The construction and development of indicators of learning organization at higher educational institutions emphasizing graduate production and social development

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ABSTRACT

The Purposes of this research were to construct and develop indicators of learning organization at higher educational institutions emphasize graduate production and social development, and to test the congruence of the structural model of the indicators of learning organization at higher educational institutions emphasizing graduate production and social development with the empirical data. The sample consisted of 502 vice-presidents for academic affairs, deans, and instructors, obtained using the multi-stage random sampling technique. The instrument used was a questionnaire. The collected data were analyzed using a computer program for basic statistics and analyzing confirmatory factors with the empirical data. The research findings revealed the following:

The indicators of learning organization at higher educational institutions emphasizing graduate production and social development were obtained from major factors and sub-factors of the structural model in these 4 aspects: input with 38 indicators, process with 40 indicators, output with 8 indicators, and outcome with 10 indicators, totally 96 indicators. The major factors and sub-factors which were the structure of indicators in all of the 4 aspects were important to learning organization at higher educational institutions. The factors in each aspect had weights in this order from the highest to the lowest weight: input comprising organizational factor = 1.00, technological factor = .88, and man factor = .82; process comprising knowledge management factor = .98, innovational factor =.98, technology utilization = .94, learning factor = .94, and organizational strategy factor = .93, output with only one factor: product innovation factor = 1.00; and outcome with only factor: outcome factor = 1.00. All of the factors in each aspect had to be performed through the variables which were indicators of learning organization at higher education institutions emphasizing graduate production and social development.

For the results of testing the congruence the structural model of the indicators of learning organization with the empirical data using Chi-square test, index of fitted congruence, index of adjusted congruence, and other indices, it was found that the model showed congruence with the empirical data at the .01 level of statistical significance.

Keywords: Indicators, learning organization, higher educational institutions

INTRODUCTION

In this globalization age, changes in the body of knowledge and the process of management of one organization will inevitably impact other organizations, Distance is not any obstacle to communications, learning, and learning together. Needs for developing the organizations to be potential are very important to organizational survival and growth. That is, it will cause each organization to be a learning organization. It is necessary for every one to develop his or her own knowledge and ability to be able to use in better practices (Theera Runcharoen, 2005: 156-157). Therefore, it is greatly necessary for both state and private sectors to develop their organizations to be learning organization for making the organizations complete and for creating competitive advantages to lead to the construction of learning society together with knowledge-based society, particularly in the type of educational institution organizations which have prescriptions of guidelines in the mentioned matter in the national education standards according to standard 3: Guidelines for creating learning society knowledge-based society(Secretariat of Education.2004: 86-87).Three indicators being prescribed are academic affairs management and gulling cooperation between the educational institution and the community to be learning society/knowledge-based society; research studies, enhancement an supporting learning resources and learning mechanism; and knowledge creation and management at every level and in every dimension of the society. The results of assessment of the office of National Education Standard and Quality Assurance (Public Organization) in Round 2 reflect education quality and standards which need improvements and development in various aspects.(Office of National Education Standard and Quality Assessment(Public Organization).(2008: 12-20). In each aspect, it is and important factor educational institutions still lacks indicators to be used as an instrument for evaluating the institution with details which can cover every aspect. Therefore, the construction and development of indicators of learning organization at higher educational institutions will help enhance and support the system of operation at high educational institutions emphasizing graduate production and social development to be in conformity with the commissions of each institution, and to be in congruence with the framework of the 15 year Higher Education Plan. Version 2 (2008 – 2020). In items 96-99, the indicators which receive systematic development are greatly important. To higher educational institutions in practice to be whether effective or not, it is necessary to have appropriate and reliable indicators. Therefore, the researcher was interested of learning organization at higher educational institutions emphasizing graduate production and social development. The research findings will be beneficial to higher educational institution administrators emphasizing graduate production and social development for determining management policy in the part involving universities in order to achieve the policy and purposes of each university, and the national policy for higher education provision to have quality and to be used as a guideline for higher education to lead to social development to be sustainable learning society.

PURPOSES

1. To construct and develop indicators of learning organization at higher educational institutions emphasizing graduate production and social development, and

2. To test congruence of the structural model of the indicators of learning organization at higher educational institutions emphasizing graduate production and social development.

HYPOTHESIS

The structural model of indicators of learning organization at higher educational institutions emphasizing graduate production and social development has construct validity and is in congruence with the empirical data.

PROCEDURE

Population and sample

The population consisted of vice-presidents for academic affairs, deans, and instructors at higher educational institutions emphasizing graduate production and social development (limited admissions) as classified by the office of National Education Standard and Quality Assessment (Public Organization), 15 subjects from each institution, with a total of 13,925 subjects from 42 higher educational institutions. The sample consisted of 502 rice-presidents for academic affairs, and instructors at higher educational institutions emphasizing graduate production and social development, obtained using the multi-stage random sampling technique.

Instrument

The instrument used in the research was a 5-rating-scale questionnaire on the appropriateness of the indicators of learning organization at higher educational institutions emphasizing graduate production and social development in these 4 aspects: input, process, output, and outcomes with tally 96 items.

Operation

This research used the descriptive research methodology with the following 2 stages of conducting research:

Stage 1 determined the factors of research methodology with the following 2 stages of conducting research. 2 higher educational institutions emphasizing graduate production and social development. The researcher conducted the research as follows:

1.1 Examining domestic and foreign concepts, theories principles, and research involving learning organization.

1.2 Examining the conditions of operation in the context of higher educational institutions emphasizing graduate production and social development concerning missions, policies, strategies, and results of assessing higher educational institution emphasizing graduate production and social development by the office of Notional Education Standard and Quality assurance (Public Organization) in Round 2.

1.3 Using the concepts of management, sedge, and others for synthesis as the conceptual framework of learning organization of higher educational institutions emphasizing graduate production and social development for determining the factors of indicators.

1.4 Drafting the structural model of indicators which were major factors by organizing the model according to the principle of the systems theory and the principle of the model of indicators of performance outcomes, comprising the major factors of input, process, output and outcome.

1.5 Submitting the draft of structural model of indicators which were major factors and sup-factors to Group 1 of 5 qualified persons of checking the content validity.

Stage 2 constructed the indicators according to sub-factors, and used the results of synthesis and the results of interpretation or comparative interpretation for conclusion and construction to be indicators by using word which were issues of comparisons appearing in data, and using these 4 criteria for consideration: 1) validity, 2) coverage of factors, 3) appropriateness, and 4) feasibility in the process of authentic examination.

2.1 Submitting sub-factors and indicators to Group 2 of 5 qualified persons for checking the content validity.

2.2 Checking correctness of the major factor, sub-factors, and indicators before using the for constructing the research instrument.

Data analysis

1. Analyzing general data about the questionnaire respondents using frequency distribution and percentage.

2. Analyzing data about indicators by calculating for mean and standard deviation to compare with the determined interpretation criteria using the criteria designed by Boonchom Srisa-ard (2002: 103).

3. Analyzing confirmatory factors for testing the congruence between the structural model of indicators and the empirical data using the LISREL 8.80 Program.

RESULTS

The construction of indicators of learning organization at higher educational institutions emphasizing graduate production and social development could provide indicators from the structural model which were major factors and sub-factors in the following 4 aspects:

1.1 Input consisted of 3 major factors major factor 1: Man comprising 5 sub-factors including 1) administrator, 2) personnel, 3) service receivers, 4) organizational network, 5) community,. Major fact 2: Organization comprising 3 sub-factors including 1) organizational vision, 2) organizational culture, and 3) organizational structure. Major factor 3: Technology with 1 sub-factor, i.e. technology, with a total of 23 indicators in the input aspect.

1.2 Process consisted of 4 major factors. Major factor1: knowledge management comprising 4 sub-factors including 1) knowledge management, 2) innovation, 3) technology utilization, 4) learning, and 5) organizational strategies, with a total of 40 indicators in the process aspect.

1.3 Output had 1 major factor, i.e. outcome; and the sub-factor was output, with a total of 8 indicators.

1.4 Outcome had 1 major factor, i.e. outcome; and the sub-factor was outcome, with a total of 10 indicators.

All of these 4 aspects comprised totally 96 indicators.

2. For the results of testing the congruence of the structural model of indicators of learning organization at higher educational institutions emphasizing graduate production and social development with the empirical data by the second confirmatory factor analysis using LISREL 8.80 Program, and using Chi-square, index of fitted congruence, index of adjusted, fitted congruence, and other indices, it was found that the model showed congruence with the empirical data at the .01 level of statistical significance.

DISCUSSION

The construction and development of indicators of learning organization at higher educational institutions emphasizing graduate production and social development in all of the 4 aspects, the researcher will discuss the results of the research in each aspect as follows:

1. Input had 38 researcher-constructed-and-developed indicators appropriate to be used the most. These indicators were obtained from the structural model which comprised the major factor and sub-factors; 1. The major factor: Man, had 5 sub-factor including 1) sub-factor of administrator, 2) sub-factor of personnel, 3) sub-factor of service receivers, 4) sub-factor of organizational network, and 5) sub-factor of community. 2. The major factor: Organization, had 3 sub-factors including 1) sub-factor of organizational structure, 2) sub-factor of organizational vision, and 3) sub-factor of organizational culture. 3. The major factor: technology, had only 1 sub-factor of technology.

From the results of the research it was found that the indicators in each factor were in congruence with the empirical data and were statistically significant in every value. The indicator with the highest weight in this aspect and the weight of .86: the indicator in the sub-factor of administrator in the major factor of Man was that the administrator had learning sharing for organization development with the personnel in regularity. It was so might probably be because the person who performed the function of administrator, head or superior or leader of the organization was an important person and had influence on changing the organization. Therefore, leadership of the administrator is important to learning organization. This is in accordance with Wirot Sararattana (2002: 117) who stated that the administrator with condition change leadership is of the followers. There are interactions in the type of upgrading the needs of one another. It is also in accordance with the findings of the research conducted by Sillins, Mulford, and Zalins (2002: 619-620) who have found that leadership had influence on learning of the organization. This is because in the current age higher educational institution administrators should use condition change leadership because in condition change leadership the administrator motivates the personnel to perform work until success.

2. Process had 40 researcher-constructed-and-developed indicators appropriate to be used the most. These indicators were obtained from the structural model which were the major factor and sub-factors including 1. The major factor of organizational strategies had only 1 sub-factor of organizational strategies. 2. The major factor of learning had 3 sub-factors including 1) level of learning, 2) learning model, and 3) learning discipline development. The major factor of knowledge management had 4 sub-factors including 1) knowledge seeking, 2) knowledge creation, 3) knowledge use and transference, and 4) knowledge storage. 4. The major factor of technology utilization had 2 sub-factors including 1) technology utilization for knowledge management, and 2) technology utilization for knowledge increment. 5. The major factor of innovation had 2 sub-factors including 1) process innovation, and 2) management innovation.

From the results of the research, it was found that the indicators in each factor were in congruence with the empirical data and had statistical significance in every value. The indicator with the highest weight in this aspect had the weight of .79 including the indicators in the sub-factors of learning discipline development of the major factor of learning. That was, there was development of mind mapping of persons in order to be in congruence with the purposes. It was so might probably by because mind mapping was awareness of organizational personnel in terms of mental condition, worldview, and belief of people to need adjustment or development according to each period of time. This is in congruence with the purposes of jobs and each organization which is also in congruence with Det Thiamrat and Kansuda Makhosiranon (2003: 40) who say that the thinking model of people and

organization in this new age is necessary to change if not, it will build limitations for themselves to be unable to foresee opportunities and unable to think creatively and to adjust themselves even though the world of living and the world of business operation have completely changed.

3. Output had 8 research-constructed-and-developed indicators aspirate to be used the most. These indicators were obtained from the structural model which were the major factor and sub-factors. It was the major factor of output innovation with only 1 sub-factor, i.e. sub-factor of output innovation.

From the results of the research, it was found that the indicators in each factor were in congruence with the empirical data and statistical significance in every value. The indicator with the highest weight in this aspect had the weight of .77 including indicators in the sub-factor of output innovation of the major factor of output innovation, i.e, output innovation of the personnel as resulted from support with facilities from the administrator and community. It was so might probably be because output of the personnel and organization was resulted from organizational strategies and policies which the administrators, personnel, and immunity Which the administrator, personnel, and community cooperatively presented the concept and thing supporting one another in constructing and developing different output innovations to create competitive advantage for the organization. This is in congruence with Phanu Limmanon (2003: 23, cited from John and Snelson. 1990) who states that the gist of organizational success in creating output innovation equates from the organization members who need clear understanding of the strategy and policy for competition of the organization. This can be done by giving the importance and management with an emphasis on the product rather than the agency which the administrator must always remember that the innovation and risk are what to have dually together; and learning from errors or error trials will finally develop to the system which is the particular characteristics of the organization. It is difficult for competitors to imitate.

4. Outcome had 10 research-constructed-and-developed indicators of learning organization at category 2 higher educational institutions emphasizing graduate production and social development which were appropriate to be used the most. These indicators were obtained from the structural model which were the major factor and sub-factor, i.e. the major factor of outcome with 1 sub-factor including the sub-factor of outcome.

From the results of the research, it was found that the indicator in each factor was in congruence with the empirical data and had statistical significance in every value. The indicator with the highest weight in this aspect was the weight of .79 including the indicator in the sub-factor of outcome of the major factor of outcome, i.e. having learning culture generated from the policy and value of all sections. It is so because culture is in the group of common values being accepted in the group with influence on behaviors of members and it helps organizational members understand that any accepted performance ear generate a guideline adhered to one another, particularly creation of learning culture to become organizational couture. This is in accordance with Marquardt and Reynolds (1994: 30-32) who say about 11 characteristics of learning organization to which the administrator must give the importance and must manage to generate. That is having learning culture within the organization. In having prominent organizational culture, there must be work and learning as the identity. Organizational members realize importance of learning. At the same time the administrator must have vision and realize the importance of learning within toe organization together with profits of the organization because organizational culture, particularly learning culture, must come from values and policy of the organization. This will generate organizational common culture or strong innovation organization.

From all of the 96 indicators obtained from the research in the structural model of indicators consisting of major factors and sub-factors in the 4 aspects, they were reasons to

confirm and support this research that if category 2 higher educational institutions emphasizing graduate production and social development have any performance and operation by relying on sub-factors and the indicators in all of the 4 aspects of the model in the systematic method, they will really affect learning organization according to the established theory.

RECOMMENDATIONS

1. Recommendation for implementing the results of the research
The construction and development of indicators of learning organization at higher educational institutions may be appropriate in the social context in different aspects. In the future. Social conditions may change therefore, indicators should be developed to suit such contexts.
2. Recommendations for further research
    2.1 This research had the scope only at higher educational institutions emphasizing graduate production and social development, therefore those interested should extend the research scope to higher educational institutions in other categories.
    2.2 All of the 96 indicators and the factors in the model in all of the 4 aspects: input factor model, process factor model, output factor model, and outcome factor model were important to learning organization at higher educational institutions emphasizing graduate production and social development. Therefore, in further research, there should be try-outs of all of the 96 indicators as motional in real situations at other educational institution of these indicators using the action research model.
    2.3 For further research an evaluation form should be constructed, and all of the 96 indicators of learning organization of the model in all of the 4 aspects should be created in order to have an instrument for measuring learning organization at higher educational institutions in every category.

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