgeable in what they transfer to learners. The following are what mentioned by subject matter experts.

"As instructors, we should consider about how much we know about what we are teaching." (17.43)

"It is important to consider if the instructor is teaching in the area of expertise." (G2.195)

According to the literature, this aspect refers to the perceived understanding by learners of the instructors' knowledge of the content/subject matter that he or she was teaching (Davies et al., 2010: 89-91; Davison & Price, 2009: 54, 65; Shao, Anderson & Newsome, 2007: 368-371; Stowell, Addison & Smith, 2012: 468), as well as instructor's intelligence (Davison & Price, 2009: 54, 65; Gonyea & Gangi, 2012: 50-52), and expertise in the subject (Parpala et al., 2011: 511-558; Rantanen, 2012: 6).

Overall Characteristics and qualification of instructors. There are two dimensions of overall characteristics and qualifications of instructors' emerge: (1) work ethics, and (2) punctuality.

Work ethics refer to being single standard and treating everyone fairly. "Treating everyone fairly." (2.30), and "There are some instructors who are being bias. They tend to like high performers more than those who are not. They pay more attention more on A's students. I don't agree with that." (G2.370-373)

Punctuality refers to being on time as mentioned that "Punctuality of instructors is important." (1.241) (10.15-16) (17.52) (G2.68). Moreover, "Instructor should come to class and should come on time. If instructor cannot make it to any class, learners must be informed properly." (2.86-87/89-90)

Literature reveals about overall qualifications of instructors aligning with the data. Instructors have been evaluated for overall qualification, such as (1) work ethics (Davison & Price, 2009: 65; Gonyea & Gangi, 2012: 50-52), (2) professionalism, including being punctual, dedicating and motivated (Catano & Harvey, 2011: 705; Gonyea & Gangi, 2012: 50-52; Lemos et al., 2011: 854-856), and so on.

Easiness. This unit can be evaluated for the facet instructor's friendliness and cordiality to learners (Lemos et al., 2011: 854-856). It can also relate to relaxation and fun in teaching as mentioned by subject matter experts.

"If instructors are relax and friendly, learners are not afraid of them and feel free to ask questions." (1.111-113)

"If instructors are friendly and fun in teaching, learners feel comfortable to ask for clarification. There would not be a gap between learners and instructors. Learners can feel free to discuss any matters." (1.243-244)

Respect for learners. It can be noticed when instructor is open-minded and respects different opinions from learners, and do not make judgment basing on personal egoism. The following are what mentioned by subject matter experts.

"Instructor should not egocentrically make judgment of learners' opinions." (G1.212)

"Instructors should open their minds." (G2.378)

According to the literature, instructors were evaluated for their respect for learners, in terms of (1) respect for learner as a person (Beran & Violato, 2005: 597; Beran et al., 2009: 522; Cohen, 2005: 126; Davies et al., 2010: 89-91; Gonyea & Gangi, 2012: 50-52; Lemos et al., 2011: 854-856; Nowell, Gale, & Handley, 2010: 466; Perrett, 2013: 87), and (2) respect for different opinions from learners (Davies et al., 2010: 89-91; Socha, 2013: 112-113).

Enthusiasm. Literature review reveals that it refers to the level of instructors being enthusiasm in teaching (Balam & Shannon, 2010: 211; Beran & Violato, 2005: 597; Beran et al., 2009: 522; Davies et al., 2010: 89-91; Davison & Price, 2009: 54, 65; Kember & Leung, 2008: 348-349; Morrison, 2011: 633; Shao et al., 2007: 368-371; Socha, 2013: 112-113; Stark-Wroblewski, Ahlering & Brill, 2007: 408), as well as instructor's genuinely interest in teaching (Zhao & Gallant, 2012: 231).

Data reveals it as the extent of instructors being enthusiasm in teaching. The following are what were mentioned about instructors' enthusiasm as criteria for teaching and learning quality evaluation.

"It should be considered if instructors are enthusiastic in teaching." (17.52)

"It is quite subjective to measure instructors' preparation. It is more about feeling. What should be considered is the overall picture of preparation, to see if instructors have planned for each session, and see how each session is linked to one another." (17.247-253)

Accessibility.

The instructor is regularly available and shows willingness for consultation both face-to-face and other approaches.

According to subject matter experts, it is desirable for instructors to be available and willing to provide consultation and help to learners, both inside and outside normal instructing times.

"I do not like it when I cannot get to the instructors. I would like to meet him to consult about my research topic or content that I do not clearly understand. He has never been available. He does not even reply e-mails." (G2.366-368)

This is consistent with the literature that this aspect refers to instructors' availability and willingness for learners' consultation and requesting for assistance, both inside and outside normal instructing times (Barkhi & Williams, 2010: 262; Beran & Violato, 2005: 597; Beran et al., 2009: 522; Catano & Harvey, 2011: 705; Davies et al., 2010: 89-91; Krantz-girod et al., 2004: 126; Nowell et al., 2010: 466; Parpala et al., 2011: 511-558; Socha, 2013: 112-113; Stark-Wroblewski et al., 2007: 408; Stowell et al., 2012: 468).

Helpfulness. This aspect refers to instructors' help providing to learners in order to help learners learn as effectively as possible (Davies et al., 2010: 89-91; Felton et al., 2008: 48; Gonyea & Gangi, 2012: 50-52; Huxham et al., 2008: 681; Kember & Leung, 2008: 348-349; Legg & Wilson, 2012: 91; Lemos et al., 2011: 854-856; Lewandowski, Higgins & Nardone, 2012: 992; Otto, Sanford & Ross, 2008: 361; Socha, 2013: 112-113; Spooren et al., 2007; White, 2011: 648-656; Zhao & Gallant, 2012: 231). According to the literature easiness can be evaluated for the facet of instructor being kind to student (Sonntag, Bassett & Snyder, 2009: 499-500).

According to subject matter experts, helpfulness was mentioned as the instructors' kind and helpful disposition, and useful assistance.

"Instructors are caring and providing advice." (2.25-26)

"It is about providing consultation to learners." (18.144)

Expressiveness and rapport. The instructor has interaction with learners during teaching and learning. According to the literature instructors' expressiveness and interaction with learners, both individually and collectively (Balam & Shannon, 2010: 211; Barkhi & Williams, 2010: 262; Morrison, 2011: 633; Parpala et al., 2011: 511-558; Rantanen, 2012: 6; Wright & Jenkins-Guarnieri, 2012: 688-690), as well as response to questions (Barkhi & Williams, 2010: 262; Beran et al., 2009: 522; Cohen, 2005: 126) are important for teaching and learning quality.

Moreover, subject matter expert also mentioned about this issue.

"Interaction between instructor and learners related to quality of teaching, for example it is important to see if instructor provides opportunity for learners to ask questions." (18.17-18)

Teaching methods. There several dimension regarding teaching methods as unit for evaluating quality of teaching and learning.

The first dimension is the ability of instructor to promote learners' participation. It was mentioned by subject matter experts as follow.

"Instructor should be able to drive learners to expose their ideas and opinions." (17.15)

"Previously, I mentioned about whether you can drive learners to share opinions. Now, it is about your ability to promote learners to brainstorm and share their ideas." (17.40-42)

"Interaction between learners and instructors cam be linked to teaching quality." (18.17-18)

The above result aligns with existing literature about the usage of student participation (Kember & Leung, 2008: 348-349; Gamliel & Davidovitz, 2005: 592; Nasser & Fresko, 2006: 1)

The second dimension is mixture of teaching methods. Referring to subject matter experts, mixture of teaching methods is important as mentioned below.

"People can learn by different approaches. Therefore, learning channel and methods should be diverse." (2.62-63)

"Teaching methods are diversified, or not. It should not be pure lecturing until all learners fall asleep. There must be methods to create learning atmosphere for learners to be enthusiastic and participative." (18.27-30)

The above result aligns with existing literature about mixed methods of teaching (Fisher & Miller, 2008: 198-199).

The third dimension is the ability to create positive and happy learning atmosphere. Referring to subject matter experts, mixture of teaching methods is important as mentioned below.

"Instructors who are able to teach and create good learning atmosphere are great. They would have technique to create fun in learning. That makes happy learning atmosphere." (1.85-86)

"Both learners and instructors are content. What can be considered as success of teachers is when learners say that they are happy to come to learn, because learning happily can create wisdom. Suffering learning leads to limitation of thinking. As a result, I would consider myself successful in teaching if my students mention that they are happy in my class, and happy to come to class." (18.178-179/181-183)

Feedback. It emerged from the data that feedback provided to learners from instructors was important in evaluating teaching and learning quality.

"There should be feedback to us so that we know about ourselves, our weaknesses and strengths. It should not be like we have to know for ourselves." (1.302-303)

"Instructor should be willing to provide feedback for students." (2.248-249)

The result is consistent with existing literature that feedback is the extent to which instructors provide helpful and prompt quality feedback for learners' work and progress of learning (Barkhi & Williams, 2010: 262; Beran & Violato, 2005: 597; Catano & Harvey, 2011: 705; Davies et al., 2010: 89-91; Gonyea & Gangi, 2012: 50-52;

Huxham et al., 2008: 681; Palmer, 2012: 976-977; Parpala et al., 2011: 511-558; Socha, 2013: 112-113; White, 2011: 648-656; Wright & Jenkins-Guarnieri, 2012: 688-690).

Instruction qualification. Instructors' qualification of instruction can refer to the ability to communicate course content to learners. Desired qualification of instruction consists of ability to communicate and transfer course content in a clear and understandably manner.

"It is important to consider about transferring content and knowledge to learners. Sometimes content is difficult to explain and to understand. Instructors need to have good technique to explain about the matter." (1.105-107)

"Even instructors are high profiled; it does not always mean that they are good at teaching. They might be experts of the field, but not experts in teaching." (G2.231-233)

"Teaching ability is important. This ability involves transferring technique. Do learners understand what is transferred?" (18.24-25) and "Ability to transfer knowledge to learners." (18.142)

The above result aligns with existing literature about ability to communicate course content, and respond to questions effectively, making the content clear and easy to understand (Barkhi & Williams, 2010: 262; Beran & Violato, 2005: 597; Beran et al., 2009: 522; Catano & Harvey, 2011: 705; Cohen, 2005: 126; Davies et al., 2010: 89-91; Davison & Price, 2009: 54, 65; Gamliel & Davidovitz, 2005: 592; Gonyea & Gangi, 2012: 50-52; Huxham et al., 2008: 681; Krantz-girod et al., 2004: 126; Nowell et al., 2010: 466; Parpala et al., 2011: 511-558; Rantanen, 2012: 6; Shao et al., 2007: 368-371; Spooren et al., 2007: 671; Stark-Wroblewski et al., 2007: 408; Venette, Sellnow & McIntyre, 2010: 103-104)

Instructors should be able to design content communication to align with learners' background of knowledge and experience.

"Instructor should transfer content of the course concerning about differences in learners' background of knowledge and experience so that learners can easily understand the matter." (1.20-25)

The above result aligns with existing literature about organization of instruction, which is well-planning of instruction to cover course content to match with learners' background and course objectives, with combination of theory and practice, and proper examples (Balam & Shannon, 2010: 211; Barkhi & Williams, 2010: 262; Lemos et al., 2011: 854-856; Morrison, 2011: 633; Parpala et al., 2011: 511-558; Spooren et al., 2007: 671)

Language expertise of instructors is involved as well.

"Problems occur when some instructors cannot even speak the language properly. I think they should not be teaching using the language they are not proficient with." (G2.404-405)

Instrument clarity. There are two dimensions of instrument clarity, according to subject matter experts.

The first dimension is the ability to explain and respond to questions clearly, as mentioned below.

"I would like instructors to be able to communicate or clarify issues that learners do not understand." (G2.435-436)

"Instructors should provide comments on our presentation and provide related examples." (G2.441)

The above result aligns with existing literature about the extent which instructors clearly explain and respond to questions (Davies et al., 2010: 89-91; Felton et al., 2008: 48; Kember & Leung, 2008: 348-349; Legg & Wilson, 2012: 91; Socha, 2013: 112-113; Sonntag et al., 2009: 499-500; Zhao & Gallant, 2012: 231).

The second dimension is the ability to clearly communicate learning goal, course requirement, and course content.

"It is instructors' duty to clearly clarify learning goal, course requirement, and course content." (1.77)

The above result aligns with existing literature about the extent which instructors clearly communicate learning goal and course requirement (Beran & Violato, 2005: 597; Cohen, 2005: 126; Davies et al., 2010: 89-91; Krantz-girod et al.,

2004: 126; Nasser & Fresko, 2006: 1; Parpala et al., 2011: 511-558; Socha, 2013: 112-113).

Instrument organization. This unit refers to two dimensions as follow.

The first dimension is about the instructor organizes and designs the course well, including having solid and single standard in course organization to ensure quality of the course.

"There should be a standard to assure that both regular and executive program of every school are run with the same standard...Regular program and executive program should be run with the same standard." (G2.293-294/299-300)

"Instructors must be qualified, and have valid standard in grading system. Every section of the same course, even taught by different instructors, should hold the same grading standard." (G1.32-33)

The above result aligns with existing literature about well organization and design of course (Barkhi & Williams, 2010: 262; Balam & Shannon, 2010: 211; Beran et al., 2009: 522; Burdsal & Harrison, 2008: 570; Cohen, 2005: 126; Gonyea & Gangi, 2012: 50-52; Harris at al., 2010: 482; Huxham et al., 2008: 681; Kember & Leung, 2008: 348-349; Krantz-girod et al., 2004: 126; Morrison, 2011: 633; Nowell et al., 2010: 466; Stowell et al., 2012: 468; Zhao & Gallant, 2012: 231).

The second dimension is about the instructor teaches consistently with course outline. It is about instructors cover every part of content which was promised and which is appropriate to cover.

"It is possible to evaluation instructors by considering if they stick with course outline and covering what was designed for the program." (10.131-134) and "Teach relevantly, covering all the content, and organizing the content." (18.151)

"Learners can tell if instructors covering what has been mentioned in course syllabus, and if instructors assign assignments according with the syllabus." (9.117-118)

The above result aligns with existing literature about course being delivered in consistency with course outline (Beran & Violato, 2005: 597; Beran et al., 2009: 522; Nasser & Fresko, 2006: 1).

Learners-related Units

There are three main groups of learner-related units: learners' behaviors, learners' positive attitude and good feeling of learning, and environment of teaching and learning.

The first two units are about learners' behaviors as follow. The latter two units are learners' related as well but not directly relate to behaviors. The last unit is about environment of teaching and learning.

Interest. There are three dimensions of learners' interest emerged from the data.

The first dimension is discipline of learners. Discipline refers to class attending, and punctuality. According to subject matter experts, the following are what were mentioned.

"Basically, we need to focus on class attending. If learners attend almost every class, we can infer that they are interested at certain extent." (18.48-49)

The second dimension is attention of learners. Learners should be attentive to classes. They should actively involve in learning and not being distracted by something else. This dimension was mentioned by subject matter experts as follow.

"Learners should have opportunity to evaluate their classmates regarding learning environment. Do they chat in class? Do they have feedback and interaction with instructor? Are they ready for class?" (G2.122-124)

"During classes, learners should not sit still like a dull, never ask questions. This matter should be evaluated as well." (9.159-161)

The last dimension is motivation and interest of learners in subject and course content, including before-class preparation, such as studying course objectives and scope, and completing reading requirements. "It should be evaluated if learners perform their roles as learners properly. What could be evaluated are their preparation before class, like what should they prepare themselves, during class: do they participate?, and after class: do they do further study?" (9.159-161)

The above result aligns with exiting literature about course motivation of learners (Lemos et al., 2011: 854-856), and their interest in the subject and course content (Lemos et al., 2011: 854-856; Nasser & Fresko, 2006: 1).

Engagement with learning and active participation (motivated). This unit refers to learners engagement with learning, active participation and interaction with instructor, as well as enthusiasm and dedication in learning, and strive for knowledge. In detail, there are two dimensions of this unit. The first dimension is engagement with learning, active participation and interaction with instructor. It was mentioned as follow.

"Having interaction with instructor." (18.158)

"Learners prepare themselves for class, present that they have prepared themselves by covering reading assignment, and shooting questions about learning subjects." (18.170-171)

The above result aligns with the existing literature about in class engagement can be considered as learners having participation in learning activities, expression of one's own ideas in class (Lemos et al., 2011: 854-856), involvement in constructing knowledge (Nygaard & Belluigi, 2011: 659-670), discussion in class (Kember & Leung, 2008: 348-349), motivation in learning (Parpala et al., 2011: 511-558).

The second dimension involves enthusiasm and dedication in learning, and strive for knowledge.

"Being active and interested in what instructors provide. Being enthusiastic and searching for further knowledge. Studying by themselves to answer instructors' questions." (17.149-151)

"Dedicating to assignments and research. Not just doing it just to get it done. Searching for answers for unanswered questions by themselves. Never stop looking for knowledge." (18.162-164)

The above result aligns with the existing literature about learners' intention to join classes and tutorial session (Fisher & Miller, 2008: 198-199), regularly study the subject, being assiduous (Lemos et al., 2011: 854-856), learners' processing of knowledge by themselves (Parpala et al., 2011: 511-558).

Positive attitude and good feeling of learning. Positive attitude and good feeling of learning refers to happiness with learning and positive emotion toward learning. This unit emerged from subject matter experts as mentioned below.

"Learners need to be fun with learning, so that they can remember about what they learn and can understand about the matter." (1.315)

"It is important for both instructors and learners to be happy and content. Learners state that they are happy to come to class because learning happily can create wisdom." (18.178-180)

The above result aligns with the existing literature about positive attitude and satisfaction toward institution/college, course, and instructor (Gonyea & Gangi, 2012: 50-52; Venette et al., 2010: 103-104). According to Shevlin et al. (2000: 402), it was found in their study of validity of students' evaluation of teaching that learners' evaluation result of instructors' attribute and ability was affected by learners' perception about instructor's charisma.

Environment of teaching and learning. This unit refers to supportive environment among classmates which can be perceived by learners. It was mentioned that "About cooperation and support provided to one another among learners; are there helping hands provided to one another? Do those who are keen on the subject help others in understanding the matter?" (18.41-43), and "Relationship among learners...if they are united and sharing their resources, it is better for learning. Learning is more desirable" (G1.333)

Output Units of the Conceptual Framework

There is one unit fall into the output section. It is learners-related, which is learners' perception of learning as discussed below.

Learners' perception of learning. There are three dimensions of this units emerged from data collection. The first dimension is understanding and capability of the subject matter which learners gain from taking the course. It was mentioned as an important part of output of teaching and learning.

"When it is about learning, learners can evaluated themselves if they know more. they might not know or be keen on every point mentioned in the course, at least they should know more about some points." (18.127-128)

The above result aligns with the existing literature about learners' perception of gaining knowledge, understanding and capability of the subject matter (Barkhi & Williams, 2010: 262; Beran & Violato, 2005: 597; Beran et al., 2009: 522; Darby, 2007: 451-452; Davies et al., 2010: 89-91; Davison & Price, 2009: 54, 65; Kember & Leung, 2008: 348-349; Lemos et al., 2011: 854-856; Perrett, 2013: 87; Smith, 2008: 527; Socha, 2013: 112-113; Stark-Wroblewski et al., 2007: 408; Venette et al., 2010: 103-104; Zhao & Gallant, 2012: 231)

The second dimension is critical thinking and implication skills on the subject matter, which learners gain from taking the course. It was mentioned as an important part of output of teaching and learning, which can be both academically and practically contributive to learners.

"Actually, it is about how we make use of what we learn. It is about analytical skills. Can we analyze what we learn and make use of it? It does not have to be used in our works. It can be useful in everyday life." (G1.259-260/269)

"They can use it in their works, or use it to improve their works. It might not happen with every point instructors make in class. In one course, if learners can apply half of the content, it is acceptable." (18.130-132)

The above result aligns with the existing literature about learners' perception of gaining critical thinking and implication of the subject matter (Lemos et al., 2011: 854-856; Nygaard & Belluigi, 2011: 659-670)

The third dimension is openness to further learning in the subject matter by having curiosity, flexibility in learning, and willingness to change their view and open for new ideas. This dimension was mentioned as follow.

"Learning outcome is quite difficult to evaluate. We need to ask if learners are still interested in studying about this matter, if they still intend to learn more about it, not just satisfied with what they learn from this course, and not just satisfied with the grade they get." (10.292-293)

The above result aligns with the existing literature about learners' perception of openness to further learning in the subject matter by having curiosity, flexibility in learning, and willingness to change their view and open for new ideas (Kember & Leung, 2008: 348-349; Lemos et al., 2011: 854-856), as well as attitude changing regarding the matter of subject as a result of learning (Darby, 2007: 451-452).

Laws of Interaction

The following laws of interaction are derived from the dynamic relationships among the units

Law 1. Input units, namely course characteristic and qualification in concentration on the fundamental concept, utility judgment about the course, and instructors' knowledge and expertise, which is instructors-related, are input into the process of teaching and learning.

Law 2. The above 21 units of the group of process units, as processes of teaching and learning, are required for an output of teaching and learning.

Law 3. All units fall within a system of input, process, and output of teaching and learning to logically organize and understand a complex system of ideas (Lowe & Holton, 2005: 163-164).

Boundaries of the Theory

A theoretical conceptual framework is bounded when the limiting values on the units composing the model are known (Dubin, 1969). Boundaries of the framework are defined to clarify the entity of the real world that the framework attempts to explain. The boundaries of this conceptual framework are first defined by the distinction between all human activity in teaching and learning, and teaching and learning in Thai higher education. This framework has been developed specifically for adult teaching and learning environments of Thai higher education.

For purposes of this theory, higher education is defined as the education in the graduate level in formal higher education institution, though exceptions can occur to this based on developmental stage, as an open system is one in which some kind of exchange takes place between the system and its environment

(Dubin, 1969: 126).

Because the goals and processes of adult learning interact with and are influenced by their other life activities, this boundary is defined as an open boundary (Lowe & Holton, 2005: 165).

The second boundary condition of "Teaching and Learning in the selected university" exists within the domain of teaching and learning in Thai higher education. This conceptual framework applies only to teaching and learning in Thai higher education, with room for exception by the statement of open boundary.

The units of the conceptual framework all fit within the domain of teaching and learning in the selected university. Because the units are influenced by teaching and learning in Thai higher education which it exists, this boundary condition is also an open boundary.

The boundaries of the conceptual framework are illustrated in Figure 2, where the open boundaries of teaching and learning in Thai higher education, and that of teaching and learning in NIDA are represented by the dotted oval lines.

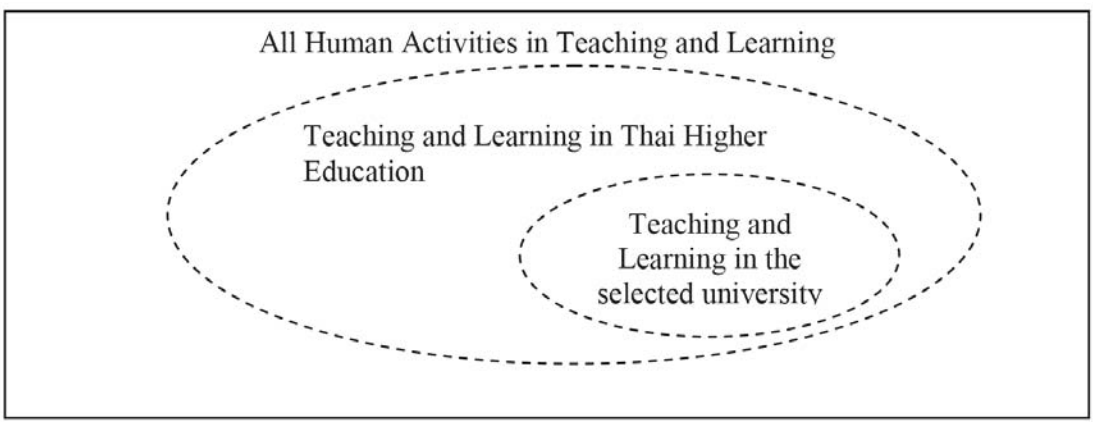

Figure 2: The Boundaries of a Conceptual Framework of Multidimensional Learners' Evaluation

System State

There are three system states that can represent different conditions and alignments of the conceptual framework as follows: effective system state, ineffective system state, and moderately effective system state.

Effective system state. An effective system state is when all units of the conceptual framework are complimentary to one another. Together, all units represent the evaluation criteria of quality of teaching and learning in Thai higher education of NIDA.

Ineffective system state. An ineffective system state is when complimentary of units to one another is weak, or units are not complimentary to one another.

Moderately effective system state. A moderately effective system state is when there is partial but not full alignment among units. For example, when there is one unit not being complimentary to others, while the rest are complimentary.

Propositions

There is only one proposition derived from the conceptual framework, which is all units of the framework are directly related to one another.

Discussion

How to evaluate quality of teaching and learning in higher education in Thailand? This question has been raised by many scholars. This study proposes a theoretical conceptual framework of multidimensional learners' evaluation for higher education in Thailand. This conceptual framework aligned with what was proposed by Morgan and Casper (2000: 302) suggesting that a multi-dimensional approach of reaction evaluation needed to be well designed to ensure reliability of learners' evaluation.

There are many constructs for learners' evaluation in higher education being studied, but not all of them were found in the result of this study, such as challenging of learning and instructors' relative ranking, which refers to the extent of instructors having admirable experiences in teaching, academic status, and academic degree (Beran et al., 2009: 522; Nasser & Fresco, 206: 1). Moreover, sense of humor, which

refers to the level of instructors' sense of humor in instructing (Lewandowski et al., 2012: 992), and appeal and hotness of instructors, which refers to the sexiness and attractiveness of instructors perceived by learners (Felton et al., 2005: 94; Felton et al., 2008: 48), were not be found in the study. Recommendation to others, which refers to the extent of how likely learners who have taken this course would recommend this course to other learners (Barkhi & Williams, 2010: 262; Gonyea & Gangi, 2012: 50-52; Lewandowski et al., 2012: 992; Palmer, 2012: 976-977; Sonntag et al., 2009: 499-500), is another construct which was found in the literature, but not found in the result of this study.

There are also constructs which were rarely studied in the literature, but emerged in the results of this study by frequently mentioned by subject matter experts as crucial construct in evaluating teaching and learning quality in higher education, such as resource and facility availability, which consists of the availability and appropriateness of classrooms and study areas, support material and library resources meet with needs for the subject matter.

This study proposes more aspects to the teaching and learning quality evaluation, other than learners' attitude toward instructors. The result of this study proposes that teaching and learning evaluation could be multidimensional by separating issues of course-related, learner-related, and supporting element-related from instructor-related issues. According to the result, the focus of teaching and learning evaluation is not only on instructors, but also on learners, as well as courses as they were designed, not just what instructors design.

Conclusively, there are several dimensions of teaching and learning evaluation in higher education, other than instructor-related dimension. It has been found in existing literature, as well as in the result of this study that those dimensions could be beneficial to teaching and learning evaluation in Thai higher education.

Limitations and Implications for Future Research

Implications for future research lie in the limitations of the study. This study provides the theoretical conceptual framework that can provide key concepts and understanding. However, as a qualitative study, its results cannot yet be utilized

as the measurement of teaching and learning. To conduct the empirical measurement, further research is needed.

There are three possible implications for future research. Firstly, developing empirical indicators is needed to fulfill Dubin's (1969) sixth steps of theory building. Dubin's (1969) intended to make theory match with the real world. Therefore, the sixth step of his theory building method is identifying empirical indicators to secure measurements of the values on units (Dubin, 1969: 183-184; Lynham, 2002: 264-265). Researchers can consider this step.

Secondly, the development of hypotheses is needed. This step is an establishment of the link between the theoretical framework and the real world, by translating some of the propositions of the theoretical framework to testable hypotheses (Lynham, 2002: 267). This step is at which the theoretical framework confronts with what the observable things, which it tries to make sense of and to create knowledge about (Dubin, 1969: 210). A hypothesis could be defined as the predictions about values of units of a theoretical framework in which empirical indicators are employed for the named units in each proposition (Dubin, 1969: 212). It is important to be note that every time units are mentioned in proposition, there must be empirical indicators to measure the value of them (Dubin, 1969: 212; Lynham, 2002: 267).

Third, the empirical research studies are needed to validate the conceptual framework in the real work context. This step involves the testing of the theory through empirical research. This step involves either proving the adequacy of the theoretical framework or improving the starting theoretical framework. Outcomes, or research results, from this eighth step in Dubin's theory-building method inform the ongoing refinement of the theory (Lynham, 2002: 269), as well as emphasizing the continuous interaction between theory and research (Dubin, 1969: 223).

Lastly, replication of this study can be performed in other higher education institutions in Thailand, which may result in uncovering units other than those emerged from this study, and may lead to further comparative studies.

Conclusion

This study completed five of eight steps of Dubin's theory building method. This study holds the purposes of developing indigenous explanation for higher education in Thailand regarding what should be included in teaching and learning evaluation for the purpose of educational quality evaluation and development. Result of this study puts forward a theoretical conceptual framework which consists of 25 units, three laws of interaction, three system states, and one proposition.

This study only proposes the theoretical-based conceptual framework of multidimensional learners' evaluation, not yet the validity or empirically test. This study can be considered as the initial stage of further study of developing empirical indicators of the conceptual framework, as well as an initial stage of further empirical studies in the field of human resource and organization development and higher education. As mentioned by Lowe and Holton (2005: 163) that this initial development is believed to be important research process in itself as it lays the foundation for further study, this study lays the foundation for researchers to empirically test the theoretical conceptual framework. For practitioners, this study proposes the integrated framework of variables that can be considered in quality of teaching and learning in higher education. Even though further research is still needed to empirically validate this framework, this framework can be considered as a start up for multidimensional learners' evaluation in Thai higher education.

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