Composite Indicators for Educational Quality Management for a Masters Degree Program in Educational Administration in Private Higher Education Institutions in Thailand

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Declaration

I, Kachakoch Kanpinit, declare that the Doctorate of Education thesis entitled *Composite Indicators for Educational Quality Management for a Masters Degree Program in Educational Administration in Private Higher Education Institutions in Thailand* is no more than 60,000 words in length, exclusive of tables, figures, appendices, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

██████████	Monday, 28 July 2008
Signed	Date

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ABSTRACT

This study investigates the key requirements for the development of a Masters Degree Program in Educational Administration in private higher education institutions in Thailand. The key requirements are concerned with the essential indicators of educational quality management for an effective program. The quality indicators recognise current best practice for educational effectiveness and quality management. The population sample consists of academics holding executive or administrative positions in Masters Degree Programs in Educational Administrations or related fields in state and private universities in Thailand.

The research involves a Proactive Form of Evaluation, in which a set of benchmarks appropriate to the practical needs of program designers in educational administration was developed. A mixed methods approach, using both quantitative and qualitative methodology, was applied. The quantitative research involved a three-round modified Delphi survey of nineteen Thai experts in the field of educational administration, all of whom were purposively selected. The Delphi survey identified four best practice and composite indicators and their variables: visionary leadership; learning-centred education; organisation and personal learning; and valuing faculty, staff, and partners. A second survey, based on the findings of the initial Delphi survey, verified the key variables amongst the composite indicators. The qualitative research components involved a research review of best practice in the use of composite indicators and their variables, and semi-structured interviews.

The four composite indicators of best practice, and their associated fifty-eight variables concerned with input, process and output, were validated by triangulation of the results obtained from the initial Delphi survey, the

second survey, and the outcomes of the series of semi-structured interviews held at the conclusion of the two surveys. Ultimately, the study produced an Educational Quality Management model for a Masters Degree Program in Educational Administration in private higher education institutions in Thailand.

CHAPTER 1

Introduction to the Study

Introduction

This introductory chapter provides the contextual background for this dissertation by exploring the concepts of quality assurance and quality management, both of which are important in order to monitor performance and to ensure continued enrolment in courses of educational administration. The processes associated with the Proactive Form of Evaluation of Owen, with Rogers (1999) and Owen (2006) are presented in order to provide the key approaches for assembling evidence for the establishment of these benchmarks for Masters Degree Programs in Educational Administration at private higher education institutions in Thailand.

Quality Assurance and Quality Management

There is widespread recognition that quality is of critical importance in achieving the current vision of higher education (Monash University 2003, 2). Quality is at the top of most agendas and improving quality is the most important task facing any institution (Sallis, 2002, 1). Quality assurance, focusing particularly on quality learning, has been a prominent focus in the UK over the past ten years (see, for example, Doherty, 1994; Nightingale & O'Neil, 1994; Farrugia, 1996; Liston, 1999).

In Thailand, the transition to quality implementation has been evident since the promulgation of the National Education Act of BE 2542 (1999)

(ONEC, 1999a) which serves as the master blueprint for education in the country and which is expected to lead to significant educational reform. Internal and external quality assurances have been clearly stated under Section 47. Under Section 49, all higher education institutions were to be externally assessed at least once by the year 2005. In addition, in order to ensure quality in education, the country has taken another step by encouraging all educational institutions to develop their quality assurance mechanisms to be externally assessed in a second cycle starting from 2006.

A Master Degree Program of Educational Administration is consistent with Section 53 of the Act which states that teachers, administrators of educational institutions, educational administrators and other educational personnel of both the state and private sectors shall have professional licences as provided by the law (ONEC, 1999a, 22). This policy direction has resulted in a rapid expansion in licensing programs in both public and private higher education institutions in Thailand to service the unprecedented demand for preparation and licensing. Such programs face critical questions concerned with quality, and this is the case for both new and existing programs.

To ensure the contributions expected of them, programs should be developed that are of the highest quality. Two quality aspects are important: delivery of a quality program that will be to the stakeholders' satisfaction – thus ensuring survival and growth; and providing quality academic units, each of which will have their own quality assurance mechanism to fulfil the requirements of related quality standards.

Programs should function effectively within a system, or a number of systems. The programs will need to be thought of in terms of corporate entities, taking into account the following: corporate management, strategic management, corporate strategy, strategic change management, and strategic planning. These all refer to the need to encompass consideration of the organisation in its environment when setting up management processes and

structures. The management process will need to follow the sequence from politics, to policy, to strategy, to tactics, to operations. The best operations – that is, the most efficient and effective organisations – will be found within organisations that manage to link these elements very carefully (Gray, 1997, 5).

Quality assurance and quality management are thus important both to monitor performance and to ensure continued enrolment in courses of educational administration. Before quality assurance and productivity elements can be established, the researcher was advised to undertake a review of the best practices in order to establish composite indicators that will act as quality assurance benchmarks. The assembly of evidence for the establishment of these benchmarks will be undertaken via a Proactive Form of Evaluation (Owen, with Rogers, 1999; Owen, 2006).

The Globalisation of Higher Education

Ballantine (1983, 241), in *The Sociology of Education,* suggests that the term 'higher education' is a catch-all term for programs offering some academic degree after high school. He points out that higher education has the following: unique features of atmosphere; the professional manner of the faculty; the organisation of the system. It varies depending on sponsorship, student composition, types of programs, and degrees offered. According to the types of programs offered, one institution is able to be distinguished from another. Many institutions develop certain specialty areas or professional schools for which they become well known.

McGee (1971, 191, quoted in Ballantine, 1983, 240) points out that higher education must be comprehended as a social system, as a dynamic, shifting balance of forces and counter forces, adjustments, and accommodations. Some of these forces are internal, that is, on-campus; some are external; some are societal.

The 1998 World Conference on Higher Education in Paris, conducted by UNESCO, states that higher education needs to understand the forces of globalisation that are affecting employment internationally, nationally and regionally. Besides, higher education acts as the provider of human resources to industry and occupational markets, in terms of competencies and skills required. As expressed in the Association of the Southeast Asian Institutions of Higher Learning Conference in Bangkok (2001, July 20), higher education is considered as being an essential factor for the nation's development towards modernisation.

A globalised economy demands standardised products and services including education, technical infrastructure, and sophisticated communication systems. Education and the ability to learn have been recognised as essential attributes to success, even survival, in the globalised world. People learn about the education on offer elsewhere, and want it. In particular, there are growing demands for programs that enhance employment opportunities. Education has clearly been implicated in the needs for socio-cultural, economic development, for building the future; it has become an international business.

A higher education institution should be innovative and experimental for it is essential that it is able to respond to the enormous changes taking place, as well as being able to make its qualifications readable and recognisable by other institutions – both nationally and internationally. Additionally, in order to be able to compete more effectively in the global market place, the creation of general systems for benchmarking, especially international benchmarking and quality assurance should work around such developments (Edwards, 2002, 26).

Future challenges lie in the fact that higher education has to enter the education industry in which both domestic, international students and professions demand quality services to meet their diverse needs. A very important implication, which especially compels higher education to cope

with globalisation, is trade liberalisation in different service sectors conditioned by the World Trade Organisation. This has resulted in a higher level of competitiveness in the social sector, including education.

As a consequence, higher education should be aware of the importance of quality assurance in the operation and delivery of its academic programs. The major beneficiaries of a well-run quality assurance system in higher education are the students and graduates who will have experienced many opportunities to provide comment and feedback on their experiences. Employers and other stakeholders will also have been consulted and included in this process. Academic staff should have gained adequate feedback to positively influence their teaching and learning activities and supervisory skills, as well as the course structure and content of academic programs. The quality and performance of the institutions and their programs will have been proved by these quality assurance measures (Holmes, *Foreword*, in Zuber-Skerritt & Ryan, 1994).

Higher Education in Thailand

Two issues are considered under this section: recent reforms in higher education, and the development of graduate education.

Recent reforms

In Thailand, there is a sense of urgency to speed up reforms, beyond the political, to include the civil service and education. In the higher education community, expectations are placed on the senior leaders – at both ministerial and university levels – who will be required to guide the reform in the light of the country's deep financial difficulties. It is essential to focus mainly on quality assurance which constitutes one of the key aspects stipulated in the National Education Act of BE 2542 (1999) (ONEC, 1999a). Sustainability of quality will only occur when a quality system culture is firmly founded. Higher education has to stand ready to meet the challenges to

ensure quality assurance and recognition of degrees. An optimal form should thus be sought to accommodate education in order to fulfil these requirements appropriately. Additionally, the quality assurance implementation in the second cycle from 2006 to 2010 sees more challenging indicators, not only in the academic but also in the ethical and moral aspects (Sujatanond, 2002, 68).

Graduate Education

Graduate education in Thailand is the most rapidly growing segment of the higher education market not only because of the rapid growth of its economy over the past decade, where there has been a large demand in the job market, as well as the next generation that needs to be better educated; especially, this demands that academics accept the role of being responsible for the academic and management decisions made in universities.

All public universities – including autonomous universities, and Rajabhat and Rajamangala universities (a system of forty-one universities that were originally teachers colleges, and nine universities of technology, respectively) – have their own Acts empowering the University Councils to function as the governing body. Presidents, as chief administrators, operate their universities according to the policy laid down by the University Council. Such universities have their own administrative structures and full autonomy allowing administrative and management matters of the university to be handled by the universities themselves. Similarly, each private higher education institution also has its own council which is the administrative body responsible for the general functioning under the relevant rules and regulations. In addition, the 2003 Private Higher Education Institutions Act, Section 18, stipulates that institutions freely operate all programs that are approved by the Institution Council (Commission on Higher Education, 2003, 5). As a consequence, both public and private institutions can freely grant approval to the programs of study offered by these institutions, to every package or study pattern, everywhere, in all campuses. This, of course, raises

many questions of higher education administrators, including concern for quality issues. Academics who have advocated such issues in Thailand include Sirichana (1994, 3-4), Suwannavera (1996, 12-15), Viriyavejchakul (1997b, 36-47), Charoenwongsak (1997, 127-129), Areekul (2000, 195), Sinlalat (2000, 10-13) and Veerawatananont (2000, 1-2).

Thai higher education institutions face a crisis of faith and belief caused by the demands of educational standards and quality; these institutions must now be concerned, for example, with research quality, infrastructure to improve research environment, with the quality of masters' graduates, curriculum development, recruitment, retention, funding, publication, and resource allocation. Veesakul (2003) has recently undertaken a study of the situation in Thai higher education institutions. He points out that Thai institutions are facing serious problems regarding the quality of instructors and the quality of graduates. These problems arise from the following:

- an over-expansion in the number of faculties/departments;

- institutions organising study-time in the evenings of both work-days and week-ends in newly established campuses throughout Thailand;

- the introduction of many special purpose programs.

The prime mission of these institutions has been to find ways of attracting more students and to keep them studying, thus creating a regular income flow. While the budgets of institutions have been used to build buildings or to provide minimum resources, no serious efforts have been made to assure and improve educational quality, to promote professional development, and to bring about an increase in research and development activities.

The Office of the National Education Commission (ONEC, 2003, 130) points out that the quality of the country's education, when compared to the sizable resources and investments made in education, is being questioned as never before. Phusavat (2000, 233) provides several critical areas for Thai

graduate education to be addressed and examined so that the society's expectations might be fulfilled: research quality, infrastructure to improve research, educational environment, quality of graduates, curriculum development, student recruitment, retention, funding, publications, and resource development.

There have been many attempts to raise the quality of education. This has, in particular, involved enforcing all existing and new programs of study offered by public and private higher education institutions to revise their academic management processes and standards according to the announcement of the Ministry Standard Criteria. All graduate programs will now be scrutinised by the announcement of the Ministry of Education Standard Criteria of Graduate Programs of 2005 (Bureau of Standards and Evaluation, 2005). A second step has been the introduction of an external quality evaluation involving a review of documentary evidence and data, as well as visiting higher education institutions and undertaking an evaluation process in order to ensure that there has been an improvement of educational quality and standards.

Statement of the Problem

There are seventeen private higher educational institutions that have commenced Masters Degree Programs in Educational Administration in Thailand. Competition between institutions has become extremely keen, especially as all public institutions move out of the bureaucratic system to a more autonomous status, and as Rajabhat and Rajamagala Institutes transform their status to that of universities. The new policy direction has resulted in a rapid expansion in licensing programs in both public and private higher education institutions in Thailand to serve the unprecedented demand for preparation and licensing. Such programs face critical questions concerned with quality; this is the case for both new and existing programs (Tubsree, 2002; Prathumsri, 2004, 153; Visarabhorn and others, 2005, 2).

To ensure program survival and growth, and in order to carry out the reform along the lines stipulated by National Education Act and Announcement of the Ministry of Education Standard Criteria of Graduate Programs of 2005, private graduate schools of Educational Administration will need to be in readiness for the internal and external assessment of their programs. Programs and policies will need to be developed to ensure that the quality of the graduates will be at a level that satisfactorily meets the needs of individuals, workplaces and communities. At an administrative level, monitoring systems will need to be introduced that will provide a feedback mechanism for graduate departments concerning their performance, as well assisting in countering any shortcomings.

Quality assurance and quality management are important both to monitor performance and to ensure continued enrolment in courses of educational administration. Before quality assurance and productivity elements can be established, it is necessary to undertake a review of the best practices in order to establish composite indicators and best practices that will act as quality assurance benchmarks. The assembly of evidence for the establishment of these benchmarks will be undertaken via a Proactive Form of Evaluation (Owen, with Rogers, 1999; Owen, 2006).

Objective of the Study

The objective of this study is to investigate the key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice. The study will seek to establish a practical set of composite indicators for quality management of a Masters Degree Program in Educational Administration in private higher education institutions in Thailand.

Research Questions

The three research questions in this study are as follows:

1. What are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice?

2. What are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration?

3. What is recognised as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand?

Contribution to Knowledge

Cases of best practice can be used as inputs to develop policies and to develop subsequent educational administration programs. They can also be used as a basis for assisting a particular private higher education institution to create, implement and monitor their programs based on the principles identified in the best practice cases. In Thailand, there has been an examination of how composite indicators might be used to improve the educational system, especially for internal assessment. There has, however, not yet been a specific study of the best practice in a particular educational area. As a consequence, the study will be valuable in that its findings may be used to answer initial best practice questions. In addition, educational institution administrators will be assisted in continuous improvement and achievement of a sustainable program as a result of external analysis and investigation.

Statement of Significance

Evaluation is essential; evaluation evidence can contribute to judge the effectiveness, the value of education organisations, and the means to improve them (Wilson, 1994, 77). Program Evaluation, using the Proactive Form (Owen, with Rogers, 1999; Owen, 2006; Owen, 2006) – via a review of best practice and undertaking a Delphi survey – gives an opportunity to establish best practice and to provide essential indicators for Masters Degree Programs in Educational Administration at private higher education institutions in Thailand. The Graduate School of Educational Administration in Eastern Asia University, my institution, will be able to apply the findings for monitoring performance, determining benchmarks, continuous improving by appropriate feedback and implementation mechanisms, constructing reward mechanisms and policies, aligning management to higher education quality initiatives and program/policy.

Definitions of Terms

For the purpose of this study, *Composite Indicators for Educational Quality Management for a Masters Degree Program of Educational Administration in Private Higher Education Institutions in Thailand*, key terms are defined as follows:

Composite indicators

Indicators combine a number of educational variables, which the final composite is interpreted as a 'kind of average' of all variables entering into the combination.

Education

Education means the aggregate of all the processes by means of which people develop abilities, attitudes, and other forms of behaviour of positive value through imparting of knowledge, practice, training, transmission of culture, enhancement of academic progress, building a body of knowledge by

creating a learning environment and learning society and the availability of resources and factors conducive to continuous lifelong learning.

Educational institution administrators

Professional personnel who are responsible for leading and managing the educational institution.

Quality management

The complete process set up to ensure that the quality process actually happens.

Excellence of performance of organisation

Organisational performance that are results in delivery of ever-improving value to students and stakeholders, contribution to education quality; improving of overall organisational effectiveness and capabilities; organisational and personal learning.

Educational quality management

The management of the educational system for the Masters of Education Program in Educational Administration that seeks to satisfy both internal and external strategic constituencies in line with sets of explicit and implicit expectations.

Composite indicators for educational quality management

Composite indicators are tools to assess and reflect a process of change and development in the management of the educational system for the Masters of Education Program in Educational Administration satisfying both internal and external strategic constituencies in line with sets of explicit and implicit expectations.

Input variables

Educational input variables are variables employed to construct each composite indicator used in educational management.

Process variables

These are variables used in the structure which transform inputs into outputs.

Output variables

Educational output variables are variables constructed to support educational quality management.

Stakeholders

The term 'stakeholders' refers to all groups that are, or that might be affected by an organisation's actions and success. Examples of key stakeholders include parents, parent organisations, faculty, staff, governing boards, alumni, employers, other schools, funding entities, suppliers, and partners, local and professional communities.

Faculty

Faculty is the set of academic teachers with major responsibilities for teaching and research.

Resources for education

Resources contribute to the teaching and learning process, e.g. libraries, textbooks in Thai and other foreign languages, and all the production and refinement of textbooks, reference books, professional books, publications, materials, and other technologies.

Management process

This is the practise of management, established in stated policies and procedures and guidelines, that educational administrators employ.

Teaching and learning process

This process is the sum of all activities created from the collaboration of the instructors in teaching and learning, according to the designed curricula.

Assessment process

This is the process of information collection undertaken by faculty in order to make decisions about a students' learning, performance, competency and achievement.

Educational standards

These standards are the specifications of educational characteristics, quality desired and standards required of all educational institutions. They serve as the means for equivalency for purposes of enhancement and monitoring, checking, evaluation and quality assurance in the field of education.

Quality system

The quality system includes the whole system of quality management which consists of three sub-systems of quality assurance, quality control and quality development.

Quality assurance

Quality assurance is a system concerned with providing evidence for interested people both within and outside an institution that the institution has in place procedures for ensuring that there is a commitment to improving quality.

Internal quality assurance

This involves the assessing and monitoring of the educational quality and standards of the institutions from within. Such assessing and monitoring is carried out by personnel of the institutions concerned or by parent bodies with jurisdiction over these institutions.

External quality assurance

This involves the assessing and monitoring of the educational quality and standards of the institutions from outside. Such assessing and monitoring is

carried out by persons or external organisations. Such measures ensure the quality desired and further development of quality and standards of these institutions.

Utility

The term 'utility' is referred in terms of 'practicality'.

Usability

'Usability' is referred in terms of 'efficacy' - something that could indeed be practical.

Limitations of the Study

The limitations that affected the study are listed below:

- Indicators of educational management quality for the Masters Degree Program in Educational Administration in Thailand, based on the Proactive Form of Evaluation of Owen, with Rogers (1999) and Owen (2006) were restricted to the establishment of benchmarks by means of a Delphi survey, and matching these benchmarks to practical needs of program designers in educational administration.

- The use of semi-structured interviews was restricted in order to gain insight and understanding of the specific concepts being tested in order to explore and maximize the opportunity to acquire information pertinent to the particular problem under consideration. While the process may be generalised, the product is quite specific.

- The composite indicators of educational management quality for the Masters Degree Program in Educational Administration, which were constructed to cover the educational system, were

limited to three distinctive sub-divisions: input, process, and output.

The theoretical framework used to develop composite indicators of educational management quality for the Masters Degree Program in Educational Administration was based on Johnstone's (1981) framework for the development of indicators of educational systems. These indicators are derived from theory, rather than practice. *Education Criteria for Performance Excellence of the Baldrige National Quality Program* were employed to select and add the variables in order to construct composite indicators and their variables using the Proactive Evaluation methodology of Owen, with Rogers (1999) and Owen (2006).

The study was concerned mainly with a survey of opinions by rating written items to construct composite indicators of educational management quality for the Masters Degree Program in Educational Administration.

1. The questionnaire items were formulated in English and translated into Thai.

2. The study was limited neither by time nor finance.

3. The participants in this study were those with interest in and knowledge about the topic, and motivation to complete the questionnaire.

The Conceptual Framework

This study was exploratory and a mix of qualitative and quantitative data collection was employed. A Proactive Form of Program Evaluation (Owen, with Rogers, 1999; Owen, 2006) was applied in this study to provide information in order to assist decisions about a future or projected program. The purpose of this Form is 'to provide evidence to aid the synthesis of programs' (Owen, with Rogers, 1999, 171). In addition, Owen, with Rogers believe that indicators have a place within the range of possible evaluation

methods within program management. Indicators can also be used to make statements about the institution's effectiveness and/or the impacts of programs. Well-constructed indicators provide the summary information which allows parties concerned to evaluate the program for which they are responsible (Owen, with Rogers, 1999, 253-254).

After consideration of several alternatives, a Delphi survey was selected as a principal research technique; this was undertaken for three reasons. First, by using the Delphi technique, individual panellists were able to focus on rating, revising, and commenting on the criteria presented without the distractions normally associated with more traditional face-to-face meetings. Second, it allowed the researcher to describe the participants' responses using descriptive statistics. Third, a Delphi survey enabled the study to be conducted efficiently and effectively – it achieved its purpose within a reasonable time frame at a moderate cost and with minimal inconvenience to the participants.

In this study, the best practice and composite indicators for educational quality management for a Master degree program in Educational Administration in private higher education institutions in Thailand were established. The best practice and composite indicators were developed based on Johnstone's (1981) framework for the development of indicators of education. Such defining involves prior identification of a set of variables and combines them together to produce a single set of indicators. This enables the construction of an indicator by adopting an existing indicator and/or formula that serves for the particular purpose. Johnstone (1981, 74) suggests that, in an initial definition of indicators, there are at least three problems that need to be addressed and solved: first, the selection of component variables; second, the selection of a method by which such variables can be combined into the composite indicators; third, the selection of weights. As any one variable that might be created by experts can substitute or compensate for one another, an additional method was used in this research for combining variables into the composite indicators. In order

to select, weigh and combine variables to develop indicators as well as to establish the best practice according to the Proactive Form of evaluation and the related approach of Owen, with Rogers (1999) and Owen (2006), both indicators and best practice elements were established by means of a Delphi study as summarised in the conceptual framework of the study shown in Figure 1.1. The methodology associated with this framework is developed fully in Chapter 3.

A number of studies concerning development of educational indicators by using Delphi survey techniques have been carried out in Thailand, e.g., Duangmanee (1997); Cheauchan (2000); and Paonil (2000). The studies have revealed what and how to develop in relation to educational indicators, but they have not created evaluative criteria in order to provide information to assist decisions on what, when and how improvements are needed in order to create quality performance or best practice. Delphi survey techniques have been accepted by the vast majority of researchers who have applied and studied it as a reliable method of obtaining a consensus view on a topic – in this case the establishment of indicators and best practice elements.

Quality assurance in higher education has become not only an institutional and national issue across the Asia-Pacific region: it is also a global one. Determining and maintaining quality is a must in a time of rapid change; therefore, universities and colleges throughout the world are paying special attention to designing and implementing new quality assurance mechanisms and systems in order to ensure that students receive high quality and relevant education and that their degrees and diplomas are widely recognised. Such recognition is seen to be essential not only by national governments and stakeholders but also by private institutions and those concerned with international developments.

FIGURE 1.1   METHODS OF STUDY

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                    │   Phase 1           │
                    │   Research Review   │
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│ Data for questions about the best practice and its essential       │
│ indicators for a Master Degree Program of Educational              │
│ Administration is to be gathered.                                  │
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                    ┌─────────────────────┐
                    │   Phase 2           │
                    │   Delphi survey     │
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┌──────────────────────────────────────────────────────────────────┐
│ Selection of Expert panel 1                                        │
│ (Step 1, Round 1)                                                  │
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│ The best practice is established                                   │
│ The best practice indicators are developed                         │
│ (Step 2, Round 1)                                                  │
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│ The best practice is to be reconsidered                            │
│ Content validity, appropriateness and practicality of indicators   │
│ are to be tested for confirmation                                  │
│ (Step 2, Round 2)                                                  │
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│ The best practice is to be confirmed                               │
│ Weights have to be decided                                         │
│ (Step 2, Round 3)                                                  │
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│ The best practice achieves consensus                               │
│ The best practice composite indicators are constructed             │
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                              │
                              ▼
                    ┌─────────────────────┐
                    │  Phase 3            │
                    │  Second survey      │
                    │  Semi-structured    │
                    │  Interviews         │
                    └─────────────────────┘
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┌──────────────────────────────────────────────────────────────────┐
│ The best practice and indicators are to be tested for practicality │
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Quality assurance can be defined as the systematic management of procedures in order to monitor performance and ensure the achievement of quality outputs and quality improvements. Quality assurance serves a number of purposes. Apart from protecting stakeholders' interests and facilitating international recognition of the standards of awards, it is an important

element for public accountability purposes, particularly to satisfy taxpayers that these is value for money in the government subsidies that are supporting education activities, and that these activities are of an appropriate standard. It is also concerned with the importance of providing quality assurance as a benchmark to ensure that universities are fulfilling their responsibility for being the institutions delivering quality education.

Development of best practice and of composite indicators for educational management quality in Thai higher education institutions via a Proactive Form of Evaluation (Owen, with Rogers, 1999; Owen, 2006) using a mixed methodology design, is pivotal in both internal and external quality evaluation at institutional and faculty/department levels. It is expected that the findings of this research will be of benefit for policy formulation, planning, controlling, as well as improving, the quality of graduate education management.

Summary

Program evaluation, using the Proactive Form and the review of the best practice approach of Owen, with Rogers (1999) and Owen (2006) by means of a Delphi survey gives an opportunity to establish best practice and to provide essential indicators. The graduate Schools of Educational Administration in private higher education institutions in Thailand will be able to apply the findings in a number of ways: for monitoring performance to ensure continued enrolment; to use the benchmarks for continuous improvement through appropriate feedback and implementation mechanisms; to construct reward mechanisms and policies; to align management both to higher education quality initiatives, and to higher education programs and policy.

Organisation of the thesis

The thesis is organised into seven chapters, as follows.

Chapter 1 defines quality assurance and quality management; provides a brief overview of graduate education, and of quality concerns in courses of educational administration in Thailand. The statement of the problem is introduced to emphasize the importance of the study, and the research questions are stated. Finally, a conceptual framework for the study is presented.

Chapter 2 introduces principles and concepts, together with approaches, from related literature that are applicable to considerations of quality; quality management, quality assurance, and the standard criteria of a Masters Degree program in Thailand. It provides a conceptual research framework and outlines approaches in order to establish best practice and composite indicators for an effective Masters Degree program in Educational Administration in private higher education institutions in Thailand.

Chapter 3 introduces the main research methodology that is based on the Proactive Form of Evaluation and the review of the best practice approaches of Owen, with Rogers (1999) and Owen (2006). It also describes how a Delphi survey was used to establish best practice and to provide essential indicators for Masters Degree Programs in Educational Administration at private higher education institutions in Thailand was undertaken, together with a description of the mix of qualitative and quantitative data collection methods that were employed in this research.

Chapter 4 summarises the responses to the three Delphi questionnaires: results of these questionnaires are presented and analysed. This is followed by a treatment of the data and a report of the findings.

Chapter 5 summarises the responses to the single round questionnaire; results of the questionnaire are presented and analysed. This is followed by a treatment of the data and a report of the findings.

Chapter 6 summarises the findings: key requirements; essential indicators; and recognised best practice for educational quality management for a Masters Degree program in private higher education institutions in Thailand. An analysis and discussion of six semi-structured interviews is undertaken; recommendations are presented to provide a fabric for the future.

Chapter 7 provides a conclusion to the thesis, describing the relationship between the composite indicators and their variables and the three research questions, and how the composite indicators and variables might be implemented in a program. Finally, a Program System Model is developed that might be used to aid decision-making about the structure and content of future policies and programs.

CHAPTER 2

Review of the Literature

Introduction

It is clear that modern higher education programs must meet multiple goals and navigate multiple agendas. Program leaders have to think of defining their program purposes and ways of operating, especially paying attention to the expectations of stakeholders such as students, employers, national and international societal, and the external evaluation organisations. It is true that many stakeholder groups tend, essentially, to have a view of quality – especially quality of service – and so it is the responsibility of innovative programs to lead the discussion of quality in the context of their new operating environments.

Education indicators are considered to be policy-relevant signposts designed to provide information about the status, quality, or performance of the education system. Measures associated with indicators are both qualitative and quantitative; they provide information related to efficiency and effectiveness; thus, they must have a standard against which they can be judged. Critical criteria for judging the value of indicators and an indicator system in an educational environment are therefore essential. These criteria are interwoven to yield judgments of the usefulness and credibility of the information system intended to aid the functions of monitoring and improving (Burstein et al., 1992, 410).

At present, there are seventeen private universities and colleges in Thailand that operate Masters Degree programs in Educational Administration. Evaluation for both new and existing programs – by undertaking a Delphi survey and a review of best practice approach within the Proactive Form of Program Evaluation (see Owen, with Rogers,1999; Owen, 2006) – can help establish composite indicators and define 'best practice' for Masters Degree Programs in Educational Administration. Both of these elements are especially important in private higher education institutions in Thailand: to routinely monitor performance; to ensure that quality enrolments continue in courses of educational administration.

Proactive Evaluation

Evaluation is essential, especially in enhancing effectiveness and improved decision making. Wilson (1994, 77) points out that evaluation refers to the process of designing and implementing approaches for collecting and interpreting evidence on the quality of educational institutions, programs and the mechanism which sustain them. Evaluation evidence contributes to judging the effectiveness and value of educational organisations and the means to improve them. Patton (1997, 4) suggests that

> … the challenges using evaluation in appropriate and meaningful ways represents just such a crisis in program arrangements. The issue of how evaluations can be conducted in ways that lead to use has emerged at the interface between science and action, between knowing and doing. It raises fundamental questions about human rationality, decision making, and knowledge applied to creation of a better world.

Therefore, evaluators have to clearly understand their responsibilities, and be concerned that, for an evaluation plan, a well-presented and well-managed process and a deliberate implementation strategy is applied.

Owen, with Rogers (1999, 39) provide the viewpoint that, when thinking conceptually about the ways in which evaluation can provide

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leverage and help decision-makers, the 'why' question is the most important as the answers can develop and turn effective evaluation plans into well-focused fieldwork and dissemination. Owen, with Rogers (1999, 40) have identified five Forms of Program Evaluation, each of which is determined by the timing of the program (Owen, with Rogers, 54): Proactive (before); Clarificative, Interactive and Monitoring (during); and Impact (after). Each Form can be moulded into all stages of the organisation or a program cycle according to the state of the program. Owen, with Rogers (1999) and Owen (2006) identify a range of Approaches within the Forms of Evaluation that evaluators, clients, and other stakeholders may select as the basis for an evaluation.

A Proactive Form of Evaluation (Owen, with Rogers, 1999; Owen, 2006) is applied in this study to provide information in order to assist decisions about a projected program – a Masters Degree program for Educational Administration in Thailand – as the purpose of the evaluation is to provide advice to aid in the program's formulation (Owen, with Rogers, 1999; Owen, 2006, 171).

Caldwell & Spinks make three useful assumptions which guide all evaluation activities (Caldwell & Spinks, quoted in C. Marsh, 1994, 33). These are:

- The policy statements and programs are used to judge whether or not a program has achieved its objectives.

- The details of programs are used to judge how achievement levels were intended to occur, and if not, why not.

- The details can pinpoint which resources are being used and whether redistribution of certain resources should occur.

Patton (1997, 17) suggests that there is one critical challenge: using evaluation in appropriate and meaningful ways. The crucial consideration is how we *do* evaluations that are useful and actually used. Patton provides the

essential four standards of evaluation, those are: *utility*: the utility standards are intended to ensure that an evaluation will serve the practical information needs of intended users; *feasibility*: the feasibility standards are intended to ensure that an evaluation will be realistic, prudent, diplomatic and frugal; *propriety*: the propriety standards are intended to ensure that evaluation will be conducted legally, ethically, and with due regard for the welfare of those involved in the evaluation, as well as, those affected by its results; *accuracy*: the accuracy standards are intended to ensure that an evaluation will reveal and convey technically adequate information about the features the determine worth or merit of the program being evaluated.

The evaluator has a responsibility to act in accordance with the profession's adopted principles of conducting systematic, data-based inquiries; performing competently; ensuring the honesty and integrity of the entire evaluation process; respecting the people involved in and affected by the evaluation; and being sensitive to the diversity of interests and values that may be related to the general and public welfare (AEA Task Force 1995, 20, quoted in Patton, 1997, 21).

Owen, with Rogers (1999, 1) point out that evaluation is essential, especially for people who have responsibility for the development and delivery of policies and programs, in order that they might plan more carefully, reflect more critically, and be able to justify their reasons for selected courses of action.

Owen, with Rogers (1999, 6, 15) argue that the evaluation logic must assist in making a judgment of the worth of the object under review, the evaluand: choosing criteria and setting standards by which an evaluand can be judged worthy or acceptable is the key to ensuring that an evaluation will be of value in decision-making. They also argue out that program evaluation can be classified conceptually into five categories, or Forms: Proactive, Clarificative, Interactive, Monitoring, and Impact.

Proactive Evaluation, as the first of these forms, takes place before a program is designed or when an existing program is in need of a major review or is to be replaced by a new one. It assists program planners to make decisions about the type of program needed; its major purpose is to provide input to decisions about how best to develop a program in advance of the planning stage. Proactive Evaluation places the evaluator as an adviser, providing evidence about what is known about policy development, what format of program is needed or how an organisation may be changed to make it more effective, for example, advice for making key decisions which affect the future or even survival of an organisation.

Within all of the Forms of Evaluation there are appropriate Approaches 'taken from a social science of management perspective' (Owen, 2006, 40). There are three approaches which are consistent with Proactive Evaluation, as follows:

1. Needs assessment or needs analysis;

2. Research Review; and

3. Review of best practice, and the creation of benchmarks.

A Proactive Form of Evaluation, as described by Owen, with Rogers (1999, 41-42) was applied in this study because evaluation within this form assists educational decision-makers in deciding how best to develop a new program. Proactive Evaluation is able to place an evaluator as an adviser, providing evidence about what is known about policy development, what format of program will be needed or how an institution will be changed to make it more effective. A review of best practice within this form places emphasis on selecting and studying exemplary practice relevant to the problem that needs to be addressed.

Thomas & Altschuld (1985, in Owen, with Rogers, 1999, 182-184) used a Delphi survey technique as part of a Proactive Evaluation needs assessment in their study 'Needs of staff employed in the welding industry'

which was initiated when the Edison Welding Institute (EWI) had employed an evaluator team to undertake a Delphi study of immediate and future education needs of welding staff. The findings provided EWI with base data for establishing both immediate and future education and training needs and also the characteristics of employer needs and timing to be assessed.

Stringer & Owen (1986, in Owen, with Rogers 1999, 185-8) applied a best practice review approach as part of a Proactive Evaluation in the study 'Is the Music Curriculum in Dire Straits?' This study revealed that Proactive Evaluation can support radical changes in an existing program that is seen to be out of date or not serving the perceived needs. An evaluation study was commissioned to investigate the accuracy of the perceptions and to provide guidelines for a revision of music curriculum policy.

The review in this study involved a computer-based literature search for worldwide publications in the area, an analysis of national documentation, and interviews with music curriculum personnel in the Ministry and in selected schools.

Owen, with Rogers (1999, 188) point out that the evaluative aspect of benchmarking provides opportunities for the development of internal evaluative skills in both the private and public sectors. What is more, they see development of this aspect of benchmarking as being necessary if the 'full effect of transferability of quality practice' is to be transferred effectively across systems that seek to be competitive and to maintain high standards. Thus, this study was focused on both developing evaluative skills and seeking transferability of quality practice into an established academic field. In particular, Owen, with Rogers (1999, 253-254) point out that indicators can be used to make statements about a program's effectiveness and/or the impacts of programs. Well-constructed indicators provide the summary information which allows parties concerned to evaluate the program for which they are responsible.

The five Evaluation Forms of Owen, with Rogers (1999) and Owen (2006) provide a framework for answering the 'why' question in evaluation. They can be moulded into all stages of the program cycle which signifies that the concerns of evaluation change as a program is designed and developed. It is important that Proactive Evaluation be responsive to the concerns of potential developer. Proactive Evaluation is used before a program is designed, or a program existed but there is a need for a major review. It is in the former application that Proactive Evaluation can be applied to the case of Masters Degree programs for Educational Administration in Thailand.

Educational Management

The concept of 'educational management' is helpful in ensuring that the managerial infrastructure, at least, is appropriate to its tasks and the demands of other elements in managing the program business, although it is almost certain that there will have to be a reappraisal of it in the imminent future for programs. Program leaders have to think and act to improve program systems in order to provide superior stakeholder value.

Hoy & Miskel (1991, 17) apply the concept of 'systems' in order to better understand organisations: a system is 'a set of interdependent elements forming an organized whole'. Organisations, such as schools and universities, are systems of social interaction: they are social systems comprised of interacting personalities bound together in mutually interdependent relationships. In brief, they view organisations as 'closed systems', and attempts to synthesize the influence of both formal and informal features of organisational life are cast in the context of closed-systems thought: 'behaviour in formal organisations is explained almost exclusively in terms of forces inside the organisation'. However the organisation is not isolated from its environment; 'attention needs to be devoted to the impact of environmental or outside forces on internal organisational behaviour'.

Bennett (1994, 1) suggests that management in education is primarily concerned with the management of change. National and local policies throughout the world require educational establishments from nursery schools through to universities to take on board new legislative requirements and obligations, and come to terms with new ways of thinking about the delivery of education services. In addition, Bennett points out that, when faced with a plethora of changing demands, educational administrators need to balance the demands of implementing changes and providing a bulwark against too much change so as to create a stable working environment for their colleagues and those they teach.

Educational institutions should protect their freedom to be innovative and experimental for that is essential to respond to the enormous changes taking place, as well as making their qualifications readable and recognizable by other institutions, both nationally and internationally. Benchmarking assists in this process. In order to be able to compete more effectively in the global market place, higher educational institutions should be grouped as strategic networks with clear criteria for recognizing each other's degrees. The creation of general systems for benchmarking, especially national and international benchmarking and quality assurance, should work around such developments, although it will be very difficult and slow process (Edwards, 2002, 26).

Ewell & Jones (1994, 24-25) provide a conceptual view, derived from Romney et al. (1978), of the management process that guides development of the kinds of information needed to inform higher education management decisions. This is shown in Figure 2.1.

Kotter (1996, 25) defines educational management as 'a set of processes that can keep a complicated system of people and technology running smoothly'. The most important aspects of management include planning, budgeting, organizing, staffing, controlling, and problem solving.

FIGURE 2.1   A CONCEPTUAL VIEW OF THE MANAGEMENT PROCESS
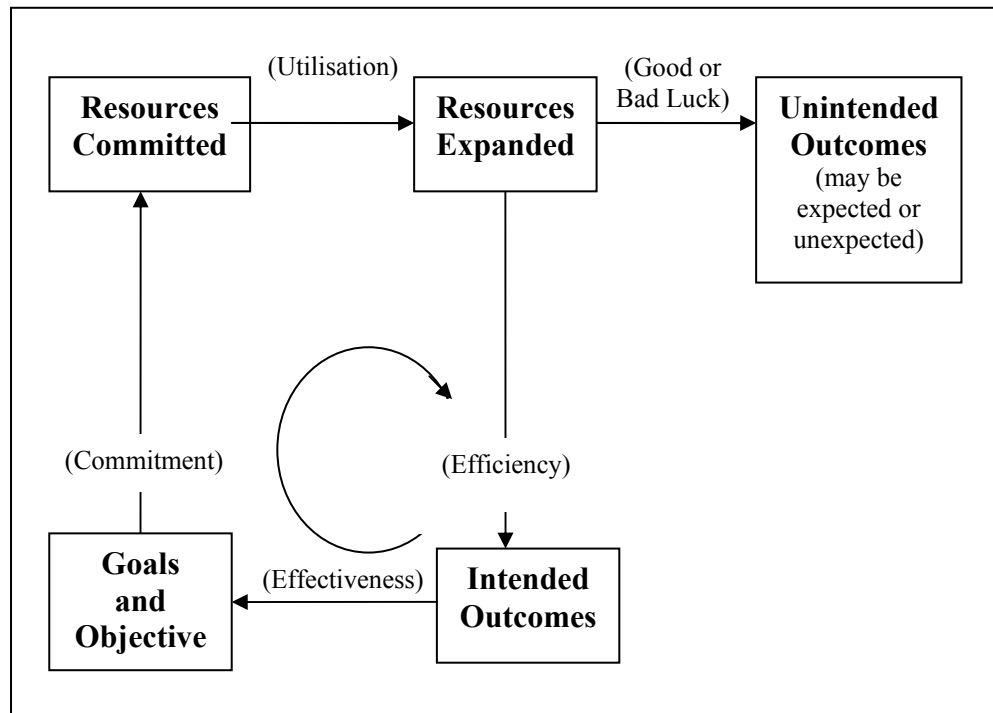
After Romney et al. (1978)

Lunenburg & Ornstein (2004, 5) clarify the meaning of 'management' by suggesting that there are two different management perspectives; those are: scientific management and administrative management. Scientific management focuses on the management of work and worker, while administrative management addresses issues concerning how the overall organisation should structured.

Lunenburg & Ornstein (2004, 32) provide a useful concept in understanding organisations: they claim that an organisation is 'a system which can be defined as a set of interrelated elements and that functions is a unit for a specific purpose'. They state that a systems approach is a way of viewing educational institutions as learning organisations. Their view is underpinned by that of Peter Senge in his best-selling book, *The Fifth Discipline*. In this book, Senge (1990) suggests that an organisation must be studied as a whole by taking into consideration the interrelationships among

its parts and its relationship with the external environment. Senge (1990, 3) defines *learning organisations* as

> organisations where people continually expand their capability to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together.

A learning organisation, Senge suggests, is a strategic commitment to capture and share learning in the organisation for the benefits of individual, teams, and the organisation. It does this through alignment and the collective capacity to sense and interpret a changing environment; to put new knowledge through continuous learning and change; to embed this knowledge in systems and practices, and to transform this knowledge into outputs.

Lunenburg & Ornstein (2004, 35) list seven action imperatives which can be interpreted in terms of what must change to help educational institutions become of learning organisations; those are:

1. Create Continuous Learning Opportunities;

2. Promote Inquiry and Dialogue;

3. Encourage Collaboration and Team Learning;

4. Create Systems to Capture and Share Learning;

5. Empower People toward a Collection Vision;

6. Connect the Organisation to the Environment; and

7. Provide Strategic Leadership for Learning.

Srikanthan (1999, 4) in *Universities and Quality – A World View*, discusses Bowden & Marton's model (1998, 276) for teaching a professional course that clearly explains the nature of core characteristics which should underpin a 'university of learning'. Each academic should develop a 'personal mastery' to commit themselves to a deep exploration of the subject

matter from a learner's perspective. They should 'think systemically' to discern the variation in develop multiple perspectives to the subject matter being taught. They should be synergistically involved in a 'team learning' activity studying the effectiveness of the total student experience. The team should develop a 'collective consciousness which comprises of what is common and what is complimentary'. Srikanthan concludes this develops a 'shared vision' within the team; the team operates by bringing the 'differences and complementarities into the open' which clarify the 'mental models' held by individual members, derived from their professional and personal background. It 'enriches their collective consciousness.

Argyris & Schön (1996), in their *Preface* to *Organisational Learning II*, suggest that organisations need to adapt to changing environments, draw lessons from past success and failures, detect and correct the errors of the past, anticipate and respond to impending threats, conduct experiments, engage in continuing innovation, and build and realize images of a desirable future. They also point out that there is a virtual consensus that we are all subject to 'learning imperatives' in the academic as well as the practical world: organisational learning has become an idea that has good currency. Additionally, they provide useful suggestions about the questions that should be asked with regard to the use of organisational learning:

1. What is an organisation that it may learn?

2. In what ways, if at all, are real-world organisations capable of learning?

3. Among the kinds of learning of which organisations are, or might become capable, which ones are desirable?

4. By what means can organisations develop their capability for the kinds of learning they consider desirable?

Lunenburg & Ornstein (2004, 36-39) provide a useful model in order to analyse the operation of an educational institution and the role of administrators within that operation from an open systems framework which they group into three broad categories of inputs, transformation process, and outputs. They see these frameworks as aids in the analysis of educational institution operations and, more specifically, in the institution's system and operational management. They contribute greatly to the quick and accurate diagnosis of problems, and can focus the administrator's efforts on the key areas to introduce change in the systems. Figure 2.2 illustrates the interrelations among the dimensions of the operation management system. These dimensions are discussed below.

1. **Inputs.** The educational institutions might provide inputs with personnel, financing, and theory and knowledge. In addition, many countries, states, and local governments enact laws that regulate its operations. Other groups make demands on the institution: students, for example, want relevant and useful curriculum content to prepare them for the world of work, higher education and lifelong learning; teachers want higher salaries, better working conditions, fringe benefits, and job security; administrators and board members want a high return on their investment, that is, quality education within an operational budget. The community expects the institutions to provide quality education to all the clients; special interest groups have a variety of agendas. The task of the administrator is to integrate these diverse goals into a viable plan of action.

2. **Transformation Process.** Institutions should convert the inputs, especially from the external environment into some form of output. Work should be done in the system to produce outputs. The system, also, should *value add* to produce outputs. This transformation process includes the internal operation of the

FIGURE 2.2   BASIC SYSTEMS MODEL
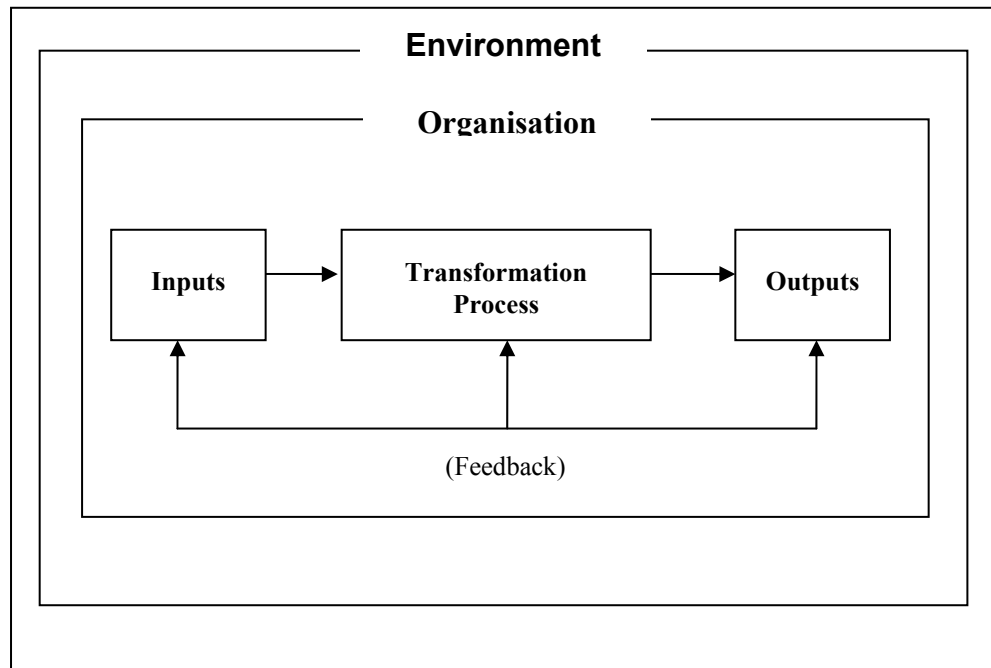
After Lunenburg & Ornstein (2004)

institution and its system of operational management. Some components of the system of operational management include the technical competence of administrators, including their decision-making and communication skills, their plans of operation, and their ability to cope with change. Activities performed by administrators within the institution's structure will affect the institution's outputs.

3. **Outputs.** The administrator should secure and use outputs from the external environment and transform them through administrative activities, as follows: providing a structure, developing a culture, motivating, leading, decision making, communicating, implementing change, developing curriculum, administering personnel and financing.

FIGURE 2.3   BASIC SYSTEMS MODEL
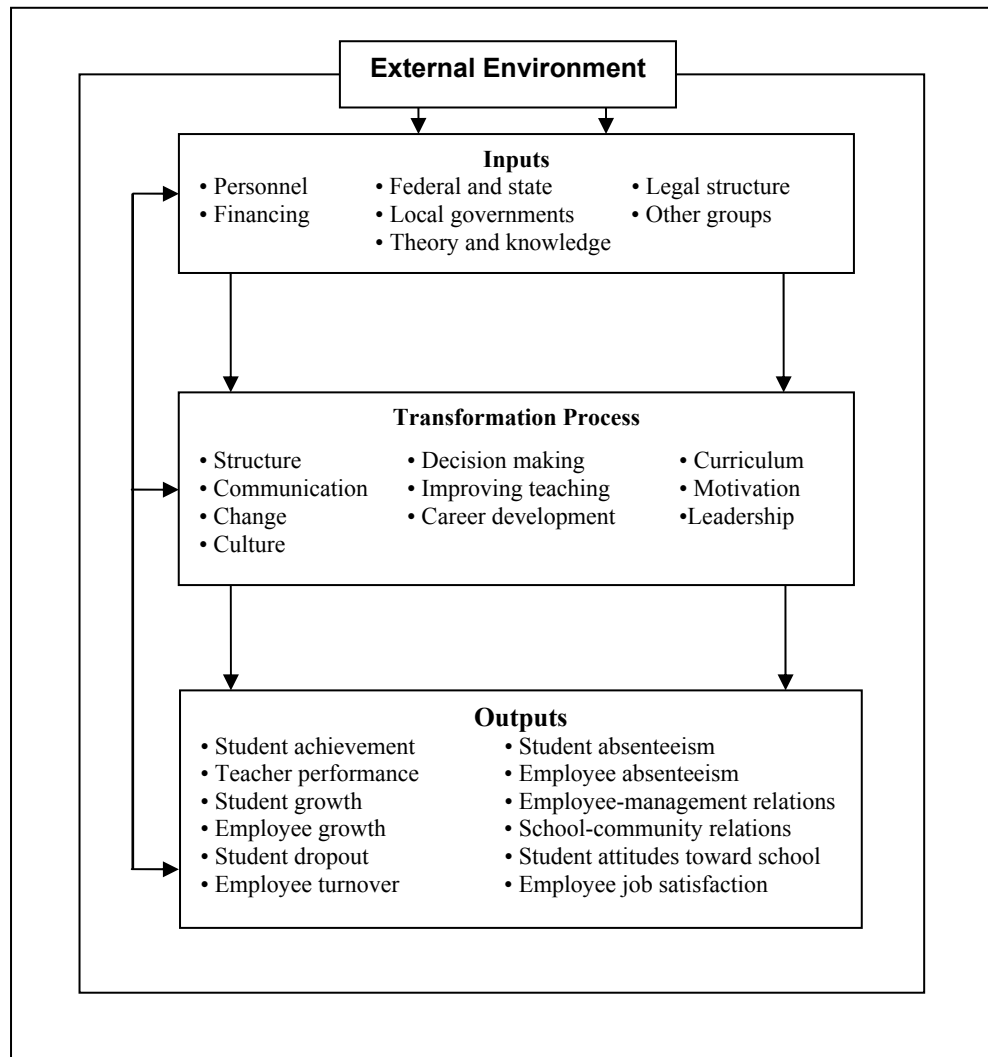
After Lunenburg & Ornstein (2004)

The external environment reacts to these outputs and provides feedback to the system. Feedback is crucial to the success of an educational institution's operation. Negative feedback, for example, can be used to correct deficiencies in the administrator's operational plan of action which, in turn, will have an effect on the institutional outputs (see Figure 2.3).

In accordance with this basic systems model, program leaders should make careful plans and think seriously about their responsibilities to the following tasks: being well prepared, working towards improving their

performance, understanding the tasks of educational management, and functioning effectively within the cultural and social environment. Employing the Proactive Form of Evaluation of Owen, with Rogers (1999, 171) enables policy and program development to be informed by the best and most appropriate evidence about the problem to be addressed. The evaluator's task is therefore to harness and provide knowledge for those who will be involved in program planning. The decisions about providing available resources should be based on the intuition of program planners, and long-used practices or personal preferences, and not be unduly influenced by political pressures.

Quality management

A program should be of high quality in all its endeavours. The program that is delivered must be of the right quality and be to the stakeholders' satisfaction. Quality and quality management have to be defined in terms of a specification or a mission statement. Appropriate mechanisms and procedures need to be in place to meet, consistently, these pre-defined standards.

Tribus (1993, 2) views quality management as 'a way to organize the efforts of people': its objective is to harmonise their efforts in such a way that not only do people approach their assigned tasks with enthusiasm, but they also participate in the improvement of how the work gets done. He suggests that quality management introduces a significant change in the relationship between those who manage and those who actually do the work.

Tribus also provides an application quality management in education. He suggests that there are four systems to be considered when introducing quality management into any education enterprise. These are illustrated in Figure 2.4 (Tribus, 1993, 19-20), below. Tribus indicates that the innermost circle is where the work gets done; where the tools and techniques are

FIGURE 2.4   THE FOUR SYSTEMS TO BE CONSIDERED WHEN INTRODUCING QUALITY MANAGEMENT INTO EDUCATION ENTERPRISE

THE EDUCATIONAL SYSTEM

The managerial system

The social system

Technical Tools and Techniques
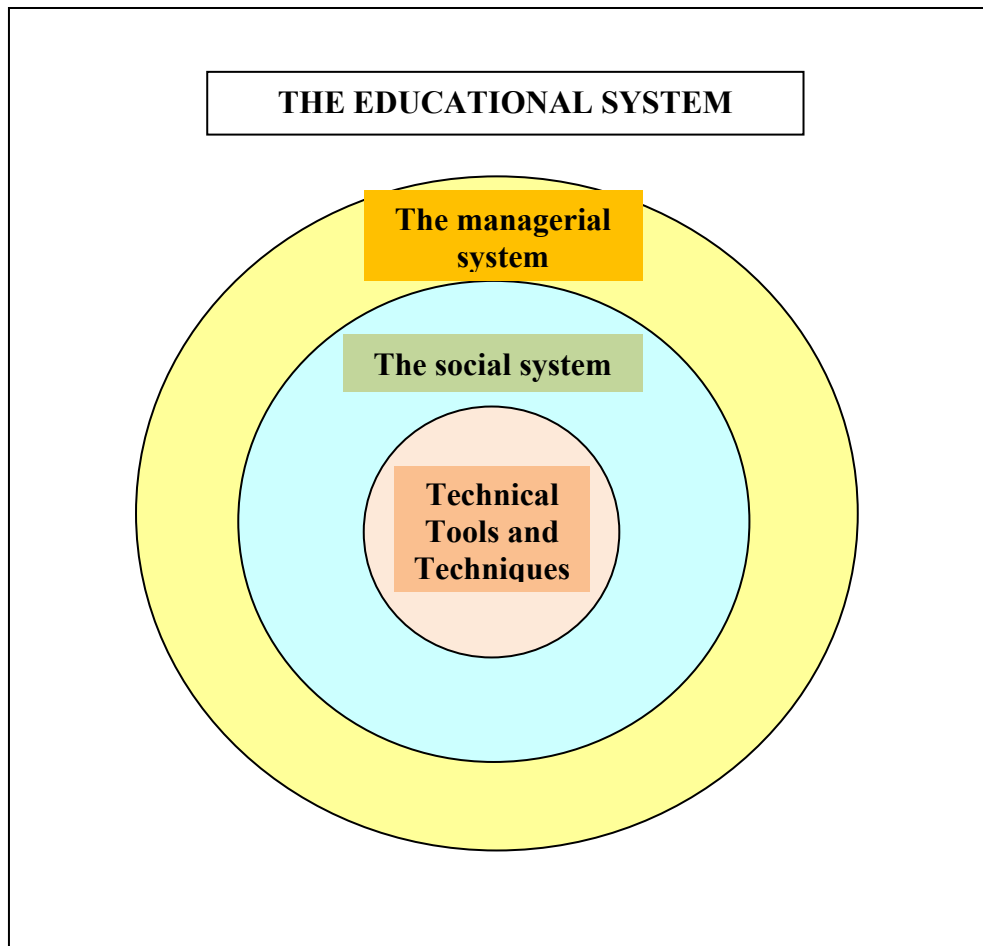
After Tribus (1993)

applied. Quality management has thus evolved a number of special tools and techniques which are of great value in the improvement of systems. These, he suggests, are described in many excellent books on quality management; few have been translated into experiences in education. He points out, however, that the work place is within a social system; a teacher cannot introduce a new approach in a classroom if the other teachers object. The approaches to the development of wisdom and character, therefore, must necessarily involve the entire faculty – it is not possible to consider the set of tools and techniques without considering the social system in which the processes are embedded. Moreover, he claims that the social system is embedded in a

managerial system. The managerial system, with its practices, protocols, permissions, privileges, and politics determines the nature of the social system. Thus, all three of these systems are 'boxed in' by the education of the people who inhabit them. He also suggests that any approach to the introduction of quality management must begin with education for the staff. In addition, the leader of the change process need to devise a strategy, and four important components should also be considered which are:

1. Development of a general awareness of why it is necessary to change.

2. Establishment of goals and objectives for the change.

3. Understanding, broadly shared, of what the change entails in all three of the systems of Figure 2.4.

4. A sensible set of first steps.

Tribus points out that those who would lead the change process should understand some of the dynamics involved in changing people's paradigms. Figure 2.5 indicates how people are locked into a reinforcing circle unless intervention occurs and an opportunity is afforded for reflection.

FIGURE 2.5   CHANGING THE PARADIGM OF A PERSON
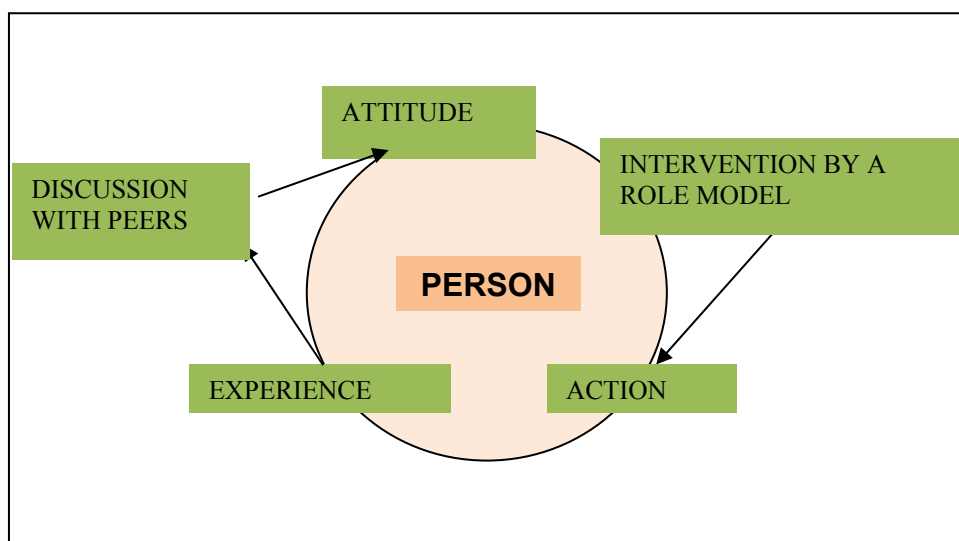
After Tribus, 1993

Tribus (1993, 20) suggests that, instead of the Deming-Shewhart circle of 'Plan-Do-Study-Act', they are caught in a vicious circle of 'Act upon Attitude', 'Gain Experience', 'Reinforce the Attitude'. It requires intervention to break the cycle.

Freed et al. (1997, 1-2) describe the quality principles as a management approach for making higher education more effective, in addition to creating an improved place to obtain a degree and a more enjoyable workplace. These principles are as follows: vision, mission, and outcomes driven; systems dependent; leadership; creating a quality culture; systematic individual development; decisions based on fact; delegation of decision making; collaboration; planning for change; and leadership: supporting a quality culture. They suggest that leadership be listed twice because leadership is a critical principle.

In addition, Liston (1999, 52) points out that the following principles provide a framework for a quality management system to foster improvement:

1. The chief executive officer (president or vice-chancellor) and executive managers are responsible for leading in the advancement of quality through monitoring and reviews to identify best practice using agreed *key performance indicators* (KPIs).

2. Commitment to quality is necessary for all elements of the education institution.

3. Everyone is responsive for continuous quality improvement in the workplace.

4. Quality management principles are incorporated into operational unit (faculty, school, department) plans.

5. Adequate resources are available to support quality management processes.

Liston also provides characteristics of effective quality management, as follows:

1. planning, innovation, and strategies to implement change;

2. use of benchmarks, standards and KPIs for monitoring change;

3. evaluation of best practice for continuous improvement;

4. efficiency and cost-effectiveness;

5. relational management information systems and reporting mechanisms;

6. dissemination of information and ongoing communication.

Liston (1999, 52-54) suggests that by reviewing their own mission and goals in the light of the institution's vision, mission, values, goals, and objectives (e.g., for teaching and learning, research, international and community interactions), personnel in each operational unit, school and department might share in setting a standard against which achievements are to be judged. Improvement can be gauged through regular review using agreed criteria. The processes of review may be five-or six-yearly for entirely programs to inform long-term planning, or annual reviews against short-targets. They form part of a typical *quality cycle* as illustrated in Figure 2.6 as follows:

Quality imperatives

Sallis (2002, 3-4), with a view to improving institutional quality, identifies four quality imperatives that emerged in response to his research question: 'Why should an educational establishment want to be involved in quality assurance activities?'.

First, there is *the moral imperative*. Sallis suggests that the customers and clients of the education service deserve the best possible quality of

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FIGURE 2.6   AN EDUCATIONAL INSTITUTION QUALITY CYCLE
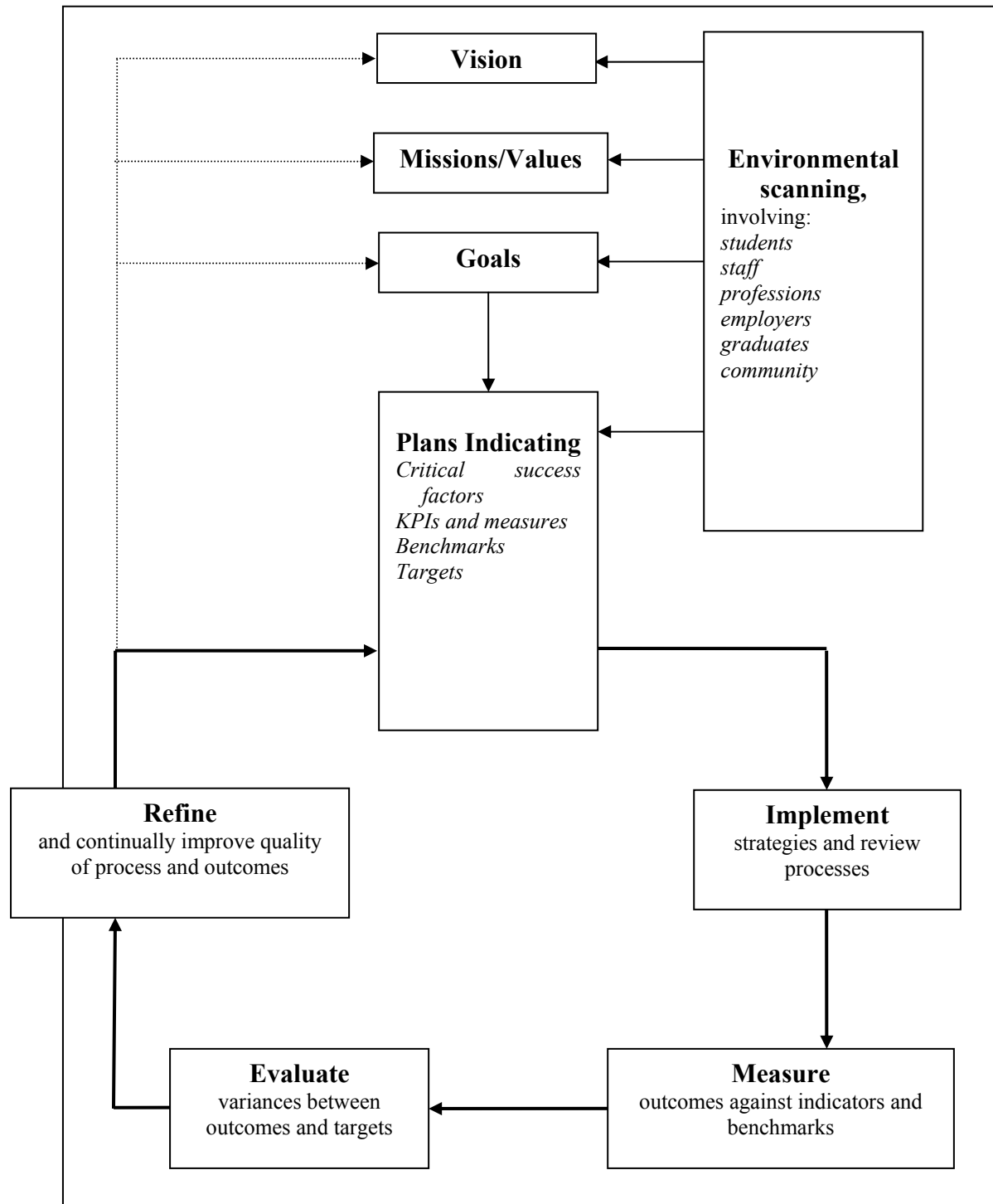
After Liston (1999)

education; thus, it is the duty of educational professionals and leaders to have an overriding concern to provide the very best possible educational opportunities.

Second, there is the *professional imperative*. Professionalism implies a commitment to the needs of students and an obligation to meet their needs by employing the most appropriate pedagogic practices. Educators have a professional duty to improve the quality of education and this places a considerable burden on instructors and leaders to ensure that both classroom practice and the management of the institution are operating to the highest possible standards.

Third, there is the *competitive imperative*. Falling enrolments can lead to staff redundancies and ultimately the viability of the institution can be under threat. Educationalists can meet the challenge of competition by working to improve the quality of their service and of curriculum delivery mechanisms. Competition requires strategies that clearly differentiate institutions from their competitors. Focusing on the needs of the customer is at the heart of quality; it is one of the most effective means of facing competition and surviving.

Fourth, there is the *accountability imperative*. Institutions are part of their communities and, as such, they must meet the political demands of education to be more accountable and publicly demonstrate the high standards. Sallis suggests that quality improvement becomes increasingly important as institutions achieve greater control over their own affairs; greater freedom has to be matched by greater accountability. Institutions have to demonstrate that they are able to deliver what is required of them. He concludes that if institutions fail to provide the best services they risk losing students who will opt for one of their competitors. Being in an era where parents and other stakeholders are asking tough and uncompromising questions, for education as for industry, quality improvement is a necessity.

In addition, Sallis (2002, 17) provides three important quality ideas: quality control, quality assurance and total quality. *Quality control* is the oldest quality concept. It refers to the detection and elimination of components or final products that are not up to standard. It is an after-the-event process concerned with detecting and rejecting defective items. As a method of ensuring quality it may involve a considerable amount of waste, scrap and reworking. Quality controllers or inspectors usually carry out quality control. Inspection and testing are the most common methods of quality control, and are widely used in education to determine whether standards are being met.

The varying goals of stakeholders have stressed the need for participation; quality should be everyone's responsibility external and internal throughout the program. The vesting of responsibility for quality in terms of individual responsibility and devolution should fit with the idea of 'professionalism' and the associate valuing of autonomy and self-direction. 'Quality' is 'fitness for standards that are accepted'; therefore, a program must have a well-defined mission with a delivery of goals and objectives. Each unit then will have the responsibility of developing its own quality assurance mechanism in order to fulfil the requirements of a program's quality standard.

Quality assurance

Quality assurance is concerned with providing evidence for interested people, both within and outside a program, that the program has, in place, procedures for ensuring that there is a commitment to improving quality. This requires methods for 'quality evaluation'. The results of the process of quality evaluation have to be established, monitored, and acted upon at all levels in the program. The mechanisms that fulfil this function provide 'quality control'. Quality control concerns itself with aims, objectives, setting

standards, monitoring assessment procedures, providing support structures that help to enhance quality, and reviewing all issues concerned with quality.

Quality assurance is different from quality control. It is a before- and during-the-event process concerned to prevent faults occurring in the first place. Quality assurance is about designing quality into the process to attempt to ensure that the product is produced to a predetermined specification. Put simply, quality assurance is a means of producing defect- and fault-free products. Quality assurance is about consistently meeting product specification or 'getting things right first time, every time'. The quality of the goods or services is assured by there being a system in place, known as a quality assurance system – a system that lays down exactly how production should take place and to what standards. Quality standards are maintained by following the procedures laid down in the quality assurance system. Quality assurance is the responsibility of the workforce, usually working in quality circles or teams, rather than the inspector, although inspection can have a role to play in quality assurance.

Total quality management incorporates quality assurance, but extends and develops it. Total quality management is about creating a quality culture where the aim of every member of staff is to delight their customers, and where the structure of their organisation allows them to do so. In total quality management the customer is sovereign. Sallis (2002, 17) points out that it is the approach popularized by Peters & Waterman (1982), and which has been a constant theme of Tom Peters' writings ever since. Total quality management is about providing the customer with what they want, when they want it and how they want it. It involves moving with changing customer expectations and fashions to design products and services that meet and exceed their expectations. Only by delighting customers will they return and tell their friends about it. Sallis points out that this is sometimes called 'the sell' in the definition of quality. The perceptions and expectations of customers, however, are recognized as being short term and fickle; and so

organisations have to find ways of keeping close to their customers to be able to respond to their changing tastes, needs and wants.

Ashworth & Harvey (1994, 7-12) define 'quality' as 'fitness for purpose'. They suggest that quality in the transformation of education is taken to be concerned with the key factors involved in the process: staffing; accommodation; equipment; teaching and learning; standards achieved; and management and quality control. These factors have the following quality features:

1. **Staffing**: size, qualifications and match of staff team to curricula and including part-time staff; experience – both academic, and external or professional; and staff development.

2. **Accommodation**: the amount, type and location of the accommodation; furnishing, services and physical environment; access and safety; well managed deployment of clean, well maintained accommodation; availability of support staff; and an effective and stimulating learning environment.

3. **Equipment**: the amount and range of equipment are appropriate; the equipment is effectively deployed, maintained and, when necessary, replaced by more appropriate equipment; and students have proper access to the equipment which is effectively utilized.

4. **Teaching and learning**: the framework in which the teaching session takes place; the context of the teaching session; what happens during the teaching session; the outcomes from the teaching session; the input of the teachers; and the response of the students.

5. **Standards achieved**: the mechanisms which ensure the appropriate maintenance of standards; and the employment destinations of the students.

6. **Management and quality control**: how to ensure that an appropriate mechanism operates within the institution to maintain an effective level of quality control; a quality assessment being made of an activity or facility by inspecting the mix of the desirable (i.e., good), and undesirable (i.e., causing shortcomings) characteristics present.

Ashworth & Harvey (1994, 130) conclude that the key aims of higher education quality control, assurance procedures and maintenance of standards are:

1. the holistic development of the students including the better preparation for employment;

2. the maintenance and enhancement of the quality of education experienced by the students;

3. the assurance that new program of study are developed to the appropriate standards and quality;

4. that subject development is taking place whereby program inputs are the appropriate level and content to reflect current developments; and

5. the encouragement of all staff to be involved in review, monitoring, evaluation and validation as a part of their own personal development.

Williams & Fry (1994, in Gordon, 1995) report six main strategic higher education concerns from the report which the Committee of Vice-Chancellors and Principals commissioned on the Long term Prospects for British Higher Education: diversity and differentiation, graduate employment, qualifications and the organisation of teaching and learning, opportunities offered by new technology, and income from the private sector and staff recruitment.

Cheng (1995, quoted in Cheng & Tam, 1997, 23) defines educational quality as

> the character of the set of elements in the input, process, and output of the education system that provides services that completely satisfy both internal and external strategic constituencies by meeting their explicit and implicit expectations.

Cheng & Tam (1997, 23) point out that education quality cannot be easily assessed by only one indicator; in assessing educational quality, different indicators may be developed to give information about the performance of an educational institution in different aspects of input, process, and outputs.

Owlia & Aspinwall (1996, 19) provide quality dimensions and their corresponding characteristics in higher education. These are as follows:

- *tangibles*: sufficient equipment/facilities, modern equipment/ facilities, ease of access, visual appealing environment, and support services (e.g., accommodation, sports);

- *competence*: sufficient (academic) staff, theoretical knowledge, qualifications, practical knowledge, up to date, teaching expertise, and communication;

- *attitude*: understanding students' needs, willingness to help, availability for guidance and advice, giving personal attention, emotion and courtesy;

- *content*: relevance of curriculum to the future jobs of students, effectiveness, containing primary knowledge/skills, completeness, use of computers, communication skills and teamwork, and being cross-disciplinary;

- *delivery*: effective presentation, sequencing, timeliness, consistency and fairness of examinations, feedback from students and encouraging students;

- *reliability*: trustworthiness, giving valid awards, keeping promises, and matching programs to goals; handling complaints, and solving problems.

Hill et al. (1996) state that, as a quality product model, the program for professional nurses consists of the following: *context*: customer need, setting, resources, student access and teacher competence; *process*: teacher activity, student activity, tripartite communication and happiness factor; and *outcomes*: cost effectiveness, fitness for purpose and development of individual.

Rowley (1996a, 253) points out that quality in higher education can be viewed in the form of service quality as its dimensions or attributes are those attributes which contribute to the customer's evaluation of servicing. Therefore, the knowledge of these dimensions and the ability to measure them is essential for providing insight into more effective ways of improving quality, which are:

1. **Tangibles:** physical facilities, equipment, appearance of personal;

2. **Reliability:** ability to perform the promised service, along with dependability and accuracy;

3. **Responsiveness:** willingness to help customers, and to provide prompt service;

4. **Assurance:** knowing customers' wants, and being courteous and able to inspire confidence;

5. **Empathy:** caring individual attention.

Rowley (1996b, 12) suggests that while the quality of the student/lecturer relationship is important and that it is appropriate to seek to monitor this through appropriate quality assurance processes, it is a very superficial approach. Rowley sees the real challenge as the enhancement of quality. A number of institutions have investigated approaches to quality

enhancement (see, for example, Cornesky, 1991; Ewell, 1991; Marchese, 1991; Hart & Schoolbred, 1993).

Peterson et al. (1997) view retention in higher education as a topic of global concern. They provide a useful concept of 'integration', suggesting that higher education students' decisions to stay or leave are influenced by the level of connection they have developed with the institution. They claim that in order to address seriously the challenge of increasing student integration, and thus retention, higher education must not only assess the character and quality of student experiences within the institution, but also, identify how well the student is supported in meeting their needs outside the institution. They conclude that if there is a relationship between quality precepts and retention, then institutions ought to allow this focus to drive policy.

Mizikaci (2005) provides a systems evaluation model for total quality management in higher education that involves the social system, the technical system, and the managerial system. Those systems can classify their elements as follows:

1. **Social system**: the environment, product or services, methods, people, organisational structure, and mindset of total quality improvement;

2. **Technical system**, which consists of input: student characteristics (academic, demographic, needs, and expectations, interests), faculty characteristics, financial resources, facilities (classroom, library holdings, instructional equipments), programs, courses, schedules, and support services; transforming process: content, delivery, competence, attitude, tangibles, assessment of needs and expectations, assessment of customer satisfaction, and management; output: academic achievement (success rates, skill development, competency), graduation, dropout, failure, post graduation (pass rates on professional examinations, additional

education – e.g., success rates in getting admission in graduate schools) and employment achievements;

3. **Managerial system**: the organisational structures (formal design, policies, division of responsibility, and patterns of power and authority) and administrative activities (planning, organizing, directing, coordinating, and controlling organisational activities.

Stephenson (1997, 89) indicates that as each institution is unique, it must devise its own approach to quality assurance in the form of an overall strategy based upon its declared purposes and that strategy can then be constructed into actions by each of the academic and administrative departments. The purpose of each institution must be well-defined within its mission statement; in order to develop quality control mechanisms and to undertake quality assessment, it is necessary to define the purpose in terms of processes, procedures and expected outcomes for each of the academic and administrative units. Each department itself will have a diversity of goals and objectives and will therefore need to devise its own quality control mechanisms so as to fulfil the requirements of the institution's quality assurance policy.

In Thailand, the country has taken the significant step of encouraging all educational institutions to have their quality assurance externally evaluated for the second phase running from 2006 to 2010. Therefore, the most crucial quality assurance mechanisms lie with the institutions themselves. They must choose to adopt or develop a quality assurance system that is suitable for their particular context. They need to ensure that the system is transparent and that the administration is accountable for key administrative components that serve its programs and its students adequately: planning, controlling, monitoring, assessment and constant review and improvement of courses – the curriculum, teaching methods and facilities for helping students to learn how to learn; appropriateness and quality of research and faculty members' development to underpin quality in

teaching and learning; and accommodation, facilities, resource deployment, administrative processes and support structures.

The Malcolm Baldrige National Quality Program

Benchmarking is a systematic and continuous process of measuring and comparing an organisation's business processes against those of leaders anywhere in the world, to gain information which will help drive continuous improvement (Sharp, 1994, quoted in Owen, with Rogers, 1999, 178). Best-in-class benchmarking for a program needs to be accomplished. An attempt to identify best practices aims to provide comparative data that will describe a spectrum of performance in functional areas. Using such information, program designers should be able to see which of its operations are superior and where there are opportunities for improvement. Malcolm Baldrige National Quality Award Program (MBNQA) recipients strive to design and deliver effective educational programs and activities that lead to strong learning results and educational improvement for all students. The MBNQA is designed to help programs assess their strengths and weakness and whether they are deploying their quality efforts correctly. MBNQA is introduced to promote awareness of quality as an increasingly important element of competitiveness; understanding of the requirements for quality excellence; and sharing of information on successful quality strategies and the benefits derived from implementation of these strategies.

The MBNQA Improvement Act of 1987 was promulgated by United States Congress and named in honour of Malcolm Baldrige. Baldrige was US Secretary of Commerce from 1981 until his death in a rodeo accident in July 1987; he was a proponent of quality management as a key to American's prosperity and long-term strength. He took a personal interest in the quality improvement act that was eventually named after him, and helped draft one of its early versions. Important parts of this award are the willingness of the award winners to share and publish information about their successful quality

strategies with other U.S. organisations; only American companies are eligible. The first award was presented in 1988. Many American companies that do not apply, together with foreign companies, use the criteria for internal assessment. In addition, the criteria help employers to assess both short- and long-term strategic improvements, develop enhanced planning for continuous improvement, and increase customer satisfaction (Izadi et al., 1996, 2-3).

In this study, the MBNQA Educational Criteria for Performance Excellence (2005, 1-5) was selected because they were most appropriate for the task: (1) to help improve organisational performance practices; (2) to facilitate communication and sharing of best practice information among (US) organisations of all types; (3) to serve as a working tool for understanding and managing performance and for guiding organisational planning and opportunities for learning.

The educational criteria are built upon a set of interrelated Core Values and Concepts: visionary leadership; learning-centred education; organisational and personal learning; valuing faculty, staff, and partners; agility; focus on the future; managing for innovation; management by fact; social responsibility; focus on results and creating value. The criteria have a systems perspective that are embedded in the beliefs and behaviours found in high-performing organisations and provide a foundation for integrating key requirements within a results-oriented framework that creates a basis for action and feedback. Finally, they are designed to help organisations use an integrated approach to organisational performance management that results in: (1) delivery of ever-improving value to students and stakeholders, contributing to education quality; (2) improvement of overall organisational effectiveness and capabilities; (3) organisational and personal learning.

These Core Values and Concepts provided the blueprint for creating composite indicators and their variables for educational management quality for the Masters Degree Programs in Educational Administration in private

higher education institutions in Thailand used in the first Delphi technique questionnaires.

The researcher applied the set of introductory statements of the MBNQA 2005 Educational Criteria for Performance Excellence to Programs reported by Doherty (1994, 17) in order to obtain a set of twelve statements used to construct an initial set of composite indicators and their variables, namely:

1. Leadership is essential in an institution. Visionary leadership addresses how senior leaders guide and sustain institution, setting organisation vision, values, and performance expectation. Attention is given to how senior leaders, and create a learning environment that encourage ethical behaviour and high performance. It also includes an organisation's governance system, its legal and ethical responsibilities to the public, and how an organisation supports its community.

2. The customers' and stakeholders' expectations and standards are most important.

3. Learning-centred education is a strategic view of education. There is need to afford opportunities on the drivers of student learning, student persistence, student and stakeholder satisfaction, new markets, and market share – key factors in educational success. Learning-centred education focuses on the real needs of students, including those derived from market requirements and citizenship responsibilities.

4. Organisational performance improvement contributes to short- and long-term productivity growth and cost containment.

5. Organisational and personal learning are necessary considerations in today's fast-paced environment. Improvement and learning need to be embedded in work processes.

6. Teamwork is essential.

7. Faculty address key human resource practices – those directed toward creating and maintaining a high-performance workplace with a strong focus on students and learning and developing faculty to enable them and organisation to adapt to change.

8. Personnel appraisal is essential for development.

9. Recognition of good performance by individuals or teams is needed.

10. Creating an environment to encourage creativity and innovation.

11. Personnel and organisation participation and commitment are essential.

12. Best practice and benchmarking are needed to underpin the system.

Definition of Indicators

Education quality is a vague and controversial concept in research and policy discussion (Cheng & Tam, 1997, 23). The definition of education quality will differ according to the people and the context; hence, the indicators used to describe education quality may be different (Fuller, 1986; Hughes, 1988, quoted in Cheng & Tam, 1997, 23). Education quality is a multi-dimensional concept that cannot easily be assessed by a single indicator; a number of indicators will be required. A requirement of any chosen indicator, as Crosby (1979) points out, is it concludes that any product or outcome must conform to a common identified standard which can be measured against certain consistent quality criteria (Crosby 1979, quoted in Hill et al., 1996, 22). Indicators can also be used to make statements about the effectiveness of organisations or the impact of Programs (Owen, 2006, 254).

Indicators are a pivotal mechanism for quality assurance (Nakornthun, 1997, 118). They can be constructed and used for a variety of

purposes (Johnstone, 1981, 6-15). An indicator can overcome the problem of having to analyse massive amounts of information in order to obtain general answers to questions concerning development; thus, they have many uses:

1. the statement and development of policies in a more definite and coherent way;

2. the monitoring of changes in systems;

3. representing education system characteristics in research studies;

4. providing inputs for the development and use of indicators to facilitate the formation of a valid and reliable classification of education systems; and

5. commenting on the degree to which a particular goal is being achieved.

Ewell & Jones (1994, 28) provide criteria for assessing the adequacy of any posed set of effective policy indicators: *policy leverage*, addressing the extent to which any proposed indicator provides policy 'handles' for action to correct identified deficiencies and signals the fact that a deficiency is present; *vulnerability*, addressing the extent to which any proposed indicator is susceptible to manipulation without real changes having occurred in the properties or conditions it is designed to measure or reflect; *interpretability*, addressing the extent to which the proposed indicator is face valid, credible, and understandable to the lay audiences that will constitute its likely destination; *balance or perspective*, reflecting the degree to which any proposed indicators accurately embody the quite different perspectives and interests of multiple constituents, many of whom are outside the higher education community; *appropriate standards of comparison*, addressing the need to establish clear benchmarks of progress or success, based on peer performance over time, or established norms or 'best practice'; *technical adequacy*, covering the need for all indicators to be statistically valid and

reliable, but at least as importantly emphasizing their need to be statistically robust under typical policy conditions of missing or biased data; and *practicality*, addressing the requirement for useful indicators to be practical attainable at reasonable cost.

Porter (2003, 1-2) advises that education indicators, to be useful, must meet seven criteria, as follows:

- First and most important, indicators must be easily understood by a broad audience. Indicators are not intended primarily to serve the needs and interests of researchers, rather; they are created to serve the information needs of policymakers and the public

- Second, even though the education system is extraordinarily complex – with various layers, levels, and participants – the number of education indicators must be relatively few. Organizing indicators by the main features of the model can help.

- Third, indicators need to be stable over time, both in what is being mentioned and how it is being measured. Without stability of definition and measurement, looking at trends over time is not possible, but trends are exactly what are of most importance. Is achievement occurring over time? Is the system growing in terms of numbers of students served? Are costs per student decreasing?

- Fourth, indicators must be reported at a disaggregated level. In the United States, the main story about education is one of variability. For example, there is enormous variance between states in levels of student achievement. Some of the states achieve at levels comparable to the highest achieving countries in the world, other states achieve at levels comparable to the lowest achieving countries in the world. Variance is not only important for understanding student achievement, it is equally important for understanding inputs and school process.

- Fifth, education indicators must be accurate. There are two aspects of accuracy. One is an issue of measurement. For example, if an indicator is based on self-report questionnaire data, can self-reports be trusted to be valid? Sometimes the answer is yes and sometimes no. The second aspect of accuracy has to do with standards errors. When average student achievement is reported, for example, is it based on a sufficiently large sample that the number reported would have been likely to vary little, if at all, had a different sample been taken?

- Sixth, indicators must be timely. Timeliness is always a problem of statistics. For example, the National Assessment of Education Progress has assessed student achievement in mathematics no more often than every two years, and sometimes less frequently.

- Timeliness leads to the seventh characteristic of indicators: they must be affordable. Porter concludes there are tensions between the first six characteristics and affordability.

Porter concludes that since the United States invests only a tiny fraction of one per cent of its total education budget on education indicators, close attention needs to be paid to meeting these seven desirable characteristics of indicators.

Indicators have a far more specific and identifiable history in the European Literature of higher education management than they do in the United States context. They are termed 'performance indicators' and were introduced into European public higher education in the late 1970s (Dochy et al., 1990, quoted in Borden & Bottrill, 1994a, 10). They emerge largely from national governments' efforts to improve financial management via performance assessment.

Shavelson et al. (1991b), who have reviewed the literature of Jaeger (1978) on social indicators in 'What are Educational Indicators, and Indicator Systems?', suggest that Jaeger's overview about indicators is anything but

clear and consistent. Jaeger (1978) recommended that all variables which (1) represent the aggregate status or change in status of any group of persons, objects, institutions, or elements under study, and that (2) are essential to a report of status or change of status of the entities under study, should be termed 'indicators' (Shavelson et al., 1991b, 1-2). This is too vague. Scriven (1991) provides a more useful general definition of an indicator as being 'a factor, variable, or observation that is empirically connected with a criterion variable' (Scriven 1991, quoted in Boyle, 2003, 1).

Johnstone (1981, 2-5) concludes that there are five features of indicators that make them useful:

1. **Indicators make general comments**. Johnstone, in elucidating the nature of an indicator in the social sciences, sees an indicator as giving a broad indication of the state of the situation being investigated.

2. **Indicators are distinct from variables**. Johnstone points out that the things that indicate or give information are variables and are particular facets of their fields. An indicator can be constructed from the combination of these variables to form a general overview of the broad features of that aspect of the system being described. He also indicates that indicators should be defined in such a way that they do not require a single indicator for each of the main societal sub-systems: there may, in fact, be twenty to thirty indicators for education, for health, or for social security. Indicators therefore present a summarized picture of what a system is like so that a general overview is gained rather than a very specific and fragmented series of comments. The distinction between variables and indicators is of utmost importance for describing the characteristics, constructing approaches and using indicators in planning and research contexts.

3. **An indicator value expresses a quantity**. Johnstone identifies an indicator as something that is quantifiable. It is not a statement describing the state of a system; it is a number to be interpreted according to the rules governing its formation.

4. **Indicator values are temporal**. This feature of an indicator is that any one of its values applies to only one point or period in time. The interpretation of an indicator value is facilitated by referring to the values pertaining to systems for the specific time period.

5. **Indicators are basic units in theory development**. Johnstone indicates that another way in which to view an indicator is from the point of view of research work directed towards theory building.

Johnstone points out that in order to identify indicators, it is essential to construct a variety of properly developed indicators and to determine both their real and their contextual meanings. Indicators, however, must be related to one another so that their relationships and changes in these relationships provide an unbiased description of a situation; they need to be able to provide possible explanations for observed changes. With Johnstone's features of an indicator in mind, his types of indicators are discussed in the next section.

Types of Indicators

Indicators can be classified with respect to many different criteria. Some of these criteria reveal important distinctions in the ways indicators are used or could be used; others identify concepts underlying the different approaches to indicator construction. The forms of indicators appropriate in a given context are concerned with the extent to which the component variables contribute to their formation. The three main forms of education system indicators are representative indicators, disaggregated indicators, and composite indicators.

Representative indicators

A representative indicator is the most common form of education system indicator used for research, administrative and planning purposes. It involves the selection of a single variable to reflect some aspect of an education system. Choosing just one variable to act as an indicator system is an impossible task because an education system is a complex entity consisting of many different facets and these facets themselves are conceptually independent.

Disaggregated indicators

The second form of education system indicator is a disaggregated indicator. Instead of selecting only one variable to represent a concept, this type of indicator requires the definition of variables for every element or component of the education system space. Ideally, every defined variable should be independent of every other variable so that information is not duplicated throughout the indicator set. The final set should exhaust the definition of the space. The result of completing such as exercise is a very long, complex and confusing list of variables which is impossible to use effectively or efficiently. The compromise of dealing with only one part of the education system space raises questions of insufficiency that are difficult to answer. Thus, indicators chosen in this way do not allow proper description of an education system.

Composite indicators

The third form of education system indicator that is recommended as being the most justifiable type is the composite indicator. This indicator combines a number of educational variables and the final composite is interpreted as a kind of average of all variables entering into the combination. Definition and selection of a composite indicator to represent aspects of education systems admits to the complexity of such systems. Composite indicators can produce a single value for a particular system. They do not redefine the scope of the

characteristic being measured in such a way that a different sort of calculation is introduced.

Ferriss (1969) claims that the formation of a composite indicator produces something that is more general than the detail composing it. Ferriss's assertion implicitly acknowledges the fallacy of placing too much reliance on the information conveyed by a single variable. A number of related variables, however, can together describe a feature with a reasonable degree of exactness (Ferriss, 1969, quoted in Johnstone, 1981, 16-17). Ratzlaff (1965, quoted in Johnstone, 1981, 17)) confirms the view that a composite indicator has greater reliability than a single variable. He claims that a composite indicator allows for greater comparability through the process of interchangeability or substitutability of components of the index.

> This has particular relevance for the problem of missing data as well as the
> fact that different countries use several different techniques for measuring
> data of a comparative character.

On the basis of the foregoing, composite indicators chosen were selected as they possess the best features of both the single variable and the desegregation approach to indicator formation. Of particular value is that relatively few composite indicators are needed to define an education system; moreover, the benefits of simplicity of description and relative ease of comprehension, which make the representative approach so attractive, are retained. A further strength is that, by combining variables – particularly those that are conceptually alike – information from a broad span of the space is conveyed. Thus, a composite indicator has a similar impact to a disaggregated indicator but it is simpler and more economical to determine.

Considerations to make when constructing indicators

Johnstone (1981, 33-34) points out that most of the approaches to indicator formation address four major questions, as follows:

1. Which method of definition is to be adopted?

2. Which variables are to be used?

3. What method of combination is appropriate?

4. What weights are to be used?

Within the first of these decision areas, there are three broad methods of definition – a pragmatic definition, a theoretical definition, and an empirical definition.

Pragmatic definition

The pragmatic definition of an indicator occurs when a selection is made from a number of available variables or when a number of available variables are combined because of certain assumed relationships among them. The type of indicator formed is really a representative indicator. Because the combinations in pragmatic indicator formation are based purely on the judgment of an individual, they thus depend upon the attitudes of that individual in selecting one variable or attribute rather than another. Consequently, this is considered to constitute a very weak method of indicator formation.

Theoretical definition

The theoretical definition of indicators involves the arithmetical combination of a number of variables which have been defined, *a priori*, as being inter-related. Each of these variables has a numerical weight assigned to it, the values of which do not depend on the actual data being used. The choice of the particular variables to be combined may be based either on theoretical grounds or on an attempt to define a conceptual map that represents the development plan. The selection of variables and their weights requires extreme care and proper consideration. If this care and consideration are not forthcoming, not only will the numerical value of the indicator change but also the implication of the concept being measured and, quite possibly, the purpose for which the indicator is to be used.

Empirical definition

The empirical definition of an indicator can be viewed as being analogous to the theoretical definition procedure. Its distinguishing feature is that, instead of selecting weights in an *a priori* manner, weights are determined by analysing a set of data and identifying the strength of the functional relationships existing among the variables. In forming indicators by empirical means, a major problem exists in that the data, and not the underlying constructs, determine the character of the indicators. Such a bias can be avoided either by the careful selection of variables used, or by having sufficient cases across which the analysis is undertaken.

In any consideration regarding the construction of indicators, the pragmatic definition of an indicator should not be employed, since the variables to be used to characterize the indicator are chosen purely on the judgment of an individual. They thus depend upon the attitudes of that individual in selecting one variable or attribute rather than another. Because of such dependence, this method is considered to be a very weak method of index formation.

The empirical definition of an indicator is not yet wholly suitable despite the availability of empirical techniques such as factor analysis. The major problem with factor analysis is that the data, and not the underlying constructs, determine the character of the indicators. This would introduce a bias either by the selection of variables used or by the cases across which the analysis is performed. The other aspect of this methodological problem encountered when forming composite indicators by empirical definition is that the cases themselves can determine the values of the weights. Despite these two problems of variable and case selection, the empirical determination of weights does appear to offer the best promise for future indicator development; however, the essential theory development and replication remains to be undertaken.

The theoretical definition and development of indicators

As discussed earlier, one of the three main approaches to the development of indicators of education systems involves defining them theoretically. This approach can be undertaken in one of two ways. The first method involves identifying a set of variables in some *a priori* way and subsequently combining them to produce a single value of the indicator. The other method is to adopt an already existing indicator or formula which presently serves a particular purpose. Where 'purpose' can be incorporated as well, further benefits of the use of such indicators derive from the definition of this purpose. Regardless of the method adopted, when developing an indicator from a definition of a concept to be measured, three steps must be followed, as follows:

1. select the component variables;

2. determine the method of combination; and

3. define the weights to be applied to each variable.

Each of these will be discussed in the following sub-sections.

Selecting the component variables

The selection of the component variables to be combined to form a theoretically defined indicator can be effected in a variety of ways. To ensure that all relevant variables are considered when a selection is made to define and combine into an indicator, it is necessary firstly to develop a statement concerning the sorts of characteristics the indicator is to measure. This statement should be unambiguous and precise. Therefore, an expert consensus must decide exactly what characteristics of an education system are to be covered by a defined indicator. If a definition indicates that too many variables might have to be combined to form a single indicator, a very complex concept has to be measured. In such a situation, it is preferable to reduce this complexity so as to avoid confounding different aspects of the concept. If confounding occurs, interpretation is made more difficult. The

final definition must ensure that the defined indicator is directly and closely related to the total education system concept to be measured.

Determining the method of combination

The vast majority of theoretically defined indicators are formed by adding together the component variables. Addition is the method used for combining variables; an implicit assumption is made that any one variable can substitute or compensate for another. For example, an indicator (I) is formed from two component variables (V_1 and V_2) as follows:

$$I = V_1 + V_2$$

Defining the weights

The distinction between theoretically defining an indicator, rather than allowing empirical definition, is most marked when the problem of determining weights for the component variables arises. The definition of weights when developing indicators is essential because the selection of one set of weights, rather than another, can substantially change the results.

The most common approach used to select weights is to define all component variables as being equal in value and importance; hence, each variable is assigned unit weight and no weighting problem exists. An alternative to this approach is to use differential weights for the variables. In this case, planners and researchers nominate their own values for the weights – with or without justification. Harbison & Myers (1964) used this approach in formulating their composite index by selecting weights of 1 and 5 to apply respectively to second- and third-level enrolment ratios (Harbison & Myers, 1964, quoted in Johnstone, 1981, 76, 81). Alternatively, expert judgment can also be used to determine weights. This is a simple method that involves estimating the percentage response to particular categories in a questionnaire. Dalkey & Rourke (1971) provide an example of such an approach by using a Delphi technique to survey responses from a deliberately selected group of

respondents and refining weights used to develop an indicator (Dalkey & Rourke, 1971, quoted in Johnstone, 1981, 76).

Johnstone (1981, 24-26) employed a framework for the development of indicators of educational systems based on three distinct sub-divisions, namely, input, process, and output. They are considered to be quite distinct yet together they form a basis for a complete definition of the system. Researchers subsequently applying these indicators within educational systems include the National Science Foundation (Shavelson, McDonnell and Oakes, 1991a, 1), Srisatidnarakul (2000), and Srisuk (2002). Cheng & Tam (1997, 22) report that the lack of a system of educational standards and indicators for directing practices and monitoring performance might produce public doubt.

A framework for defining education system indicators

In order to construct and use education system indicators, a framework of reference has to be established. Without such a basis, the type of indicators needed in particular situations might not be consistently identified. Nor could the conceptually distinct concerns of education system indicators be validly differentiated.

Johnstone (1981, 25-26) has established a framework for the development of indicators of education systems. This framework, shown in Figure 2.7, has four implications for the definition of education system indicators and the estimation of values for these indicators. One implication is that no single indicator could or should be estimated to represent education systems. Indicators must also be composite in nature. The framework therefore implies that aggregate of either variables or indicators must not continue so far as to form a single broad education system indicator. A second implication is that indicators of education systems comment on particular concerns which are conceptually, and often practically, distinct.

FIGURE 2.7   A FRAMEWORK FOR THE DEVELOPMENT OF INDICATORS OF EDUCATION SYSTEMS
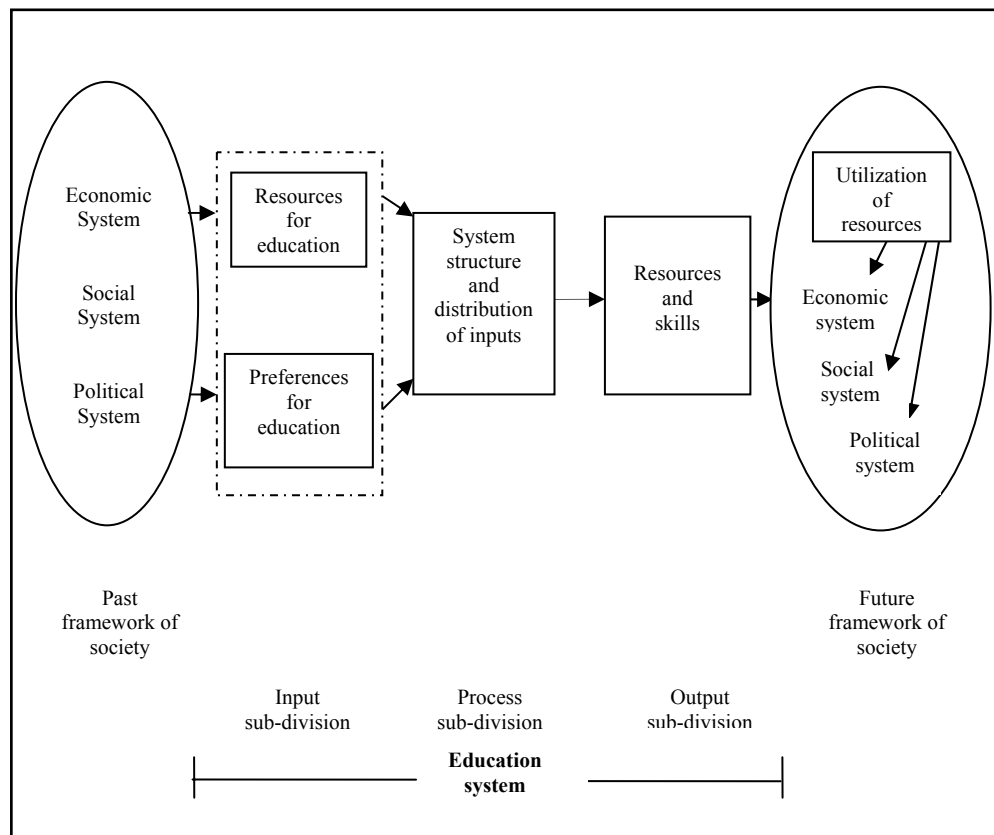
After Johnstone (1981)

They should not measure only learning outcomes: hence, focusing solely on academic levels to plan or evaluate the performance of an education system takes far too narrow a view. A third implication is that some of the data required to construct indicators cannot be collected as part of the normal education procedures. Many data will instead have to be collected via survey methods, although such procedures are most unusual in the educational context. A fourth implication of the framework relates to the focus of possible theory development. As a theory of an education system is developed, it will describe and predict the way in which a system evolves. Such a theory will help administrators and planners identify particular types of decisions which might facilitate the making of desired system changed in more efficient and effective ways. The theory of education system would also describe and predict the impact of the provision and development of an

education system on the other sub-systems of society. Empirical testing therefore needs to be attempted through the development of indicators to determine if this assertion is plausible (Johnstone, 1981, 24-33).

Johnstone's (1981, 25) framework provides the education system with a way to bridge the gap between a past and a future frame of society. This education system comprises three distinct sub-divisions which are necessary and sufficient to form the framework required. These are termed the input, process and output sub-divisions. This model is explicitly based on definitions found within systems analysis theory and its adoption follows the recommendations of writers such as Coombs (1968), Lave & Kyle (1968), Adams (1970), and Kartomo & Heckelman (1971).

In the framework, the input sub-division comprises resources and preferences for education. Resources for education are the proportion of the relevant physical resources, such as manpower and finance, that is devoted to providing the system of education. Preferences for education reflect the preparedness of a society to devote resources to education as well as the perceptions held by the society regarding the provision of an education system and the aspirations held for such provision. The process sub-division implied here is the structure of the system which processes the inputs to become the outputs. The output sub-division is the perception, by a society, of the results of the education system functioning. There are two distinct considerations within the output sub-division of the education system space: the resources and skills from the education system, and satisfaction with the education system, itself.

Johnstone (1981) takes the position that the concept of an indicator can overcome the problem of having to analyse massive amounts of information in order to obtain general answers to the questions concerning development. He also points out that indicators can be constructed and used for a variety of purposes.

Johnstone's (1981) theoretical definition of an indicator was adapted for the development of the indicators of the education system – a Masters Degree program of Educational Administration in Thailand – that were developed as part of this research. At the same time, a composite indicator was the form selected, as it represents aspects of the education systems, admits to the complexity of such systems, and possesses the best features of both the single variable and the disaggregating approaches to indicator formation.

As any one variable that might be created by experts can substitute or compensate for another, an additional method in the selection of weights was used for combining variables into the composite indicators. After the composite indicators were initially constructed, a Delphi survey was carried out to establish the composite indicators in this research. The Delphi survey technique has been accepted – by the vast majority of researchers who have applied and studied it – as a reliable method of obtaining a consensus view on a topic: in this case, the establishment of indicators and best practice elements.

Finally, the utility and usability of indicators in measurement process must be tested for validity, appropriateness and practicality (Wiratchai & Wongwanich, 1988, 59). In this research, systematically synthesizing and contrasting information from a variety of sources allowed the usefulness of indicators to be assessed and laid the groundwork for developing and implementing new indicators.

Monitoring the Proactive Evaluation component of this research involved the collection of data, based upon identified indicators and success criteria. Inferences were drawn and actions undertaken based upon these data. Data were collected – both formally and informally – by questionnaire, interview, observation, or from already available documentation such as internal evaluation or committee reports. The precise way in which the monitoring and evaluation was carried out varied according to the nature of

the indicators and context in which the investigation was carried out. The Johnstone (1981) framework was applied to develop the indicators for the educational system involved in this educational planning activity. Subsequently, this framework may be varied, depending on the program being considered; inevitably, it will change and develop with time.

Summary

Quality assurance and quality management is important both to monitor performance and to ensure continued enrolment in courses of educational administration. Before quality assurance and productivity elements can be established, it thus is necessary to undertake a review of the best practice in order to establish composite indicators and best practices that will act as quality assurance benchmarks.

Proactive Evaluation is appropriately applied in this study. First, it is a 'nothing to something' situation where the aim of the evaluation was to provide findings to aid decision-making about a new program. Second, there are pre-existing programs, but these require major review. There is the likelihood that this research would bring about radical changes in the existing programs that were seen to be out of date or not serving the needs of those for whom it was intended – or even to see them replaced by a new and more appropriate program.

Proactive Evaluation provides information in order to assist decisions about a future or projected program as it is concerned with the extent of the need among a defined population for a program in a given area of provision. It aims to synthesise what is known in the existing research and related literature about an identified issue or problem, and critically review ways in which an identified issue or problem has been mounted in other locations.

A Delphi study has been selected as the principal research technique. First, by using a Delphi survey, individual panellists are able to focus on rating, revising, and commenting on the criteria presented without the

distractions normally associated with more traditional face-to-face meetings. Second, it allows a statistical description of the participants' responses. Third, it enables a study that effectively could achieve its purposes within a reasonable time frame at a moderate cost and with minimal inconvenience to the participants.

Johnstone's (1981) theoretical definition of an indicator will be also employed in the development of indicators. A composite indicator is the form of indicator selected as it represents aspects of the education system under study, admits to the complexity of systems, and possesses the best

FIGURE 2.8   THE PROGRAM SYSTEM EFFECTS
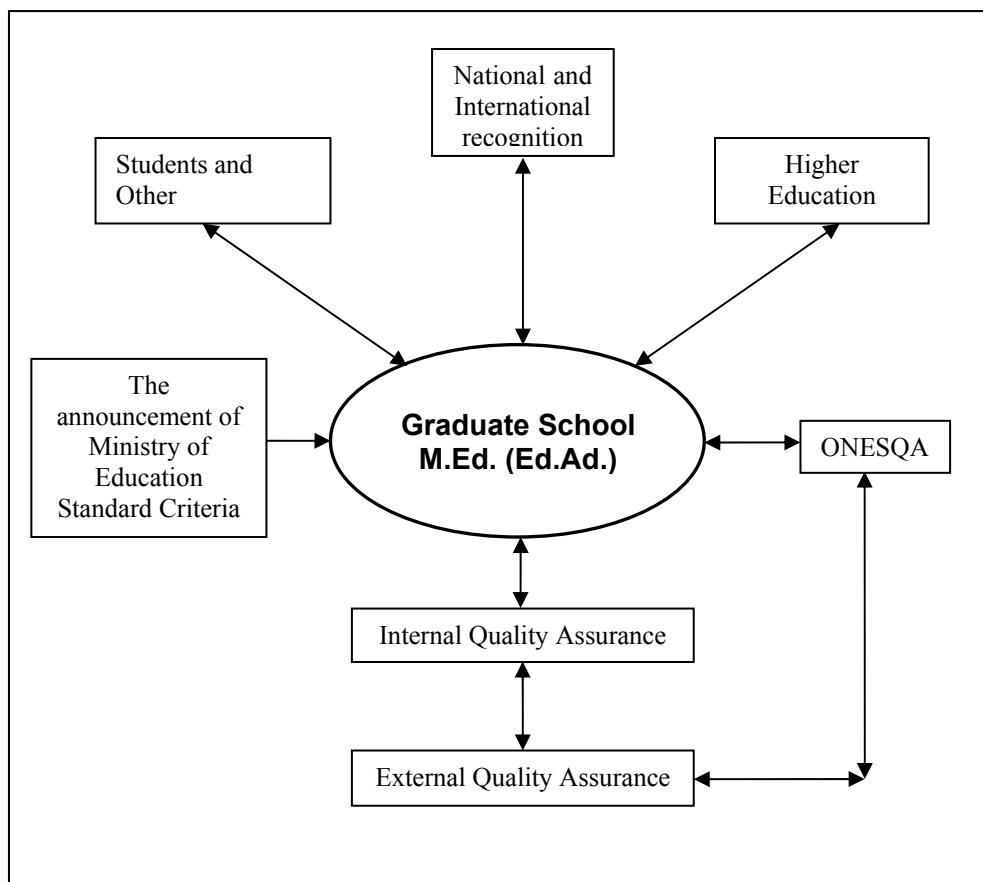
features of both a single variable and disaggregating approaches to indicator formation (Johnstone, 1981, 16-17). This form of indicator combines a number of educational variables and the final composite is thus interpreted as a 'kind of average' of all variables entering into the combination.

In addition, the program system's effects on the systems of society in this study takes into consideration the following: students and other stakeholders; international recognition; the announcement of the Ministry of Education Standard Criteria of Graduate Programs of 2005; requirements of the Thai Higher Education Commission, and the Office for National Education Standards and Quality Assessment (ONESQA), as shown in Figure 2.8, above.

Full details of the methodology employed in the study are provided in the next chapter.

CHAPTER 3

Methodology of the Study

Introduction

The objective of this study is to investigate the key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice. The study seeks to establish a practical set of best practice and composite indicators for quality management of a Masters Degree Program in Educational Administration in private higher education institutions in Thailand. To do this, the research methodology is based on the Proactive Form of Evaluation of Owen, with Rogers (1999) and Owen (2006).

The research questions that were determined in order to clarify a conceptual framework for the study were as follows:

1. What are the key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice?

2. What are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration?

3. What is recognized as the best practice for educational quality management for Masters Degree Program in Educational

Administration in private higher education institutions in Thailand?

The primary aim of the research was to undertake a review of best practice to establish composite indicators to act as quality assurance benchmarks in order to produce quality assurance and productivity elements in courses of educational administration. This study was exploratory and a mix of qualitative and quantitative data collection methods was employed.

The methodology for the study, based on the Proactive Form of Evaluation (Owen, with Rogers, 1999; Owen, 2006), focused on establishing benchmarks and matching these benchmarks to practical needs. Proactive Evaluation was appropriately applied. First, it was a 'nothing to something' situation where the aim of the evaluation was to provide findings to aid decision-making about a new program. Second, there were pre-existing programs, but these required major review. There was the likelihood that this research would bring about radical changes in the existing program that was seen to be out of date or not serving the needs of those for whom it was intended – or even to see them replaced by a new and more appropriate program.

In this study, best practice and composite indicators for a new Masters Degree program in Educational Administration in private higher education institutions in Thailand were established. There were three phases: one, a literature review, to determine what indicators of best practice in educational administration programs currently exist in universities; two, a Delphi survey to establish what are regarded as the best practice and composite indicators, i.e., a set of theoretical benchmarks; and three, to assess how well these theoretical benchmarks meet the needs of tertiary teachers of educational administration.

Three Phases of Methodology of the Study

The methodology applied in this research consisted of three phases: a Research Review; a Delphi Survey; a second survey followed by a set of semi-structured Interviews.

Phase 1: Research Review

In this phase, the researcher reviewed the research literature in order to create items for the first round Delphi survey.

Development of composite indicators and their variables

Initially, it was necessary to develop statements concerning the characteristics that the indicator was to measure as part of the Delphi approach in the Proactive Evaluation form of Owen, with Rogers (1999, 179-180), and in constructing indicators according to the approach of Johnstone (1981). These statements needed to be unambiguous and precise.

Specifically, the researcher undertook a focused review of the research literature on best practice and composite indicators in Educational Administration courses and related literatures, especially the Malcolm Baldrige National Quality Award (2005) which is the highest level of national recognition for quality that a United Stated organisation can achieve. These surveys may be found in Chapter 2.

Core values, once set, may be used to ground a given evaluation (Stufflebeam, 2003, 5). The researcher thus employed the Core Values and Concepts established by Baldrige (2005) in order, initially, to establish best practice characteristics for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand. The Baldrige characteristics are embedded beliefs and behaviours found in high-performing education organisations and are the foundation for integrating key requirements within a results-oriented framework that created a basis for action and feedback. They are based on

four characteristics used to establish best practice and composite indicators, namely:

1. Visionary leadership;

2. Learning-centred education;

3. Organisational and personal learning; and

4. Valuing faculty, staff, and partners.

The researcher also created sets of variables that were grouped as input, process and output systems according to each composite indicator found in the Baldrige characteristics.

In this way, a set of composite indicators and their variables was developed to seeking for experts' opinions in terms of 'utility' and 'usability' aspects for the first Delphi questionnaire that was used in Phase 2. The development of these indicators and variables relates directly to Research Question 1: **What are the key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice?**

Data Collection and Analysis

In this phase, the researcher established a set of initial best practice and composite indicators and these were approved by the researcher's supervisor. It took approximately sixteen months to amend the questions to suit the research and to render them appropriately to suit the group of participants.

The interview questions were translated into Thai and approved by the researcher's co-supervisor. The first-round questionnaire contained each item expressed in both English and Thai in order to ensure a mutual understanding of the concepts. The items for the second- and third-round questionnaires were written in Thai language, alone. Before sending out the first questionnaire, the questionnaire items were validated by four questionnaire validation experts working in higher education: three from Thai universities; and one from the Office for National Education Standards

and Quality Assessment. They were approached for comments and suggestions to improve the questionnaire items and procedures for collecting data. The suggestions of these experts resulted in some changes in the connotation and in the probing nature of the items. Following this review, the questionnaire was redesigned. Space was provided after and beside each item for the convenience of the respondents to fill in their comments and reasons after their ratings.

The questionnaire was then completed by two university lecturers to test the questionnaire for clarity of instructions and ease of response. Adjustments were made to the draft which was then finally approved by the researcher's supervisor. The first-round pencil-and-paper questionnaire in English with Thai translation was then deemed ready for distribution. Copies of all questionnaires used in this study are included in Appendix Q; the results and analysis of data are contained in Appendix A.

Phase 2: Delphi Survey

The major procedure of this study consisted of a three-round Delphi survey – a modified Delphi survey – which involved surveying nineteen experts active in the field of educational administration at the tertiary level in Thailand. Linstone & Turoff (2002, 223) suggest that three rounds are sufficient to attain stability in the responses. This method was carried out to establish best practice and composite indicators for educational quality management for Masters Degree Program in Educational Administration.

A Delphi survey is a method of combining the judgments of knowledgeable individuals. It is relevant when there are no determinate answers (e.g., hard data or well established theory) available, but where there are some persons (often called experts) who have relevant information about the topic of concern. It is especially pertinent in the common case of disagreement among experts. It is also a procedure for aggregating the

information known to the panel. The resultant group judgement is no better than the composite information within the group (Dalkey, 2005, 1).

> Linstone & Turoff (2002, 3) define a Delphi survey as
>
> a method for structuring a group communication process so that its process is effective in allowing a group of individuals as a whole, to deal with a complex problem.

Gordon (1994, 1) points out that the Delphi method was designed to encourage a true debate, independent of personalities. Anonymity is required in the sense that no one knows who else is participating. Further, to eliminate the force of oratory and pedagogy, the reasons given for extreme opinions are synthesised by the researcher to give them all equal 'weight' and then fed back to the group as a whole for further analysis. These aspects – anonymity and feedback – represent the two irreducible elements of the Delphi method. A Delphi survey was used in this study to establish a consensus opinion of a panel listing of best practice and composite indicators for educational quality management for Masters Degree Program in Educational Administration using repeated rounds of a questionnaire.

The Delphi survey used in this study was a modified Delphi method consisting of three rounds; the timescale to accomplish it was from 1 August 2004 to 28 February 2005. After each round of the questionnaire, the responses were analysed and summarized and then presented to the participants for further consideration; hence, from the second round onwards, the participants were given feedback on their prior estimates; this process continued into the third round. Consensus was established through group analysis.

In this study an accessible analytical approach was outlined using presentation of median and interquartile ranges to identify what happened in the first round. The group's medians scores for each item were used to represent the group opinion; these measures were used to construct criteria on which the researcher based his judgments. In all three rounds of the

Delphi survey, the researcher received one hundred per cent return from the panel of experts. Copies of the questionnaires used in these three rounds may be found in Appendix Q.

In each round of the Delphi survey, each respondent was surveyed, and asked in a pencil-and-paper questionnaire, to rank in importance, on a scale of 1-10, the best practice statements and composite indicators obtained in Phase 1. A total of three rounds was undertaken with a view to obtaining consensus on the importance of the rankings. The outcome was a rank-ordered listing of best practice and composite indicators for educational quality management for Masters Degree Program in Educational Administration (relates to Research Question 2). The development of these rank ordered listings relate directly to Research Question 2: **What are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration?**

Step 1: Selection of Expert Panel 1

In this phase a panel, consisting of recognized Thai expert persons purposively selected, were involved in a three-round paper-and-pencil Delphi survey in order to rank order, with reasons, composite items obtained in Phase 1.

The 19 experts selected matched the recommendations of early researchers in the field (see, for example, Dalkey et al. (1969), Macmillan (1971) and Crance (1987). Specifically, Macmillan (1971, quoted in Boon-on 1979, 28) recommended that the optimal size for a Delphi panel should be more than 17 in order to improve the reliability improved and to decrease the range of error.

The experts, purposively selected, were chosen according to the following criteria:

1. Persons who hold an administrative position such as: the president, the vice president for academic affair, the deputy vice

president for academic affair, the dean, the director, and chief of this major field in the departments or faculties of state and/or private universities in Thailand.

2. Persons who are in charge to control or develop Master of Education Degrees in Educational Administration program in private universities.

3. Experts who have been directors of Master of Education Degree-Major Educational Administration program or other position that is equivalent.

4. Experts who have taught any course in Master of Education-Major Educational Administration Program for at least five years.

5. Experts who hold the academic position of at least associate professor who have published educational administration research papers, or who have developed measurement indicators for internal or external quality assurance measurement, and/or for higher education quality assurance.

Purposive sampling was used to select the panel of experts for this study. Two acknowledged experts in the field were invited to suggest the names of the persons who should constitute the Delphi panel, according to the selection criteria.

Following the selection process, the researcher made an appointment each of the 19 experts, and called them by telephone in order to provide details of the proposal and to invite them to participate in the Delphi survey as part of this research study. After talking with each, all consented to participate.

Step 2: Delphi survey of Expert Panel 1

In this step, the 19 members of expert panel were surveyed by mail, and asked in a pencil-and-paper questionnaire to rank in importance, on a scale of

1-10, composite indicators and their variables obtained in Phase 1, and to give their opinions for their rankings.

The returns of the first round questionnaires were analysed and evaluated by applying descriptive statistics using Microsoft SPSS v.11 software. As the questionnaire used a rating score format, a measure of central tendency gave the researcher a single score that represented the general magnitude of scores in the distribution. This score characterized that distribution by providing a score at or near its middle.

As a consequence, the median – or middle response – was used to interpret the data. Gordon (1994, 8) points out that a group judgment should be based on the median rather the mean, since single extreme answers can pull the mean unrealistically. The median is less sensitive to the distribution of scores than the mean, and is preferred when the distribution is skewed or the distribution contains serious outliers (Bordens & Abbott, 1999, 333) as the interquartile range is less sensitive than the whole range to the effects of extreme scores; the median (the second quartile) is the middle score in an ordered distribution. Thus, the median of the responses to each item was chosen as the measure of central tendency.

The second questionnaire was prepared after the first responses had been analysed and evaluated. The list of items, which was the same as the that used in the first questionnaire, included the results of round 1, the median score for each item and the opinions for the rankings. To this list were added the two items developed from the suggestions made by the experts. The whole comprised the pencil-and-paper questionnaire for the second round. The second round of the Delphi survey was undertaken with the same 19 members of expert panel 1 surveyed in the first round.

For the second round, each respondent was asked to reconsider and review their previous responses. At the same time, panel experts whose new rating was outside the group median score were asked to give reasons for their particular rating of that item. As Beech (1999, 284) points out, this

technique can convey an extra dimension missing from standard surveys. The responses to the second questionnaire were analysed using Microsoft SPSS v.11 software, and evaluated.

The medians and quartiles (the fourth quartile, the third quartile, and the first quartile) for each item were determined. The statistical criteria applied to Delphi surveys by Dalkey et al. (1969, 16) and Jillson (1974, 133) were used to condense the raw data into five classes. The class interval was determined by using the formula shown in Figure 3.1. The class range and the rank classifications are shown in Table 3.1.

The utility and usability mean scores were used to categorize objectives as shown in Table 3.2. Consistent with the methods employed by Barela & Eisenberg (2002, 6), an item-by-item consensus was identified if 50 per cent of respondents chose the same response.

The sequential rounds of voting had the advantage of sharpening respondent awareness and determining content validity (Whiting 1994, quoted in Beech, 1999, 284). Thus, when the third questionnaire was prepared, each item was ordered, highest to lowest, according to the utility aspect of the second round questionnaire group median scores; as well, a summary of responses to the first and second round questionnaires was attached.

FIGURE 3.1   FORMULA FOR CALCULATING CLASS INTERVAL

$$\text{Class interval, } i \;=\; \frac{\text{Highest - Lowest Value}}{\text{Number of Classes}}$$

$$i \;=\; \frac{10\text{-}1}{5}$$

$$=\; 1.8$$

TABLE 3.1　　CLASS RANGE AND RANK CLASSIFICATION

Class	Rank classification
8.21 – 10.00	Highest
6.41 – 8.20	High
4.61 – 6.40	Medium
2.81 – 4.60	Low
1.00 – 2.80	Lowest

TABLE 3.2　　MEAN SCORES FOR UTILITY/USABILITY

Mean Group Score	Utility/Usability
8.21 – 10.00	Very Important
6.41 – 8.20	Important
4.61 – 6.40	Moderately Important
2.81 – 4.60	Unimportant
1.00 – 2.80	Most Unimportant

The responses to the third questionnaire were also analysed using Microsoft SPSS v.11 software, and evaluated. The median and quartiles (the fourth, third and first quartiles), together with the mean and the aggregate score for each item from the third responses were determined and the items ranked in order of importance, from highest to lowest, according to their mean scores. The mean takes into account the spread of opinions, while the median is the middle value of opinions; the mean is affected by all opinions some of which may be extreme. Thus, when a group of items had the same median, they were ordered on the basis of their means – from highest to lowest. The composite indicators and their variables that had mean scores above 6.40 on the utility aspect were selected. According to Johnstone (1981), this is a reliable method for combining variables amongst the composite indicators. It was possible, therefore, to construct a set of composite indicators and their variables for educational quality management for a Masters Degrees Program in Educational Administration in private

higher education institutions in Thailand; and also, by analysing the aggregate scores, to determine the weighted scores for each of the selected items.

Phase 3: Second Survey and Semi-structured Interviews

A second expert panel participated in this phase to rank in importance, on a scale of 1-10, the best practice statements and composite indicators obtained at the end of Phase 2, and to give their reasons for their rankings. Following this survey, six participants participated in individual, semi-structured interviews, to elaborate on their reasons for selecting the best practice and composite indicators in the second survey. The best practice and composite indicators for quality management in Masters courses in Educational Administration in Private Higher Education Institutions in Thailand were established.

Step 1: Selection of Panel 2

Thirty-four private higher education institution administrators and instructors in graduate schools of Educational Administration and related fields at private higher education institutions in Thailand were invited by letter to participate in this single round survey. This group comprised Panel 2. The survey was designed to test the practicality of the composite indicators and their variables that were constructed by the Delphi method as part of Phase 2.

Step 2: Survey of Panel 2

In this step, Panel 2 was surveyed by mail, and asked in the fourth pencil-and-paper questionnaire, to rank in importance, on a scale of 1-10, the composite indicators and their variables and to give the reasons for rankings. Space was also provided after and beside each item for the convenience of the respondents to fill in their comments after their ratings and for them to give reasons for their rankings.

The rank-ordered listing of utility of items obtained from the third round questionnaire responses were used in Phase 3. The third round questionnaire ended the Delphi survey for this research, because consensus among the group of panel experts had been reached: a majority of respondents had adjusted their responses within the criteria, and three mailings are sufficient in order to arrive at consensus (Brooks 1979, quoted in Custer et al., 1999, 2). Three rounds proved sufficient to attain 'stability in the responses' (Turoff & Linstone, 2002, 223).

The refined data obtained from the fourth questionnaire involved statistical treatment and were computed using Microsoft SPSS v.11 software. The median and quartiles (the fourth, third, and first quartiles), the mean, and the aggregate score for each item of the fourth questionnaire responses were determined and the items ranked in order of importance, from highest to lowest, according to their median scores. Those items with the same median score were ranked according to their mean score, as before. Details of the analysis of all data obtained in this step are contained in Appendix A, Tables A1-A7.

Step 3: Semi-structured interviews

In this step, six participants from the second survey, who had been selected at random, were invited to participate in individual, semi-structured interviews in order to give their recommendations, and to elaborate on and reconsider their reasons for selecting the composite indicators and their variables. Prior to the interviews, they were given a statistical analysis of responses to the fourth questionnaire; a summary of these responses may be found in Appendix A, Tables A8-A10. The six participants in Phase 3, Step 3 of the study, were represented by a president, an assistant president, and directors and deans of six Thai universities and colleges.

The respondents' median and mean scores ratings of items on the fourth questionnaire – relating to the utility and usability aspects each item –

TABLE 3.3   MEAN SCORES FOR UTILITY AND USABILITY CATEGORIES

Mean Group Score	Utility/Usability
8.21 – 10.00	Highly desirable/Highly feasible
6.41 – 8.20	Desirable/Feasible
4.61 – 6.40	Neither desirable nor undesirable/May or may not be feasible
2.81 – 4.60	Undesirable/Probably unfeasible
1.00 – 2.80	Highly undesirable/Definitely unfeasible

treated nominal scales as interval data. The items were sorted on the basis of their desirability, from highest to lowest mean score, and treated in the same way as for the third questionnaire. The composite indicators and their variables that had a utility and/or usability group mean score above 8.20 were selected for generating the set of best practice statements.

The composite indicators for quality management in Masters courses in Educational Management in Private Higher Education Institutions in Thailand were established as those items for which the utility and/or usability aspect group mean scores were above 6.40. These group score criteria were also based on an application of Dalkey et al. (1969) and Jillson (1974, in Turoff & Linstone, 2002). The utility and usability aspects group mean scores, together with their categorisation are listed in Table 3.3.

Summary

In this chapter, the researcher has provided a discussion of the research methodologies used in this study. The researcher used questionnaires and interviews to conduct the three phases of the research. The researcher has provided information about the sample population of each of the phases. The development of the instruments for each phase has been described, as have

FIGURE 3.2   **PHASES AND STEPS**

Phase 1: Research Review
Step 1: Analysis of research related to composite indicators and their variables
Step 2: Questionnaire developed for Delphi survey
Phase 2: Delphi Survey
Step 1: Selection of First Expert panel (N=19)
Step 2: Delphi survey of First Expert panel (A three-round paper-and-pencil Delphi survey)
Best practice composite indicators established
Phase 3: Survey and Semi-structured Interviews
Step 1: Selection of Second Panel (N=34)
Step 2: Survey of Second Expert panel (A single-round paper-and-pencil survey)
Step 3: Semi-structured interviews (N=6)
The best composite indicators tested for practicality

the qualitative and quantitative surveys employed in analysing the data. Figure 3.2 illustrates the interrelations of the three phases of the study: one, a Research Review; two, a Delphi Survey; three, a second survey followed by a set of semi-structured Interviews in order to clarify the first, second and third questionnaires; four, paper-and-pencil questionnaire for establishing the best practice and composite indicators for quality management in Masters Degree Program in Educational Administration in private higher education institutions in Thailand.

In the next chapter, the findings of the first of these three phases will be analysed and discussed.

CHAPTER 4

Analysis of Data and Report on the Findings: Delphi Survey

Introduction

As noted in Chapter 3, a set of composite indicators and their variables was developed for the first Delphi questionnaire. The development of these indicators and variables related directly to Research Question 1: **What are the key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice?** A Delphi survey was used to establish a consensus opinion of a panel listing of composite indicators for educational quality management for Masters Degree Program in Educational Administration. The development of these listings related directly to Research Question 2: **What are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration?**

The methodology for the study was based on a Proactive Form of Evaluation (Owen, with Rogers, 1999; Owen, 2006). The approaches used were two-fold: the first, a Research Review, focused on establishing composite indicators and their indicators relating to best practice; the second, on establishing benchmarks by means of a Delphi survey, and matching these benchmarks to practical needs. Finally, in the final phase of the research, a second expert panel consisting of thirty-four tertiary administrators and lecturers involved in the teaching of Educational Administration and related

fields in private higher education institutions in Thailand was involved in a single-round paper-and-pencil survey designed to establish by consensus the practicality of a listing of composite indicators and their variables and the best practice for masters courses in this field. Semi-structured interviews of six participants in this phase undertook to seek elaboration of the underlying reasons for the selection of these particular composite indicators and best practice statements.

The outcomes of the Research Review and the responses to the three-round Delphi survey are presented and analysed in this chapter.

Research Review

Consistent with the three phases of the study, the researcher initially developed statements concerning the characteristics that the indicators were to measure as part of the Delphi study approach in the Proactive Evaluation form of Owen, with Rogers (1999), as well as constructing indicators according to the approach of Johnstone (1981). The researcher thus undertook a focused review of the research literature (included in Chapter 2, as part of the Literature Review) on best practice and composite indicators in Educational Administration courses and related literatures using computer-based search engines to access books and journals for Phase 1 in order to identify key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice as currently existing in Western Universities. These produced an initial set of best practice statements and composite indicators for Thailand that were used in Phase 2.

Composite indicators and their variables

Quality assurance

The purpose of the review was to synthesise literature relevant to quality assurance and quality management in courses of educational administration

in private higher education institutions in Thailand. The review revealed that quality assurance is a process of evaluating overall program performance on a regular basis to ensure that the program satisfies relevant quality standards. Here, the researcher defines 'quality' as 'fitness for standards that are accepted'. Two quality management aspects were addressed: the first, how to deliver a quality program that will be to the stakeholders' satisfaction; the second, how to provide quality academic units. From these starting points, the researcher concluded that a program must have a well-defined mission and that the delivery of appropriate goals and objectives is assured. The developers of each unit, therefore, will have the responsibility for developing their own quality assurance mechanism in order to meet the requirements of the related quality standard.

A quality assurance system is a tool to improve the quality of educational management. The review revealed that the most crucial quality assurance mechanisms are the programs themselves. The programs lead to choices being made based on a number of criteria, as follows:

- to adopt or develop a quality assurance system suitable to the program's own contexts while ensuring that accountability and transparency are maintained;

- that the administration include planning, controlling, monitoring, assessment and constant review for improvement in order to provide appropriateness and quality of courses;

- curriculum, teaching methods and facilities for helping students to learn how to learn;

- appropriateness and quality of research and faculty members' development to underpin quality in teaching-learning;

- accommodation, facilities, resource deployment, administrative processes and support structures that serve the program and its students adequately.

Best practice

The research review illustrated that Proactive Evaluation of Owen, with Rogers (1999, 41) can, indeed,

> assist program planners to make decisions about what type of program is needed by providing input to decisions about how best to develop a program in advance of the planning stage.

It places the evaluator as an adviser, providing evidence about what is known about policy development, what format is needed for the program, or how an organisation may be changed to make it more effective on the basis of policy and program developers are informed by the best and appropriate evidence about the problem to be addressed. A review of the best practice approach outlined in the Proactive Form of Evaluation (Owen, with Rogers, 1999) was of benefit in provided a framework for establishing composite indicators that act as quality assurance benchmarks.

Benchmarking

Sharp (1994, quoted in Owen, with Rogers, 1999, 178) defines benchmarking as

> a systematic and continuous process of measuring and comparing an organisation's business processes against those of leaders anywhere in the world, to gain information which will help drive continuous improvement.

Benchmarking involves systematic processes which involve searching for, introducing, and implementing best practice. Evans (1994) suggests that the search may focus on any of the major types of evaluands: organisations, policies, programs, services or products (Evans, 1994, quoted in Owen, with Rogers, 1999, 179). The quest to establish benchmarks in this approach is consistent with the 'evaluation for development' perspective of Proactive Evaluation. The review revealed that the establishment of benchmarks could involve an organisation in the following: the targeted identification of best practice, and a consideration of whether this practice applies to the

organisation; a thorough, sustained program of external analysis and investigation; and the ability to reduce the findings of best practices to indicators which are meaningful as a management tool within organisation (Owen, with Rogers 1999, 180). These are the contextual elements revealed in the Research Review and within which the further investigation was carried out.

Malcolm Baldrige National Quality Award Program

The Malcolm Baldrige National Quality Award Program (MBNQA) – discussed extensively in Chapter 2 – was selected for the creation of the key requirements for the development of an effective Masters Degree Program in Educational Administration that would ensure best practice. The MBNQA has proven itself in education, as well as in other human-based industries, to provide an effective roadmap through complex and challenging conditions by employing a structured approach to performance excellence. It has played a major role in achieving the goals established by United States Congress and is accepted widely, not only in the United States but world-wide, as providing a standard of performance excellence. It is used by thousands of organisations of all kinds for self-assessment and training and as a tool to develop performance and business processes. Several million copies have been distributed since the first edition in 1988; heavy reproduction and electronic access multiply that number many times (Baldrige (c), 2005, 5).

The MBNQA thus serves as a role model of performance excellence. It can assist the personnel responsible for programs in assessing their improvement efforts, diagnosing their overall performance management systems, and identifying their strengths and opportunities for improvement. It provides: awareness of quality as an increasingly important element of competitiveness; understanding of the requirements for quality excellence; sharing of information on successful quality strategies and the benefits derived from implementation of these strategies.

To broaden the review findings, the researcher applied Doherty's (1994, 17) findings concerning the criterion statements of Sallis et al. (1992) related to the MBNQA 2005 *Educational Criteria for Performance Excellence to Programs* to this study for establishing the key requirements for the development of an effective Masters Degree Program in Educational Administration. Those criteria were:

1. Leadership is essential in an institution. Visionary leadership addresses how senior leaders guide and sustain institutions, setting organisational vision, values, and performance expectation. Attention is given to how senior leaders, and create a learning environment that encourage ethical behaviour and high performance. It also includes an organisation's governance system, its legal and ethical responsibilities to the public, and how the organisation supports its community.

2. The customers' and stakeholders' expectations and standards are most important.

3. Learning-centred education is a strategic view of education. There is a need to afford opportunities to the drivers of student learning, student persistence, student and stakeholder satisfaction, new markets, and market share – key factors in educational success. Learning-centred education focuses on the real needs of students, including those derived from market requirements and citizenship responsibilities.

4. Organisational performance improvement contributes to short- and long-term productivity growth and cost containment.

5. Organisational and personal learning are necessary considerations in today's fast-paced environment. Improvement and learning need to be embedded in work processes.

6. Teamwork is essential.

7. Faculty needs to address key human resource practices – those directed toward creating and maintaining a high-performance workplace with a strong focus on students and learning and developing faculty to enable them and the organisation to adapt to change.

8. Personnel appraisal is essential for development.

9. Recognition of good performance by individuals or teams is needed.

10. Creating an environment to encourage creativity and innovation is crucial.

11. Personnel and organisation participation and commitment are essential.

12. Best practice and benchmarking are needed to underpin the system.

The researcher, therefore, employed four Core Values of the Baldrige's characteristics that are embedded beliefs and behaviours found in high-performing U.S. educational organisations (Baldrige (a), 2005, 1-3) which consist of visionary leadership; learning-centred education; organisation and personal learning; valuing faculty, staff and partners in order to create four composite indicators to be used.

Keys for the Development of an Effective Program

In accordance with the Baldrige characteristics, the researcher created four composite indicators, namely: visionary leadership; learning-centred education; organisation and personal learning; valuing faculty, staff and partners. He also created one-hundred and thirty-seven variables that were grouped as input, process and output systems according to each composite indicator in order to identify key requirements for the development of an

effective Masters Degree Program in Educational Administration that will ensure best practice related directly to Research Question 1. They, therefore, are composite indicators derived from the excellence of performance of the organisation that can be used to measure validly quality management. These composite indicators and variables were developed for the first Delphi questionnaire that was used in Phase 2 (see Appendix Q).

The First Delphi Expert Panel Personal Data

The starting point for the Delphi survey was the preparation of the first round questionnaire and the selection of the panellists. The chief criterion was the panellists' expertise in the issues under study. 'Expertise' implies that the individual panellists had more knowledge about the subject matter than most people, or that they possessed certain work experience, or were members in a relevant professional association (Hill & Fowles, 1975; Whitman, 1990, quoted in Murry & Hammons, 1995, 428).

Once prospective panellists qualified as experts in the field of interest, they received a personal invitation to participate in the study (Cochran, 1983; Parente and Anderson-Parente, 1987; Uhl, 1983, quoted in Murry & Hammons, 1995, 428). The invitation took the form of a written letter which explained the topic to be examined, provided information about the Delphi procedure, explained the time it will require, and asked the individual to become a member of the panel (Cochran, 1983, quoted in Murry & Hammons, 1995, 428). After the letter had been approved, the researcher made an appointment to invite each panel member to participate in the study. Copies of the information provided to potential participants, including consent forms and other ethical considerations may be found in Attachment E.

Personal data

Nineteen experts consented to participate in the Delphi survey and agreed to receive and respond to a series of three questionnaires as part of the research study. The personal data relating to these experts are shown in Tables 4.1-4.6. There was a gender balance; nearly half were aged over 60 years of age, and more than one-third were between 50 and 60 years of age; all but two held a doctorate degree; over 50 per cent held the academic rank of professor or associate professor; nearly all had more than 20 years' work experience in educational administration, with three-quarters working in either public or private higher education institutions. They were a highly competent and highly experienced group of people who were held in high esteem in the profession.

TABLE 4.1   GENDER

Gender	Number	Per cent
Female	9	47
Male	10	53
Total	19	100

TABLE 4.2   AGE

Range	Number	Per cent
41-45 years old	2	11
46-50 years old	1	5
51-55 years old	3	16
56-60 years old	4	21
More than 60 years old	9	47
Total	19	100

TABLE 4.3   FINAL EARNED DEGREE

Level	Number	Per cent
Post-Doctorate Degree	1	5
Doctorate Degree	16	84
Masters Degree	2	11
Total	19	100

TABLE 4.4   ACADEMIC POSITION

Position	Number	Per cent
Professor	3*	16
Associate Professor	7	37
Assistant Professor	4	21
Others	5**	26
Total	19	100

Remarks:

*One expert was equivalent Professor: formerly Inspector-General of Ministry of Education.

**They were: a Dean, Faculty of Education; a former Dean of Graduate School; a M.Ed. program director; an educational foundation executive director; a director of bureau for innovative development in education.

TABLE 4.5   YEARS OF WORKING EXPERIENCE

Time Range	Number	Per cent
11-15 years	1	5
16-20 years	1	5
More than 20 years	17	90
Total	19	100.00

TABLE 4.6   WORKPLACES

	Number	Per cent
Private higher education institutions	7	37
Public higher education institutions	7	37
Ministry of Education	1	5
Non-profit organisation	1	5
Retired, part-time instructors	3	16
Total	19	100

The Composite Indicators and their Variables

In this section, the composite indicators and their variables, for a proposed Masters Degree Programs in Educational Administration (MEd Ed Admin Program) in private higher education institutions in Thailand are identified and discussed in terms of 'utility or practicability' aspect. First, however, an overview of the statistical treatment of the data obtained from the Delphi survey will be provided.

Statistical treatment of data

As part of the modified Delphi survey technique that was applied in this study, the data obtained from the three rounds of questionnaires underwent statistical treatment. The first round questionnaire median scores (Q_2) and the inter-quartile ranges (Q_3-Q_1) were determined using Microsoft SPSS v.11 software and reported in the second round questionnaire. The second round questionnaire data were treated in a similar way.

In the second round questionnaire, each respondent was asked to reconsider and review their previous responses in the light of the group's responses. If the new rating differed from the group median score by two points or more, respondents were asked to give reasons for their particular rating. This provided qualitative information regarding attitudes and considered opinions in reaching the findings (Beech, 1999, 284).

Consensus, on an item by item basis, was determined as having been achieved if 50 per cent, or more, of respondents chose the same response on the particular item (Barela & Eisenberg, 2002, 6). Thus, consensus was reached when the same responses to the second round of the Delphi survey were achieved by 50 per cent or more of the respondents (see Tables A5 and A6, Appendix A).

In preparing the third round questionnaire, the four interquartile ranges were determined from the responses to each item of the second round questionnaire. The median utility score on each item was used to rank the items from highest to lowest, and the items were presented in this order in the third questionnaire. Both the first and second round medians were reported in the third round questionnaire to inform the Delphi respondents as they re-rated each item. The third round questionnaire was thus designed to achieve a valid and reliable consensus of the opinion of the group of experts.

After analysing and evaluating the third round questionnaire responses, the researcher decided that three iterations were sufficient as the

predetermined level of consensus had been reached. No new information would have been gained by a further iteration (Ludwig, 1997, 3). In a sample of the statistical results for the utility aspect of the third round questionnaire (Round 3), the median (Q2), the third quartile (Q3), the first quartile (Q1), and the mean were computed. Sample results are shown in Table 4.7.

TABLE 4.7   DELPHI SURVEY ROUND 3: UTILITY ASPECT

Items	Sum	Q_4	Q_3	Q_2 Median	Q_1	Mean
1. Visionary Leadership						
1.1 Input Variables						
1. There is sufficient appropriate students' needs information available.	172	10	9	9	9	9.05
2. There is sufficient program resources information available.	174	10	9	9	9	9.16

The computation of the fourth (highest) quartile (Q4), the third quartile (Q3), the second quartile (the median) (Q2), and the first quartile (Q1), mean, and also, the aggregation score (sum) for each round of questionnaires were computed by Microsoft SPSS v.11 for Windows version 11.0 software. The procedure of analysing the data was as follows. When the researcher received the questionnaire back from the expert, he keyed the score ratings of each item in variable columns that were designed and named for each input, process, output variables of each composite indicator for the two aspects – utility and usability – provided in the Microsoft SPSS v.11 Data Editor. The number for each row was fixed for each expert. The procedure went on until the data for each questionnaire from all experts were entered. The method used to process the data from the third round questionnaire is displayed in Figure 4.1. The researcher used the command words on the Data Editor screen for processing the data in order to provide the needed statistics for further analysis and use. A sample of the output screen is shown in Figure 4.2 and Table 4.8.

FIGURE 4.1   DATA EDITOR SCREEN, MICROSOFT SPSS V.11

Item	ut 1.1.1	ut 1.1.2
1	8.00	8.00
2	9.00	9.00
3	9.00	9.00
4	8.00	9.00
5	9.00	9.00
6	10.00	10.00
7	10.00	10.00
8	9.00	9.00
9	9.00	9.00
10	9.00	9.00
11	9.00	9.00
12	9.00	9.00
13	9.00	9.00
14	9.00	9.00
15	9.00	9.00
16	9.00	9.00
17	10.00	10.00
18	9.00	9.00
19	9.00	10.00

Lists of variable columns of the Round 3 Questionnaire, for example,: **ut 1.1.1** defined as the first input variable for visionary leadership composite indicator for utility aspect, named *'There is sufficient appropriate students' needs information available'* input item; **ut 1.1.2** defined to the second input variable for visionary leadership composite indicator for utility aspect, named *'There is sufficient program resources information available'* input item. There were nineteen experts' scores for ut 1.1.1 and ut 1.1.2.

FIGURE 4.2   THE STATISTICAL RESULTS FOR FURTHER ANALYSIS
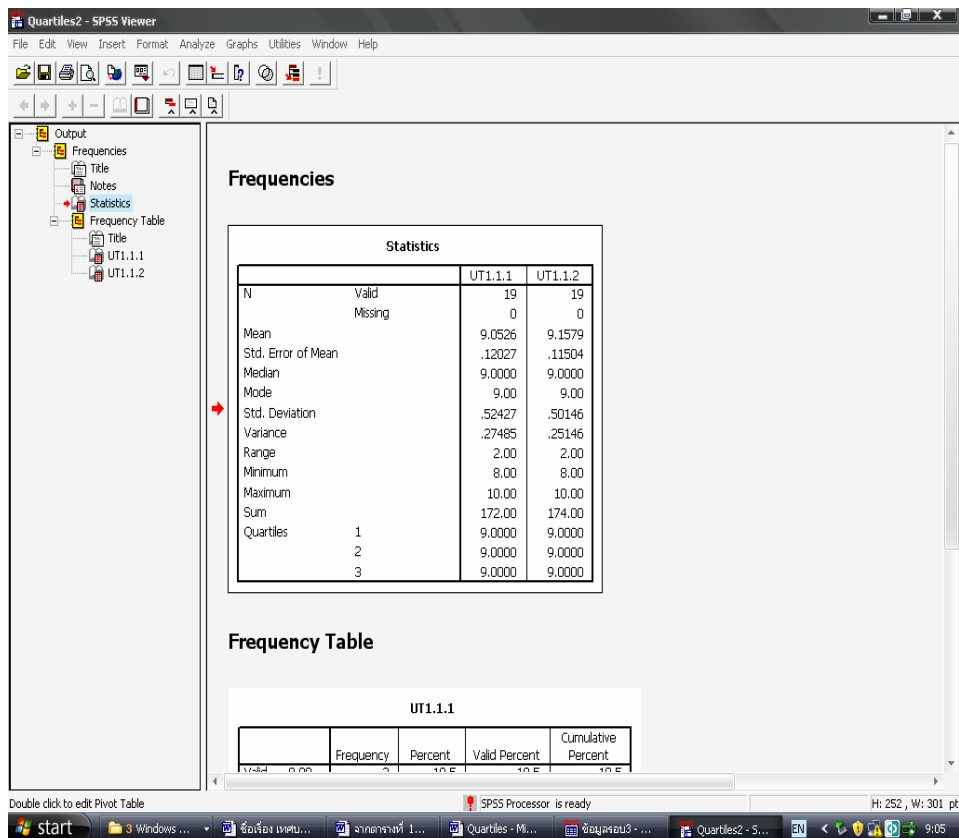
TABLE 4.8   FREQUENCY TABLES: UTILITY EXAMPLES

UT1.1.1

		Frequency	Percent	Valid per cent	Cumulative percentage
Valid	8.00	2	10.5	10.5	10.5
	9.00	14	73.7	73.7	84.2
	10.00	3	15.8	15.8	100.0
	Total	19	100.0	100.0	

UT1.1.2

		Frequency	Percent	Valid per cent	Cumulative percentage
Valid	8.00	1	5.3	5.3	5.3
	9.00	14	73.7	73.7	78.9
	10.00	4	21.1	21.1	100.0
	Total	19	100.0	100.0	

Once the Round 3 data had been collated and analysed, a set of weighted scores was computed. A sample of the composite indicators and their variables, together with the 'sum' score for each variable is provided in order to illustrate how this computation was undertaken. Firstly, the researcher added together all 'sum' scores for each composite indicator to produce the total 'sum' score. He then computed each composite indicator weighted score: each 'sum' score was divided by the total 'sum' score for that item; the result was multiplied by 100 to provide a 'per cent score weighted score'. The composite indicators were ranked, highest to lowest, in weighted score order. This procedure is summarised in Table 4.9.1.

TABLE 4.9.1   COMPUTATION OF COMPOSITE INDICATOR SCORES

Composite Indicators	Sum	Computing Process	Weighted Scores/%
1. **Visionary Leadership**	91	91 x 100/352	25.85
2. **Learning-centred Education**	89	89 x 100/352	25.28
3. **Organisational and Personal Learning**	87	87 x 100/352	24.72
4. **Valuing Faculty, Staff and Partners**	85	8 5x 100/352	24.15

Secondly, for each composite indicator, the researcher took the 'sum' score for each variable and summed them to produce a 'sub-total score'. The researcher computed the weighted scores for each composite indicator variable by dividing each 'sum' score by its 'sub-total score' multiplied by each 'composite indicator weighted score'. This procedure is summarised in Table 4.9.2.

Finally, in order to identify composite indicators variables of best practice, the results of the group consensus were combined according to Johnstone's (1981, 71-74) theoretical definition of a composite indicator (see Chapter 2). The composite indicators – together with all the variables included in the Delphi survey, with their interquartile range and mean scores – are shown in Appendix A, Table A4. This involved two steps:

TABLE 4.9.2   COMPUTATION OF WEIGHTED SCORES OF VARIABLES

	Sum	Computing Process	Weighted Scores/%
1 Visionary Leadership			**25.85**
1.1 Variable 1	170	170/342 x 25.85	12.85
1.2 Variable 2	172	172/342 x 25.85	13.00
Sub-total	342		
2 Learning-centred Education			**25.28**
2.1 Variable 1	173	173/510 x 25.28	8.58
2.2 Variable 2	169	169/510 x 25.28	8.38
2.3 Variable 3	168	168/510 x 25.28	8.33
Sub-total	510		
3 Organisational and Personal Learning			**24.72**
3.1 Variable 1	162	162/323 x 24.72	12.40
3.2 Variable 2	161	161/323 x 24.72	12.32
Sub-total	323		
4 Valuing Faculty, Staff and Partners			**24.15**
4.1 Variable 1	165	165/329 x 24.15	12.11
4.2 Variable 2	164	164/329 x 24.15	12.04
Sub-total	329		

1. The researcher selected those variables for *good practice* for each composite indicator that had third round group mean scores above 6.40, as outlined in Table 3.3. This score set the standard for *utility* good practice (highly desirable or desirable) and for *usability* good practice (highly feasible or feasible). These data are shown in Appendix A – those for *utility* in Table A4 and those for *usability* in Table A5.

2. The researcher also selected the variables for *best practice* for each composite indicator that had third round group mean scores above 8.20, as outlined in Table 3.3. This score set the standard for *utility* best practice (highly desirable) and for *usability* best practice (highly feasible). The weighted scores for all of the variables are shown in Appendix A – those for *utility* in Table A6 and those for *usability* in Table A7.

Best practice and composite indicators

As a result of the Delphi survey, four best practice and composite indicators (with a utility mean greater than 8.2) – visionary leadership; learning-centred education; organisational and personal learning; valuing faculty, staff and partners − together with those variables whose means also were above 8.20 and hence deemed to represent best practice, were selected as composite indicators of educational quality management for a proposed MEd Ed Admin Program. The composite indicator ratings for both utility and usability aspects are shown in Table 4.10 indicators.

The weighted scores of each best practice and composite indicators and their variables, expressed as a per cent, were based on the total aggregate scores responses for all items; they achieved an almost equal weighting of close to 25 per cent. These indicators with three considered variables: input, process, and output variables will be discussed in the sections below.

TABLE 4.10   COMPOSITE INDICATORS: UTILITY AND USABILITY ASPECTS

Composite Indicators	Utility				Usability			
	Sum	Q₂ Median	Mean	Weighted Scores/ %	Sum	Q₂ Median	Mean	Weighted Scores/ %
1 Visionary Leadership	91	9.00	9.10	25.85	80	7.50	8.00	26.14
2 Learning-centred Education	89	9.00	8.90	25.28	79	8.00	7.90	25.82
3 Organisational and Personal Learning	87	8.50	8.70	24.72	71	7.00	7.89	23.20
4 Valuing Faculty, Staff and Partners	85	8.00	8.50	24.15	76	7.00	7.60	24.84

Visionary Leadership

The visionary leadership best practice and composite indicator was, marginally, rated highest in importance amongst the composite indicators for quality management performance. This indicator consisted of four input variables with a total weighted score of 3.15 per cent, fourteen process variables with a total weighted score of 11.39, and eleven output variables with a total weighted score of 11.31. These variables are detailed in Table 4.11.

TABLE 4.11   VISIONARY LEADERSHIP COMPOSITE INDICATOR

Each item is ordered by the mean score.

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
	1 Visionary Leadership				**25.85**
	1.1 Input Variables				**3.15**
1	2 There is sufficient program resources information available.	174	9	9.16	0.83
2	1 There is sufficient appropriate students' needs information available.	172	9	9.05	0.82
3	6 There is sufficient faculty members competency data available.	157	8	8.26	0.75
4	4 There is sufficient stakeholders' needs information available.	156	8	8.21	0.75

Rank	Items		Sum	Q₂ Median	Mean	Weighted Scores/%
	1.2 Process Variables					**11.39**
1	1	Use quality assurance information for continuous performance improvement.	184	10	9.68	0.88
2	4	Student and stakeholder satisfaction is used for continuous performance improvement.	173	9	9.11	0.83
3	7	Use qualified systematic performance evaluation approach.	173	9	9.11	0.83
4	5	Set strategic plans in order to achieve the aims set.	171	9	9.00	0.82
5	6	Reform organisation using qualified management approaches.	171	9	9.00	0.82
6	9	Encourage faculty members to develop and learn.	171	9	9.00	0.82
7	2	All concerned are involved in vision development.	170	9	8.95	0.81
8	8	Focus on participative management.	170	9	8.95	0.81
9	13	Use program performance review for continuous improvement.	170	9	8.95	0.81
10	11	Encourage faculty members to be creative.	169	9	8.89	0.81
11	3	All concerned contribute to reach the vision.	168	9	8.84	0.80
12	12	Share knowledge between team members.	167	9	8.79	0.80
13	10	Encourage faculty members to be innovators.	166	9	8.74	0.79
14	14	Student and stakeholder dissatisfaction is promptly solved.	156	8	8.21	0.75
	1.3 Output Variables					**11.31**
1	1	Teaching and learning plans relate to the curriculum.	186	10	9.79	0.89
2	10	Program leaders serve as role models through their competencies.	172	9	9.05	0.82
3	11	Program leaders serve as role models through their ethical behaviour.	172	9	9.05	0.82
4	6	The goals for producing graduates emphasize the excellence of the program academic.	171	9	9.00	0.82
5	2	Qualified human resource plans are developed.	170	9	8.95	0.81
6	3	Resources plans for strategic deployment are developed.	170	9	8.95	0.81
7	4	The goals for producing graduates are practical.	170	9	8.95	0.81
8	5	The goals for producing graduates keep faith with the stakeholders' expectations.	170	9	8.95	0.81

Rank		Items	Sum	Q₂ Median	Mean	Weighted Scores/%
9	8	The teaching and learning plans balance market needs.	170	9	8.95	0.81
10	7	The goals for producing graduates balance the needs of stakeholders.	169	9	8.89	0.81
11	9	Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	169	9	8.89	0.81
12	12	Teaching and learning plans are relevant to educational business conditions.	160	8	8.42	0.77
13	14	The number of functional departments is assessed.	157	8	8.26	0.75
14	15	The number of functional departments is accredited.	156	8	8.21	0.75

Input variables

The visionary leadership best practice and composite indicator consisted of four input variables: whether or not there is sufficient program resources information available, sufficient appropriate students' needs information available, sufficient faculty members competency data available, and sufficient stakeholders' needs information available. These variables had weighted scores of 0.83, 0.82, 0.75 and 0.75 per cent, respectively.

Process variables

The first visionary leadership process variable was concerned with whether or not leaders use quality assurance information for continuous performance improvement; the second with whether or not student and stakeholder satisfaction is used for continuous performance improvement and the third variable with whether or not program leaders use a qualified systematic performance evaluation approach. The weighted scores for these three variables were 0.88, 0.83 and 0.83 per cent, respectively.

The findings also illustrated three process variables that had equal weighted scores of 0.82 per cent: whether or not program leaders set strategic plans in order to achieve the aims set; reform the organisation using qualified management approaches; encourage faculty members to develop and learn.

In addition, there were four variables with weighted scores of 0.81 per cent: whether or not program leaders encourage all concerned involved in vision development; focus on participative management; use program performance review for continuous improvement; encourage faculty members to be creative.

The weighted scores of the other four process variables were 0.80, 0.80, 0.79, and 0.73 per cent, respectively. These were as follows: whether or not program leaders encourage all concerned contributed to reach the vision; encourage sharing knowledge between team members; encourage faculty members to be innovators; whether or not student and stakeholder dissatisfaction is promptly solved.

Output variables

The findings indicated that there were fourteen best practice output variables to be included in the visionary leadership best practice and composite indicator. The first output variable with its weighted score of 0.89 per cent was whether or not teaching and learning plans relate to the curriculum. The second to fourth variables with equal weighted score of 0.82 were: whether or not program leaders serve as role models through their competencies; program leaders serve as role models through their ethical behaviour; goals for producing graduates emphasize the excellence of the program academic.

The findings also provided seven visionary leadership output variables with equal weighted score of 0.81 per cent: whether or not qualified human resource plans are developed; resources plans for strategic deployment are developed; the goals for producing graduates are practical; the goals for producing graduates keep faith with the stakeholders' expectations; the teaching and learning plans balance market needs; the goals for producing graduates balance the needs of stakeholders; teaching and learning plans are updated to change, such as, for changes in technology and in economics.

The twelfth output variable with its weighted score of 0.77 per cent was whether or not teaching and learning plans are relevant to educational business conditions. The remaining two output variables with equal weighted scores of 0.75 per cent were: whether or not the number of functional departments is assessed; the number of functional departments is accredited.

Learning-centred Education

The learning-centred education best practice and composite indicator was rated second in importance with a total weighted score of 25.28 per cent. According to the findings, this indicator consisted of twenty-one input variables with a total weighted score of 13.41 per cent, eight process variables with a total weighted score of 4.99 per cent, and eleven output variables with a total weighted score of 6.88 per cent. These variables are detailed in Table 4.12.

TABLE 4.12   COMPOSITE INDICATOR: LEARNING-CENTRED EDUCATION

Each item is ordered by the mean score.

Rank	Items		Sum	Q_2 Median	Mean	Weighted Scores/%
	2	**Learning-centred Education**				**25.28**
	2.1	**Input Variables**				13.41
1	2	Curriculum objectives relate to the curriculum's philosophy.	187	10	9.84	0.70
2	3	Curriculum structure meets standard criteria.	187	10	9.84	0.70
3	1	Curriculum philosophy relates to the program's vision.	186	10	9.79	0.69
4	4	Curriculum structure supports curriculum objectives.	177	9	9.32	0.66
5	10	Curriculum is appropriately designed to develop students' research competencies.	173	9	9.11	0.64
6	13	The number of faculty with higher degrees meets the standard criteria.	173	9	9.11	0.64
7	17	There is an acceptable system for evaluating student performance.	173	9	9.11	0.64
8	6	Curriculum goals are problem-solving oriented.	172	9	9.05	0.64

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
9	14 Faculty has knowledgeable in student-centred approach for teaching and learning process.	172	9	9.05	0.64
10	16 There is an advisory system that is practicable in promoting all dimensions of student development.	172	9	9.05	0.64
11	9 Curriculum is appropriately designed to develop students to be excellent academic leaders.	171	9	9.00	0.64
12	11 Curriculum is well-designed for developing students having competencies for profession.	171	9	9.00	0.64
13	8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	170	9	8.95	0.63
14	15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	170	9	8.95	0.63
15	7 Curriculum goals balance students' needs.	169	9	8.89	0.63
16	12 There are sufficient elective subjects provided to meet students' needs.	169	9	8.89	0.63
17	5 Curriculum objectives relate to public policy.	168	9	8.84	0.63
18	18 Curriculum goals focus on various assessment approaches.	161	8	8.47	0.60
19	20 There is an acceptable system for monitoring student progress.	160	8	8.42	0.60
20	21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	159	8	8.37	0.59
21	19 There is a sufficient amount of appropriate physical resources.	158	8	8.32	0.59
	2.2 Process Variables				**4.91**
1	2 Faculties teach in areas that are directly related to their field of specialisation.	172	9	9.05	0.64
2	3 Teaching and learning process is research-oriented in its focus.	172	9	9.05	0.64
3	4 Encourage good interactions with students.	172	9	9.05	0.64
4	1 Provide opportunities for all concerned about curriculum content development to be heard.	171	9	9.00	0.64
5	6 Use systematically authentic evaluation approaches.	169	9	8.89	0.63

Rank	Items		Sum	Q₂ Median	Mean	Weighted Scores/%
6	5	Provide student with opportunities to select their subjects based on their interests.	168	9	8.84	0.63
7	7	Set high expectations for all students.	158	8	8.32	0.59
8	8	Set appropriate criteria and standards for all students.	158	8	8.32	0.59
	2.3	**Output Variables**				**6.88**
1	5	Students report that they are satisfied with the faculties' teaching and learning process.	172	9	9.05	0.64
2	3	Develop a high level of competency in skills of problem-solving amongst the students.	171	9	9.00	0.64
3	4	Develop a high level of competency amongst the students in the use of information and computer technology.	171	9	9.00	0.64
4	1	Use appropriate technologies in the teaching and learning process.	170	9	8.95	0.63
5	2	Use formative assessment and evaluation approaches in teaching and learning process.	170	9	8.95	0.63
6	8	Curriculum content is continuously developed.	170	9	8.95	0.63
7	6	The proportions of students' papers, research articles are published in national and international academic journals.	169	9	8.89	0.63
8	7	Per cent of students who graduate within expected time.	169	9	8.89	0.63
9	9	Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	168	8	8.42	0.63
10	11	Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	159	8	8.37	0.59
11	10	Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	157	8	8.26	0.59

Input variables

For the learning-centred education best practice and composite indicator in the proposed MEd Ed Admin program, the Delphi survey identified twenty-one input variables with a total weighted score of 13.41 per cent.

Curriculum was rated highest in importance for the learning-centred education input variables with the total weighted score of 7.80 per cent. Twelve curriculum-approach variables, grouped and ranked in importance according to their mean scores were identified: whether or not curriculum objectives relate to the curriculum's philosophy; curriculum structure meets standard criteria; curriculum philosophy relates to the program's vision; curriculum structure supports curriculum objectives; curriculum is appropriately designed to develop students' research competencies; curriculum goals are problem-solving oriented; curriculum is appropriately designed to develop students to be excellent academic leaders; curriculum is well-designed for developing students having competencies for the profession; curriculum is well-designed for assisting students to become well-rounded administrators in education; curriculum goals balance students' needs; curriculum objectives relate to public policy; curriculum goals focus on various assessment approaches.

There were seven other input variables that were selected. There were four variables with equal weighted scores of 0.64 per cent: whether or not the number of faculty with higher degrees meets the standard criteria; there is an acceptable system for evaluating student performance; faculty has knowledge of the student-centred teaching and learning process; there is an advisory system that is practicable in promoting all dimensions of student development.

There were two variables with marginally lower weighted score of 0.63 per cent: whether or not there are appropriate regulations for the masters program in educational administration covering the progression of students

from admission to award; there are sufficient elective subjects provided to meet students' needs. The nineteenth variable with a weighted score of 0.60 per cent was whether or not there is acceptable system for monitoring student progress.

There were two final input variables with equal weighted scores of 0.59 per cent: whether or not there are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches; and, whether or not there is sufficient amount of appropriate physical resources available.

Process variables

The findings identified eight learning-centred education process variables, with a total weighted score of 4.91. The first to fourth variables had equally weighted scores of 0.64 per cent: whether or not faculty teach in areas that are directly related to their field of specialisation; the teaching and learning process is research-oriented in its focus, faculty encourage good interactions with students; program leaders and faculty provide opportunities for all concerned about curriculum content development to be heard.

The fifth and sixth variables had equally weighted scores of 0.63 per cent: whether or not faculty use systematically authentic evaluation approaches; provide students with opportunities to select their subjects based on their interests.

The other two process variables with equal weighted score of 0.59 per cent were: whether or not program leaders and faculty set high expectations for all students; and, set appropriate criteria and standards for all students.

Output variables

The findings identified eleven learning-centred education output variables with a total weighted score of 6.88 per cent. The first to third output variables had equally weighted scores of 0.64 per cent: whether or not students report that they are satisfied with the faculties' teaching and learning process;

program leaders and faculty develop a high level of competency in skills of problem-solving amongst the students; a high level of competency is developed amongst the students in the use of information and computer technology.

Another group of six output variables with equally weighted score of 0.63 per cent were: whether or not faculty use appropriate technologies in the teaching and learning process; formative assessment and evaluation approaches are used in the teaching and learning process; curriculum content is continuously developed; standard proportions of students' papers, research articles are published in national and international academic journals; standard percentages of students graduate within the expected time; students report that they are satisfied with program the building and space, environment, and resources supporting the teaching and learning process.

The final two output variables with equally weighted scores of 0.59 per cent were: whether or not there is validated evidence from stakeholders demonstrating that graduates posses the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and/or in further learning; a standard percentage of students report that grading and assessing processes allow them to actually demonstrate what they know.

Organisational and Personal Learning

The organisational and personal learning best practice and composite indicator was rated third in importance with a total weighted score of 24.72 per cent. According to the findings, this indicator consisted of four input variables with a total weighted score of 9.09 per cent, four process variables with a total weighted score of 8.78 per cent, and three output variables with a total weighted score of 6.85 per cent. These variables are detailed in Table 4.13.

TABLE 4.13   COMPOSITE INDICATOR: ORGANISATIONAL AND PERSONAL LEARNING

Each item is ordered by the mean score.

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
	3 Organisational and Personal Learning				**24.72**
	3.1 Input Variables				**9.09**
1	2 There is sufficient resource, technology availability for organisation and personal learning.	169	9	8.89	2.35
2	1 There is sufficient validated information to indicate whether or not learning is taking place.	168	9	8.84	2.33
3	3 There are validated processes designed to track progress on strategic goals.	159	8	8.37	2.21
4	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	158	8	8.32	2.20
	3.2 Process Variables				**8.78**
1	1 Promoting faculty members to create ideas for organisation performance improvement.	159	8	8.37	2.21
2	6 Provide opportunities to faculty members for continuous performance improvement.	159	8	8.37	2.21
3	3 Reinforce the learning environment for students.	158	8	8.32	2.20
4	4 Reinforce the learning environment for faculty members performance improvement.	156	8	8.21	2.17

	3.3 Output Variables				**6.85**
1	2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	169	9	8.89	2.35
2	1 Evidence that faculty use teaching and learning assessment to improve their competencies.	167	9	8.79	2.32
3	6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	157	8	8.26	2.18

Input variables

For the organisational and personal learning best practice and composite indicator in the proposed MEd Ed Admin program, the Delphi survey identified four input variables with a total weighted score of 9.09 per cent. These variables, ranked in importance according to their mean scores, were: whether or not there are sufficient resources, and technology available, for organisational and personal learning; there is sufficient validated information to indicate whether or not learning is taking place; there are validated processes designed to track progress on strategic goals; the focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work. These four variables had weighted scores of 2.35, 2.33, 2.21, and 2.20 per cent, respectively.

Process variables

The findings identified four organisational and personal learning process variables with a total weighted score of 8.78 per cent. The first and second variables had equally weighted scores of 2.21 per cent: whether or not program leaders encourage faculty members to create ideas for organisation performance improvement; provide opportunities for faculty members to engage in continuous performance improvement.

The other two process variables had weighted scores of 2.20 and 2.17 per cent, respectively: whether or not the program reinforces the learning environment for students; the program reinforces the learning environment for faculty members performance improvement.

Output variables

The findings identified three organisational and personal learning output variables with a total weighted score of 6.85 per cent. The three output variables were: whether or not there was the evidence that leaders use teaching and learning assessment to improve the program's performance results; evidence that faculty use teaching and learning assessment to improve their competencies; evidence that knowledge assets of the program,

such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised. These variables had weighted scores of 2.35, 2.32, and 2.18 per cent, respectively.

Valuing Faculty, Staff and Partners

The valuing faculty, staff and partners best practice and composite indicator was rated fourth in importance indicator for effective quality management of the MEd Ed Admin program with a total weighted score of 24.15 per cent. According to the findings, this indicator consisted of six input variables with a total weighted score of 7.41 per cent, three process variables with a total weighted score of 3.64 per cent, and eleven output variables with total weighted score of 13.10 per cent. These variables are detailed in Table 4.14.

TABLE 4.14   COMPOSITE INDICATOR: VALUING FACULTY, STAFF AND PARTNERS

Each item is ordered by the mean score.

Rank	Items	Sum	Q_2 Median	Mean	Weighted Scores/%
	4 Valuing Faculty, Staff, and Partners				**24.15**
	4.1 Input Variables				**7.41**
1	4 There is adequate funding for supporting the research.	171	9	9.00	1.28
2	3 There is a validated faculty members performance evaluation approach.	170	9	8.95	1.27
3	2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	169	9	8.89	1.26
4	1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	168	9	8.84	1.25
5	5 There is adequate funding for supporting the innovation project.	159	8	8.37	1.19

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	156	8	8.21	1.16
	4.2 Process Variables				**3.64**
1	1 Use faculty members performance evaluation as measures of their performance.	172	9	9.05	1.28
2	2 Implement human resources plan.	159	8	8.37	1.19
3	3 Use decentralisation and empowerment to assist in the overcoming of problems.	157	8	8.26	1.17
	4.3 Output Variables				**13.10**
1	1 Research innovation supported by internal grants.	168	9	8.84	1.25
2	2 Research innovation supported by external grants.	167	9	8.79	1.25
3	3 Strategic plans are developed by all concerned.	163	9	8.58	1.22
4	8 Evidence that program leaders motivate faculty members developing and utilising their full potential.	159	8	8.37	1.19
5	11 There is faculty members development activities organised for research embarking.	158	8	8.32	1.18
6	13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	158	8	8.32	1.18
7	4 Evidence of responding to improve students' educational needs in a timely manner.	157	8	8.26	1.17
8	9 Evidence that program leaders make efforts to conduct performance excellences.	157	8	8.26	1.17
9	6 Evidence of faculty response to improve students' learning performance in a timely manner.	156	8	8.21	1.16
10	7 Evidence of responding to program's improving performance in a timely manner.	156	8	8.21	1.16
11	20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	156	8	8.21	1.16

Input variables

For the best practice and composite indicator in the proposed MEd Ed Admin program, the Delphi survey identified six input variables with a total weighted score of 7.41 per cent. The first and second input variables, with weighted scores of 1.28 and 1.27 per cent, respectively, were: whether or not there is adequate funding for supporting the research; there is a validated faculty members performance evaluation approach.

The third and fourth input variables, with weighted scores of 1.26 and 1.25 per cent, respectively, were: whether or not there is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process; there is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.

The other two input variables with weighted scores of 1.19 and 1.16 per cent, respectively, were: whether or not there is adequate funding for supporting the innovation project; there is evidence of the evaluation of the progress of internal and external partnerships designed to assist in adapting to new conditions.

Process variables

The findings identified three valuing faculty, staff and partners process variables with a total weighted score of 3.64. The first variable was whether or not program leaders use faculty members performance evaluation as measures of their performance. The other two process variables were whether or not program leaders implement human resources plan; use decentralisation and empowerment to assist in the overcoming of problems. These three process variables had their weighted scores of 1.28, 1.19, and 1.17 per cent, respectively.

Output variables

The findings identified eleven output valuing faculty, staff and partners process variables with a total weighted score of 13.10. The first and second output variables, with equally weighted scores of 1.25 per cent were whether or not innovation was supported by internal grants; research innovation was supported by external grants.

The third and fourth output variables with weighted scores of 1.22 and 1.19 per cent, respectively, were: whether or not strategic plans are developed by all concerned; there is evidence that program leaders motivate faculty members towards developing and utilising their full potential. The fifth and sixth variables, with equally weighted scores of 1.18, were: whether or not there are faculty members development activities organised for research embarking; and, the number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally. The seventh and eighth variables, with equally weighted scores of 1.17 per cent, were: whether or not there is evidence of faculty response to improve students' educational needs in a timely manner; there is evidence that program leaders make efforts to conduct checks of performance excellence.

The final three output variables, with equally weighted scores of 1.16 per cent, were: whether or not there is evidence of faculty response to improve students' learning performance in a timely manner; evidence of program personnel responding to improving the performance of programs in a timely manner; the level of cooperation among senior leaders, faculty, and staff is adequate.

The Essential Indicators and their Variables

The findings, in terms of 'desirable utility or practicability' aspects, were selected to create essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration and relate directly to Research Question 2. There were four composite indicators, namely: visionary leadership; learning-centred education; organisational and personal learning; and valuing faculty, staff and partners which consist of one hundred and three variables (see Appendix A, Table A17). They can be used to develop policies and to develop subsequent educational administration programs. They will also assist in continuous improvement and achievement of a program as a result of external analysis and investigation.

Summary

The Delphi survey findings implied that for the effective management of a MEd Ed Admin program, program leaders need to have information or evidence in order to assist decisions about a future or projected program which involve all plans for development and deployment, resource management, and program services delivery at all levels in the organisation. The program should also be examined to show how well its personnel accomplish the work within the program, and, what and how good were the results – not only in support of for quality concerns, but also for sustaining and growing the program.

The findings show that the four best practice and composite indicators, namely: visionary leadership; learning-centred education; organisational and personal learning; and valuing faculty, staff and partners are able to be used as selected inputs for providing a means of evaluating program performance or projecting a program to develop policies and to develop any subsequent program. They may also be used as a basis for

creating and implementing a new program that is based on the best practice principles identified in the survey.

The visionary leadership best practice composite indicator focuses on leadership's key responsibilities for guiding and sustaining the organisation and overseeing its ethical stewardship. The learning-centred education best practice composite indicator focuses on creating teaching and learning that responds to the real needs of students and all stakeholders concerned, thus leading to student and stakeholder satisfaction and loyalty, and long-term program success. The organisational and personal learning best practice composite indicator illustrates how and how well a program selects, analyses, manages, and reviews its performance and performance-improvement through use of the program's data, information and knowledge assets. Finally, the valuing faculty, staff and partners best practice composite indicator provides for an examination of how and how well the program builds and maintains a work environment, and whether or not the faculty provide a supportive climate in order to achieve personal excellence and bring about personal and organisational growth.

The findings indicate the four best practice and composite indicators – visionary leadership; learning-centred education; organisational and personal learning; and valuing faculty, staff and partners – were able to be established using a Delphi survey approach within the framework of the Proactive Evaluation Form of Owen, with Rogers (1999) and Owen (2006); that they were able to be used in constructing indicators according to the approach of Johnstone (1981) that will act as quality assurance benchmarks to provide information in order to assist decisions about a projected program.

Chapter 5

Analysis of Data and Report on the Findings: Third Phase

Introduction

In the first part of the third phase of the research, a second expert panel consisting of thirty-four tertiary administrators and lecturers involved in the teaching of Educational Administration and related fields in private higher education institutions in Thailand participated in a single-round paper-and-pencil survey designed to test by consensus the practicality of a listing of composite indicators and their variables and the best practice for Masters courses in this field.

In the second part of this phase, six participants from the second expert panel, selected at random, were invited to participate in individual, semi-structured interviews in order to give their recommendations, and to elaborate on and reconsider their reasons for selecting the composite indicators and their variables. Prior to the interviews, they were given a statistical analysis of responses to the second expert panel questionnaire (see Appendix A, Tables A12-A13).

The six participants in Phase 3, Step 3 of the study, were represented by a president, an assistant president, and directors and deans of six Thai universities and colleges.

The second expert panel questionnaire survey and the subsequent review of the best practice and composite indicators and variables by the panel of six, related directly to Research Question 3:

What is recognised as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand?

Personal data

The thirty-four private higher education institution administrators and full-time instructors of the Thai private graduate schools of Educational Administration and related fields were invited to participate in this single round questionnaire survey. Their personal data were contained in Tables 5.1-5.6. In summary, 55 per cent were male; nearly half were aged over 56 years of age, and over a one-third were between 46 and 55 years of age; all but six held a doctoral degree; over 50 per cent held the academic rank of professor, associate professor, or assistant professor; nearly two-third had more than 20 years' work experience, all but two working in either public or private higher education institutions. They are a highly competent and experienced group of people in their profession.

TABLE 5.1   GENDER

Gender	Number	Per cent
Female	15	44
Male	19	55
Total	34	100

TABLE 5.2   AGE

Age range	Number	Per cent
30-35 years old	2	6
36-40 years old	1	3
41-45 years old	2	6
46-50 years old	5	15
51-55 years old	7	21
56-60 years old	11	32
More than 60 years old	6	18
Total	**34**	**101**

TABLE 5.3   FINAL EARNED DEGREE

Highest qualification	Number	Per cent
Post-Doctorate Degree	1	2.94
Doctorate Degree	27	79.41
Masters Degree	6	17.65
Total	**34**	**100.00**

TABLE 5.4   ACADEMIC POSITION

	Number	Per cent
Professor	1	3
Associate Professor	11	32
Assistant Professor	6	18
Instructors	16	47
Total	**34**	**100**

TABLE 5.5   YEARS IN WORKING EXPERIENCE

Year range	Number	Per cent
6-10 years	6	17
16-20 years	2	6
More than 20 years	23	68
Total	**34**	**101**

TABLE 5.6   WORKPLACES

Type of institution	Number	Per cent
Private higher education institutions	21	62
Public higher education institutions	11	32
Public Organisation	1	3
Part-time instructor	1	3
Total	**34**	**100**

Ranking the Composite Indicators

In this section, the composite indicators for a Masters Degree Program in Educational Administration in private higher education institutions in Thailand were ranked and discussed. First, however, a discussion of how the data obtained from the single-round survey were treated will be undertaken.

Statistical treatment of data

The statistical data from the single-round were analysed and presented. The computation of the fourth quartile or the highest quartile (Q_4), the third quartile (Q_3), the second quartile (Q_2) or the median, the first quartile (Q_1), and the mean was undertaken using SPSS 11.0 for Windows software. These data, together with the aggregate scores (SUM), are contained in Appendix A, Tables A4-A5. The researcher selected the variables for each composite indicator whose group mean score was equal to 6.41 or above; these were defined as 'good' composite indicators. Weighted scores were produced for good practice composite indicators and their variables for a proposed MEd Ed Admin Program in private higher education institutions in Thailand in two aspects: utility and usability.

TABLE 5.7   AGGREGATE SCORES: UTILITY AND USABILITY

Composite Indicator	Utility			Usability		
	Sum	Q2 / Median	Mean	Sum	Q2 / Median	Mean
1 Visionary Leadership	263	9	8.77	227	8	7.57
2 Learning-centred Education	262	9	8.73	229	8	7.63
3 Organisational and Personal Learning	260	9	8.67	219	7	7.30
4 Valuing Faculty, Staff, and Partners	267	9	8.90	220	7	7.33

Rank ordering of Composite Indicators

The results of the aggregate scores of composite indicators, from the viewpoint of the second expert panel, resulted in different rankings for the utility and usability aspects.

These data are shown in Table 5.7.

Utility

For the utility aspect, the aggregate scores of composite indicators ranked from highest to lowest were valuing faculty, staff, and partners; visionary leadership; learning-centred education; and organisational and personal learning composite indicator. These data, together with the weighted scores of each composite indicator, are contained in Table 5.8.

Usability

For the usability aspect, the aggregate scores of composite indicators ranked from high to low were learning-centred education; visionary leadership; valuing faculty, staff, and partners; and organisational and personal learning composite indicator. These data are contained in Table 5.9.

TABLE 5.8   RANKING OF COMPOSITE INDICATORS: UTILITY

Rank	Composite Indicator	Sum	Q4	Q3	Q2 Median	Q1	Mean	Weighted Scores/%
1	4 Valuing Faculty, Staff, and Partners	267	10	10	9	8	8.90	25.38
2	1 Visionary Leadership	263	10	10	9	8	8.77	25.00
3	2 Learning-centred Education	262	10	10	9	8	8.73	24.90
4	3 Organisational and Personal Learning	260	10	9.25	9	8	8.67	24.71

TABLE 5.9   RANKING OF COMPOSITE INDICATORS: USABILITY

Rank	Composite Indicator	Sum	Q4	Q3	Q2 Median	Q1	Mean	Weighted Scores/%
1	2. Learning-centred Education	229	10	9	8	6	7.63	25.59
2	1. Visionary Leadership	227	10	9	8	6.75	7.57	25.36
3	4. Valuing Faculty, Staff, and Partners	220	10	9	7	5.75	7.33	24.58
4	3. Organisational and Personal Learning	219	10	9	7	6	7.30	24.47

The findings in Tables 5.8 and 5.9 indicate that the second expert panel viewed the best practice and composite indicators of educational quality management for an effective MEd Ed Admin program established by the Delphi survey differently from the first panel. From the utility viewpoint, the most important composite indicator for the second panel was valuing faculty, staff and partners; the first panel had rated this lowest. The order of the remaining three composite indicators remained the same as for the first panel. The original rankings are shown in the column headed 'Composite

Indicator' in Table 5.8; likewise, for the usability viewpoint, there was an inversion of the first two and the last two composite indicators and these differences in rankings are shown in Table 5.9. It is noted, however, that the differences in the group means for both utility and usability are low (no more than 0.30 points). It was, however, beyond the scope of this research to undertake a t-test to determine the significance of this difference. This remains a task for subsequent research.

Best practice and composite indicators

The single-round questionnaire was designed as part of the triangulation process to test the validity, appropriateness, and practicality of the composite indicators and their variables. The aggregate scores, the inter-quartile ranges – including the median (Q2) – and group means of all items were also computed using SPSS 11.0 for Windows software. The researcher used the same methods for analysing and evaluating this second survey as were applied in the first survey.

Once again, the best practice and composite indicators were identified as those with utility and usability aspect group mean scores greater than 8.20. The second expert panel rated both the utility and usability indicators differently from the first expert (Delphi) panel. The complete listing of results is contained in Appendix A, Tables A12-A13.

The utility items that were rated as 'best composite items' are presented in Table 5.10: the visionary leadership composite indicator with two input, three process and nine output variables; the learning-centred education composite indicator consisting of seventeen input, six process and nine output variables; the organisation and personal learning composite indicator with two input, four process and three output variables; the valuing faculty, staff and partners composite indicator with two input, and one process variables (there were no output variables).

**TABLE 5.10   SECOND EXPERT PANEL – BEST PRACTICE AND COMPOSITE
INDICATORS AND THEIR VARIABLES: UTILITY**

(Each item is ordered by the mean score)

Rank	Items	Sum	Q$_2$ Median	Mean
	1 Visionary Leadership			
	1.1 Input Variables			
1	1 There is sufficient program resources information available.	288	9	8.47
2	3 There is sufficient faculty members competency data available.	280	8.5	8.24
	1.2 Process Variables			
1	3 Use qualified systematic performance evaluation approach.	290	9	8.53
2	4 Set strategic plans in order to the aims set.	287	9	8.44
3	1 Use quality assurance information for continuous performance improvement.	282	8.5	8.29
4	2 Student and stakeholder satisfaction is used for continuous performance improvement.	282	9	8.29
	Output Variables			
1	3 Program leaders serve as role models through their ethical behaviour.	303	9	8.91
2	2 Program leaders serve as role models through their competencies.	290	9	8.79
3	4 The goals for producing graduates emphasize the excellence of the program academic.	297	9	8.74
4	1 Teaching and learning plans relate to the curriculum.	296	9	8.70
5	6 Resources plans for strategic deployment are developed.	286	9	8.41
6	9 The teaching and learning plans balance market needs.	286	9	8.41
7	5 Qualified human resource plans are developed.	285	9	8.38
8	11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	281	9	8.26
9	7 The goals for producing graduates are practical.	279	8.5	8.21
	2 Learning-Centred Education			
	2.1 Input Variable			
1	1 Curriculum objectives relate to the curriculum's philosophy.	307	10	9.30
2	5 Curriculum is appropriately designed to develop students' research competencies.	307	9	9.03
3	3 Curriculum philosophy relates to the program's vision.	297	9	9.00
4	4 Curriculum structure supports curriculum objectives.	306	9	9.00

Rank		Items	Sum	Q₂ Median	Mean
5	8	Curriculum goals are problem-solving oriented.	300	9	8.82
6	6	The number of faculty with higher degrees meets the standard criteria.	299	9	8.79
7	2	Curriculum structure meets standard criteria.	298	9	8.76
8	10	There is an advisory system that is practicable in promoting all dimensions of student development.	296	9	8.70
9	12	Curriculum is well-designed for developing students having competencies for profession.	294	9	8.65
10	13	Curriculum is well-designed for assisting students to become well-rounded administrators in education.	294	9	8.65
11	14	There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	284	9	8.61
12	11	Curriculum is appropriately designed to develop students to be excellent academic leaders.	290	9	8.53
13	9	Faculty has knowledgeable in student-centred approach for teaching and learning process.	286	9	8.41
14	7	There is an acceptable system for evaluating student performance.	284	9	8.35
15	16	There are sufficient elective subjects provided to meet students' needs.	283	8.5	8.32
16	15	Curriculum goals balance students' needs.	273	9	8.27
17	17	Curriculum objectives relate to public policy.	279	8	8.21
		2.3 Output Variables			
1	3	Develop a high level of competency amongst the students in the use of information and computer technology.	297	9	8.74
2	6	Curriculum content is continuously developed.	297	9	8.74
3	5	Use formative assessment and evaluation approaches in teaching and learning process.	287	9	8.44
4	4	Use appropriate technologies in the teaching and learning process.	286	8	8.41
5	2	Develop a high level of competency in skills of problem-solving amongst the students.	277	9	8.39
6	10	Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	285	8	8.38
7	8	Per cent of students who graduate within expected time.	283	9	8.32
8	1	Students report that they are satisfied with the faculties' teaching and learning process.	282	8	8.29
9	9	Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	281	8	8.26

Rank	Items		Sum	Q₂ Median	Mean
	3 Organisational and Personal Learning				
	3.1 Input Variables				
1	1	There is sufficient resource, technology availability for organisation and personal learning.	273	8	8.27
2	3	There are validated processes designed to track progress on strategic goals.	273	8	8.27
	3.2 Process Variables				
1	3	Reinforce the learning environment for students.	290	8.5	8.53
2	4	Reinforce the learning environment for faculty members performance improvement.	284	8.5	8.35
3	1	Promoting faculty members to create ideas for organisation performance improvement.	274	9	8.30
4	2	Provide opportunities to faculty members for continuous performance improvement.	264	8.5	8.25
	3.3 Output Variables				
1	2	Evidence that faculty use teaching and learning assessment to improve their competencies.	281	9	8.26
2	5	Evidence that faculty use teaching and learning assessment to improve students' performance.	280	8	8.24
3	1	Evidence that leaders use teaching and learning assessment to improve the program's performance results.	279	8.5	8.21
	4 Valuing Faculty, Staff and Partners				
	4.1 Input Variables				
1	1	There is adequate funding for supporting the research.	284	9	8.35
2	4	There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	280	9	8.24
	4.2 Process Variables				
1	1	Use faculty members performance evaluation as measures of their performance.	283	9	8.58
	4.3 Output Variables		none	none	none

The usability items that were rated as 'best composite items' are presented in Table 5.11: the visionary leadership composite indicator with one output variable; the learning-centred education composite indicator consisting of six input variables and one process variable. A much greater number of best practice and composite indicators were identified from the

utility aspects – fifty-eight utility, compared with eight usability aspects, a

TABLE 5.11   SECOND EXPERT PANEL – BEST PRACTICE AND COMPOSITE INDICATORS AND THEIR VARIABLES: USABILITY

(Each item is ordered by the mean score)

Rank	Items	Sum	Q₂ Median	Mean
	1 Visionary Leadership			
	1.3 Output Variables			
1	3 Program leaders serve as role models through their ethical behaviour.	282	8	8.29
	2 Learning-Centred Education			
	2.1 Input Variables			
1	2 Curriculum structure meets standard criteria.	290	9	8.79
2	6 The number of faculty with higher degrees meets the standard criteria.	293	9	8.62
3	4 Curriculum structure supports curriculum objectives.	291	9	8.56
4	3 Curriculum philosophy relates to the program's vision.	289	9	8.50
5	7 There is an acceptable system for evaluating student performance.	286	9	8.41
6	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	285	9	8.38
	2.2 Process Variables			
1	3 Encourage good interactions with students.	279	8	8.21

ratio of approximately seven to one. This is a strong comment from the second expert panel regarding the practicality of use of many of the original items: many need to be omitted.

Ranking the Composite Indicators

In this section, the best practice and composite indicators for a Masters Degree Program in Educational Administration in private higher education institutions in Thailand are ordered and discussed. For the single-round questionnaire, the medians, the three quartiles scores, and the means were

statistically analysed and presented. The computation of the fourth quartile or the highest quartile (Q_4), the third quartile (Q_3), the second quartile (Q_2) or the median, the first quartile (Q_1), and the mean were also obtained by SPSS 11.0 for Windows software. The aggregate scores (SUM) and the group mean and median scores for the fourth questionnaire ordered by their means are shown in Tables 5.12-5.18. The best practice and composite indicators and their variables for MEd Ed Admin programs in private higher education institutions in Thailand were thus constructed by each variable that had mean scores greater than 8.20.

The utility and usability aspects for the best practice and composite indicators and their variables for a Masters Degree Program in Educational Administration in private higher education institutions in Thailand are discussed in separate sections, below. The results indicated that there were four composite indicators that were the most desirable utility aspect of best practice and composite indicators in the viewpoints of the second expert panel. The first and second indicators were valuing faculty, staff, and partners; and visionary leadership composite indicators with their weighted scores of 25.38 per cent; and 25.00 per cent, respectively. The third and fourth indicators were learning-centred education and organisational and personal learning composite indicators with their weighted scores of 24.90 per cent and 24.71 per cent, respectively. In addition, for the usability aspect, two best practice and composite indicators were identified: visionary leadership; and learning-centred education composite indicators with their weighted scores of 49.78 per cent and 50.22 per cent, respectively. In some instances, material gathered from the semi-structured interviews (see below) has been included to amplify emerging issues.

Utility aspects

Valuing faculty, staff and partners

Valuing faculty, staff and partners composite indicator was, by consensus of the second expert panel, the most desirable utility aspect for best practice and composite indicators for effective quality management of the MEd Ed Admin program with its weighted score of 25.38 per cent. According to the findings, this composite indicator consisted of two input variables with a total weighted score of 16.90 per cent, and one process variable with a weighted score of 8.48 per cent. These data are contained in Table 5.12.

Valuing faculty, staff and partners: Input variables

The second expert panel identified two input variables that comprised the most desirable aspects for the valuing faculty, staff and partners best practice and composite indicator that were perceived to be evaluated for effective

TABLE 5.12   VALUING FACULTY, STAFF & PARTNERS: DESIRABLE UTILITY ASPECTS

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
	1 Valuing Faculty, Staff and Partners				**25.38**
	1.1 Input Variables				**16.90**
1	1 There is adequate funding for supporting the research.	284	9	8.35	8.51
2	4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	280	9	8.24	8.39
	1.2 Process Variables				**8.48**
1	1 Use faculty members performance evaluation as measures of their performance.	283	9	8.58	8.48

quality management of the MEd Ed Admin program. The first input variable was whether or not there is adequate funding for supporting the research. This is a measure of quality. They pointed out that it was essential that this item be included for not only could it promote and strengthen of the related research, but also arouse personnel positive attitudes toward their work. In delivering a program of the right quality and to stakeholders' satisfaction, there should be support for the strengthening of research and its function. The *raison d'être* for any form of research should be to enhance the core activity of the program, leading to the development of its intellectual capital.

The second variable was whether or not there is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria and evaluation process. This variable would assist in retaining and developing qualified faculty, as well as managing effective career progression for all faculty.

Valuing faculty, staff and partners: Process variables

The second expert panel identified one process variable as a most desirable process aspect of valuing faculty, staff and partners best practice and composite indicator: whether or not program leaders use faculty members performance evaluation as measures of their performance. The importance of this variable for the evaluating process was that it would increase morale and enable faculty to improve their performance.

Visionary leadership

The second expert panel identified the visionary leadership composite indicator as the second most desirable utility aspect for best practice and composite indicators for quality management performance measuring and comparing with its weighted score of 25.00 per cent. This composite indicator consists of two input variables with a total weighted score of 3.29 per cent; four process variables, and nine output variables with a two total

weighted score of 6.62 per cent and 15.09 per cent, respectively. These data are shown in Table 5.13.

TABLE 5.13   VISIONARY LEADERSHIP: DESIRABLE UTILITY ASPECTS

Rank	Items	Sum	Q_2 Median	Mean	Weighted Scores/%
	2 Visionary Leadership				**25.00**
	2.1 Input Variables				**3.29**
1	1 There is sufficient program resources information available.	288	9	8.47	1.67
2	3 There is sufficient faculty members competency data available.	280	8.5	8.24	1.62
	2.2 Process Variables				**6.62**
1	3 Use qualified systematic performance evaluation approach.	290	9	8.53	1.68
2	4 Set strategic plans in order to the aims set.	287	9	8.44	1.66
3	1 Use quality assurance information for continuous performance improvement.	282	8.5	8.29	1.63
4	2 Student and stakeholder satisfaction is used for continuous performance improvement.	282	9	8.29	1.63
	2.3 Output Variables				**15.09**
1	3 Program leaders serve as role models through their ethical behaviour.	303	9	8.91	1.76
2	2 Program leaders serve as role models through their competencies.	290	9	8.79	1.68
3	4 The goals for producing graduates emphasize the excellence of the program academic.	297	9	8.74	1.72
4	1 Teaching and learning plans relate to the curriculum.	296	9	8.70	1.72
5	6 Resources plans for strategic deployment are developed.	286	9	8.41	1.66
6	9 The teaching and learning plans balance market needs.	286	9	8.41	1.66
7	5 Qualified human resource plans are developed.	285	9	8.38	1.65
8	11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	281	9	8.26	1.63
9	7 The goals for producing graduates are practical.	279	8.5	8.21	1.62

Visionary leadership: Input variables

The findings indicate that there were two input variables that should be considered as visionary leadership best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

The two input variables were: whether or not there are sufficient program resources information available; whether or not there are sufficient faculty members competency data available. The first variable may be used to plan, seek additional resources needed, and for providing sufficient budget to enable and ensure the achievement strategic plans. The second variable may be used to ensure putting the teacher in the right job, and also planning to develop and utilise their full potential in alignment with program objectives, strategy, and action plans.

Visionary leadership: Process variables

The findings indicate that there are four process variables that should be considered as visionary leadership best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

The highest rated variable was whether or not program leaders use qualified systematic performance evaluation approach. This variable may be used to evaluate whether or not there was an increase in morale and whether or not a merit reward mechanisms provides for effective performance by program leaders. The second variable was whether or not the program sets strategic plans in order to achieve the aims set. It would examine how program leaders might choose strategic objectives and plans which would be deployed and changed if circumstances required.

The third variable was whether or not program leaders use quality assurance information for continuous performance improvement. It would ensure quality of program, quality of teaching and learning and quality of graduates, and future concerns.

The final variable was whether or not student and stakeholder satisfaction is used for continuous performance improvement.

Visionary leadership: Output variables

The findings indicate that there were nine output variables that should be considered as visionary leadership best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

The first and second variables were whether or not program leaders serve as role models through their ethical behaviour and their competencies. As role models, they would reinforce ethics, building leadership and initiative throughout a program.

The third variable was whether or not the goals for producing graduates emphasize the excellence of the academic program; the fourth whether or not teaching and learning plans relate to the curriculum; the fifth whether or not resources plans for strategic deployment are developed; the sixth whether or not the teaching and learning plans balance market needs; the seventh variable was whether or not qualified human resource plans are developed.

The eighth and ninth variables were whether or not teaching and learning plans are updated to change, such as, for changes in technology and in economics; and, the goals for producing graduates are practical, respectively. These helped to awaken more holistic and person-centred views of the educational process and make formal changes in the formal structure.

Learning-centred education

The second expert panel indicated that the learning-centred education composite indicator was the third most desirable utility aspect for best practice and composite indicators for effective quality management of the MEd Ed Admin program with a weighted score of 24.90 per cent. According to the findings, this indicator consisted of seventeen input variables with a total weighted score of 13.34 per cent; six process variables and nine output

variables with two total weighted scores of 4.66 per cent and 6.90 per cent, respectively. These data are contained in Table 5.14.

TABLE 5.14   LEARNING-CENTRED EDUCATION: DESIRABLE UTILITY ASPECTS

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
	3 Learning-Centred Education				**24.90**
	3.1 Input Variables				**13.34**
1	1 Curriculum objectives relate to the curriculum's philosophy.	307	10	9.30	0.82
2	5 Curriculum is appropriately designed to develop students' research competencies.	307	9	9.03	0.82
3	3 Curriculum philosophy relates to the program's vision.	297	9	9.00	0.80
4	4 Curriculum structure supports curriculum objectives.	306	9	9.00	0.82
5	8 Curriculum goals are problem-solving oriented.	300	9	8.82	0.80
6	6 The number of faculty with higher degrees meets the standard criteria.	299	9	8.79	0.80
7	2 Curriculum structure meets standard criteria.	298	9	8.76	0.80
8	10 There is an advisory system that is practicable in promoting all dimensions of student development.	296	9	8.70	0.79
9	12 Curriculum is well-designed for developing students having competencies for profession.	294	9	8.65	0.79
10	13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	294	9	8.65	0.79
11	14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	284	9	8.61	0.76
12	11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	290	9	8.53	0.78
13	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	286	9	8.41	0.77
14	7 There is an acceptable system for evaluating student performance.	284	9	8.35	0.76

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
15	16 There are sufficient elective subjects provided to meet students' needs.	283	8.5	8.32	0.76
16	15 Curriculum goals balance students' needs.	273	9	8.27	0.73
17	17 Curriculum objectives relate to public policy.	279	8	8.21	0.75
	3.2 Process Variables				**4.66**
1	1 Faculties teach in areas that are directly related to their field of specialisation.	304	9	8.94	0.81
2	3 Encourage good interactions with students.	295	9	8.68	0.79
3	8 Set appropriate criteria and standards for all students.	281	9	8.52	0.75
4	4 Provide opportunities for all concerned about curriculum content development to be heard.	287	9	8.44	0.77
5	5 Use systematically authentic evaluation approaches.	287	9	8.44	0.77
6	2 Teaching and learning process is research-oriented in its focus.	285	9	8.38	0.76
	3.3 Output Variables				**6.90**
1	3 Develop a high level of competency amongst the students in the use of information and computer technology.	297	9	8.74	0.80
2	6 Curriculum content is continuously developed.	297	9	8.74	0.80
3	5 Use formative assessment and evaluation approaches in teaching and learning process.	287	9	8.44	0.77
4	4 Use appropriate technologies in the teaching and learning process.	286	8	8.41	0.77
5	2 Develop a high level of competency in skills of problem-solving amongst the students.	277	9	8.39	0.74
6	10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	285	8	8.38	0.76
7	8 Per cent of students who graduate within expected time.	283	9	8.32	0.76
8	1 Students report that they are satisfied with the faculties' teaching and learning process.	282	8	8.29	0.76

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	281	8	8.26	0.75

Learning-centred education: Input variables

The findings indicate that there were seventeen input variables that should be considered as learning-centred education best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

The seventeen process variables are considered from highest to lowest in rating of desirability. The first to fifth variables are concerned with curriculum and curriculum development issues – whether or not: curriculum objectives relate to the curriculum's philosophy; curriculum is appropriately designed to develop students' research competencies; curriculum philosophy relates to the program's vision; curriculum structure supports curriculum objectives; and whether or not curriculum goals are problem-solving oriented. The sixth variable was whether or not the number of faculty with higher degrees meets the standard criteria. It was evaluated to ensure quality and effectiveness of instruction the number of faculty with higher degrees meets the standard criteria; in order to ensure quality and effectiveness of instruction.

The program's curriculum was considered for evaluation as the seventh variable: whether or not the curriculum structure meets standard criteria. The eighth variable was whether or not there is an advisory system that was practicable in promoting all dimensions of student development – an important curriculum consideration. The ninth and tenth variables were: whether or not curriculum is well-designed for developing students having

competencies for profession, and curriculum is well-designed for assisting students to become well-rounded administrators in education, respectively.

The eleventh to fifteenth variables were: whether or not there are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award; whether or not the curriculum is appropriately designed to develop students to be excellent academic leaders; faculty has knowledgeable in student-centred approach for teaching and learning process; whether or not there is an acceptable system for evaluating student performance; and, there are sufficient elective subjects provided to meet students' needs, respectively. All five variables should be evaluated in order to develop the fullest potential of all students and to afford them opportunities to pursue a variety of avenues to success by placing the focus of education on learning and the real needs of students.

The other two input variables were: curriculum goals balanced students' needs, and curriculum objectives relate to public policy. Intended to address the need for a responsible could extend program's service opportunities.

A member of the second expert panel provided related viewpoints regarding program leaders, and a concern that they should be more involved in curriculum development; effective implementation needed for an effective program. The need to plan effective curriculum is vital obvious because curriculum is at the heart of the MEd Ed Admin program process. Program leaders must be concerned with *what* should be included and *how* to present or arrange what was selected. In other words, they must first deal with content and subject matter, and then learning experiences; neither of these factors could be ignored.

Learning-centred education: Process variables

The findings indicate that there were six process variables that should be considered as learning-centred education best practice and composite

indicators for evaluating effective quality management of the MEd Ed Admin program.

The most important variable was whether or not faculty teach in areas that are directly related to their field of specialisation. Such a commitment ensures quality and effectiveness of teaching and learning process. The second variable was whether or not program leaders encourage good interactions with students. Such interaction is essential in order to understand students thus enhancing their learning. The third variable was whether or not program leaders set appropriate criteria and standards for all students. Such an action supports development of actionable standards of learning that affect all students.

The fourth variable was whether or not program leaders provided opportunities for all faculty concerned with curriculum content development to be heard. This was an essential factor in order to get successful curriculum development or establishment not only to convince all concerned to be more receptive than resistant to change, but also for overseeing curriculum organised into effective components: content, experiences, and environment. The fifth variable was whether or not faculty use systematically authentic evaluation approaches. Authenticity helps create learning trust and loyalty amongst students. The final process variable was whether or not teaching and learning process is research-oriented in its focus. Such an orientation enhances student research capabilities, and enables educational research to become part of the learning culture.

Learning-centred education: Output variables

The findings indicate that there were nine output variables that should be considered as learning-centred education best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

The nine variables are considered from highest to lowest in rating of desirability. The highest rated variable was whether or not program leaders and faculty develop a high level of competency amongst the students in the use of information and computer information; the second was whether or not curriculum content is continuously developed; the third was whether or not faculty use formative assessment and evaluation approaches in teaching and learning process; the fourth was whether or not faculty use appropriate technologies in the teaching and learning process; the fifth was whether or not faculty develop a high level of competency in skills of problem- solving amongst the students; the sixth variable was whether or not there is validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and/or in further learning; the seventh was concerned with the percentage of students who graduate within the expected time.

The eighth and ninth variables were whether or not students report that they are satisfied with the faculty's teaching and learning process, and whether or not students report that they are satisfied with the faculties' teaching and learning process. These final two variables are important in determining whether or not the educational deployment was success.

Organisational and Personal Learning

The organisational and personal learning composite indicator was, by consensus, the fourth most desirable utility aspect for best practice and composite indicator for effective quality management of the MEd Ed Admin program. Its weighted scores is of 24.71 per cent.

According to the findings, this indicator consisted of two input variables with a total weighted score of 5.40 per cent, four process variables with a total weighted score of 11.00 per cent, and three output variables with a total weighted score of 8.31 per cent. These data are contained in Table 5.15.

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TABLE 5.15   ORGANISATIONAL AND PERSONAL LEARNING: DESIRABLE UTILITY ASPECTS

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
	4 Organisational and Personal Learning				**24.71**
	4.1 Input Variables				**5.40**
1	1 There is sufficient resource, technology availability for organisation and personal learning.	273	8	8.27	2.70
2	3 There are validated processes designed to track progress on strategic goals.	273	8	8.27	2.70
	4.2 Process Variables				**11.00**
1	3 Reinforce the learning environment for students.	290	8.5	8.53	2.87
2	4 Reinforce the learning environment for faculty members performance improvement.	284	8.5	8.35	2.81
3	1 Promoting faculty members to create ideas for organisation performance improvement.	274	9	8.30	2.71
4	2 Provide opportunities to faculty members for continuous performance improvement.	264	8.5	8.25	2.61
	4.3 Output Variables				8.31
1	2 Evidence that faculty use teaching and learning assessment to improve their competencies.	281	9	8.26	2.78
2	5 Evidence that faculty use teaching and learning assessment to improve students' performance.	280	8	8.24	2.77
3	1 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	279	8.5	8.21	2.76

Organisational and personal learning: Input variables

The findings indicate that there were two input variables that should be considered as organisational and personal learning best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program: whether or not there are sufficient resources, including technology, available for organisational and personal learning; whether or not

there are validated processes designed to track progress towards strategic goals. These variables will indicate the extent to which the program has invested in organisational and personal learning for continuing program growth and development, and whether or not faculty members have the satisfaction and motivation to excel.

Organisational and personal learning: Process variables

The findings indicate that there were four process variables that should be considered as organisational and personal learning best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

The first process variable was whether or not program leaders and faculty reinforce the learning environment for students. The second variable was whether or not program leaders reinforce the learning environment for faculty members performance improvement. These were essential in order to evaluate whether or not program increased opportunities for personal learning and practicing new skills, especially in their work processes performance. The third variable was whether or not program leaders promote faculty members to create ideas for organisation performance improvement. It was helpful to not only convince faculty to be more receptive to change, rather than resistant; it could also improve receptivity to change among all participants. The fourth process variable was whether or not program leaders provide opportunities to faculty members for continuous performance improvement; this variable could demonstrate program leaders' commitment to the success of faculty and concerning work motivation in organisation.

Organisational and personal learning: Output variables

The findings indicate that there were three output variables that should be considered as organisational and personal learning best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

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The first and second variables were whether or not there was evidence that faculty use teaching and learning assessment to improve their competencies, and improve the program's performance results. The other variable was whether or not there was evidence that leaders use teaching and learning assessment to improve the program's performance results. These items aim to evaluate whether or not organisational learning has occurred that will improve existing approaches and make significant changes that lead to new goals and approaches; whether or not personal learning has occurred in the program; whether or not faculty have had opportunities for personal learning and practising new skills.

Usability aspects

Learning-centred education

From the usability aspect, the second expert panel rated the learning-centred education composite indicator as the best and most desirable indicator for effective quality management of the MEd Ed Admin program. Its total weighted score was 50.22 per cent. These data are shown in Table 5.16.

Learning-centred education: Input variables

The findings indicate that there were six input variables that should be considered as learning-centred education best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program.

The most first important variable was whether or not the curriculum structure meets standard criteria; second was the number of faculty with higher degrees meets the standard criteria; third was whether or not curriculum structure supports curriculum objectives; fourth was whether or not curriculum philosophy relates to the program's vision. The fifth variable was whether or not there is an acceptable system for evaluating student performance. The sixth variable was whether or not faculty members were

TABLE 5.16   LEARNING-CENTRED EDUCATION: DESIRABLE USABILITY ASPECTS

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
	2 Learning-Centred Education				**50.22**
	2.1 Input Variables				**43.26**
1	2 Curriculum structure meets standard criteria.	290	9	8.79	7.23
2	6 The number of faculty with higher degrees meets the standard criteria.	293	9	8.62	7.31
3	4 Curriculum structure supports curriculum objectives.	291	9	8.56	7.26
4	3 Curriculum philosophy relates to the program's vision.	289	9	8.50	7.21
5	7 There is an acceptable system for evaluating student performance.	286	9	8.41	7.13
6	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	285	9	8.38	7.11
	3.2 Process Variables				**6.96**
1	3 Encourage good interactions with students.	279	8	8.21	6.96

knowledgeable about the student-centred approach in the teaching and learning process. The second expert panel suggested that a student-centred approach would assist students in reaching their full potential. It would ensure that students would learn as much as possible − according to their aptitude, interest, and requirements. The approach requires analysis and consideration of students' problems and desires, adjusting teaching methods to ensure an improved result, and promoting the systematic development of various aspects of students in according to their individual potential.

In further discussion, the second expert panel indicated that the need to plan effective curriculum is most important for a learning-centred education approach. Curriculum is the heart of the program process and it important that all concerned in the program should be involved in curriculum matters. In addition, in Thailand, whenever programs are offered, they must have faculty members with higher degrees qualifications that meet the

standard criteria according to Announcement of the Ministry of Education Standard Criteria of Graduate Programs of 2005 which was in use to enforce the academic and professional standards and to serve as a part of the accreditation criteria. Moreover, within an effective program, the faculty should be able to perform effective assessment and measurement approaches and be able to use evaluation results to improve the management of learning and curriculum.

Learning-centred education: Process variable

The findings indicate that there was one process variable that should be considered as learning-centred education best practice and composite indicators for evaluating effective quality management of the MEd Ed Admin program: to encourage good interactions with students.

The importance of this variable for quality control was that good interactions with students encourage the provision valuable information about the program and to the faculty regarding the nature of the students. It encourages solving problems at their source, developing students to their fullest, providing them with guidelines and assistance to have an improved quality of life; attracting, satisfying, and retaining students and to increase student loyalty.

Visionary leadership

From the usability aspect, the second expert panel indicated that visionary leadership best practice and composite indicator, considered to be the second best, was the only other usable indicator.

Visionary leadership: Output variable

The findings indicate that there was one output variable that should be considered as a visionary leadership best practice and composite indicator for evaluating effective quality management of the MEd Ed Admin program: whether or not program leaders serve as role models through their ethical behaviour. This data is shown in Table 5.17.

TABLE 5.17   VISIONARY LEADERSHIP: DESIRABLE USABILITY ASPECT

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores/%
	1 Visionary Leadership				**49.78**
	1.3 Output Variables				**49.78**
1	3 Program leaders serve as role models through their ethical behaviour.	282	8	8.29	49.78

The panel believed that a preliminary qualification of effective leadership was that the leaders should be ethical leaders and conduct themselves as good role models, conduct themselves in compliance with professional ethics, and that they should promote and develop their colleagues to have appropriate ethics.

Semi-structured interviews

Six participants from the single-round survey were invited to participate in semi-structured interviews in order to seek elaboration on the underlying reasons for the selection of the composite indicators and best practice. Specifically, they were asked to give their recommendations, and to elaborate and reconsider their reasons for selecting the composite indicators and their variables and a statistical aggregate of the fourth questionnaire responses, by responding to the following questions:

1. What is your response, overall, to this listing? Do you agree with these rankings? Why?/Why not?

2. For those items whose rankings you agree with: What were your reasons for giving them a high/medium/low ranking?

3. For those items whose rankings you do not agree with: What ranking would you give them? What is the reason behind this change?

4. Choose an item from the listing that you have given a high rating. Tell me, in detail; how this item will assist in helping you establish the best practice and benchmarks for your course in educational administration.

The responses of each respondent to these questions are contained in Appendix A, Table A16. A content analysis was undertaken (see Tables 5.18-5.23, below) in order to clarify best practice and composite indicators for educational quality management for MEd Ed Admin Program in private higher education institutions in Thailand.

TABLE 5.18   CONTENT ANALYSIS: PARTICIPANT A

Serial	Participant A			
	Statement	**Issue**	**Concept**	**Theme**
1	A well-designed curriculum development. Curriculum should have a concern for educational profession standards.	• curriculum development	• well-designed curriculum	• curriculum is a concern of the educational profession
2	Try to meet all stakeholders and market expectations.	• stakeholders' and market needs	• needs derive from stakeholders' and market expectations	• needs assessment
3	Focus on students for research practicum.	• teaching and learning process	• research-oriented approach	• research practicum
4	Prepare student capabilities and competencies for future career path.	• curriculum development	• cognitive and competency-based curriculum	• can do the job skill, can learn to do ability, will do the job ability focus on structure components and their relationships
5	Focus on know-what and know-why aspects of education.	• teaching and learning	• critical thinking and problem solving	• know what and know why
6	Program leaders should have managerial knowledgeable.	• faculty's and staff's competency requirements	• knowledge-based of leaders	• management skills and related skills

Serial	Participant A			
	Statement	**Issue**	**Concept**	**Theme**
7	Have degrees required.	• human resource management	• personnel recruitment	• personnel selection
8	Have knowledge in educational administrative principles.	• management skills • leaders and leadership skills	• knowledge-based of leaders	• management skills and related skills
9	Can do research. Can be research supervisors.	• teaching and learning process	• research-oriented approach	• research practicum
10	Know how to make significant change to improve program.	• management skills • leaders and leadership skills	• knowledge-based of leaders	• management skills and related skills

TABLE 5.19   CONTENT ANALYSIS: PARTICIPANT B

Serial	Participant B			
	Statement	**Issue**	**Concept**	**Theme**
1	Try to meet all stakeholders and market expectations.	• stakeholders' and market needs	• needs derive from stakeholders' and market expectations	• needs assessment
2	Find stakeholders' needs.	• stakeholders' needs	• needs derive from stakeholders' needs	• needs assessment
3	Faculty should be qualified.	• teaching skills	• knowledge-based of faculty	• teaching skills and related skills
4	A well-developed curriculum. Curriculum should be text-based learning, work-based learning, and seminar-based learning.	• curriculum development	• cognitive and competency-based curriculum	• can do the job skill, can learn to do ability, will do the job ability focus on structure components and their relationships
5	Students graduate within their expected time.	• teaching and learning	• lesson plan	• educational management skills • teaching skills and related skills
6	Use students' work-place problem, their real interest concerns for their thesis or independent studies.	• teaching and learning	• critical thinking and problem solving	• know what and know why

Serial	Participant B			
	Statement	**Issue**	**Concept**	**Theme**
7	Visionary leadership based on leaders' capacities on managing program under changes and dynamics conditions.	• management skills • leaders and leadership	• knowledge-based of leaders	• management skills and related skills

TABLE 5.20   CONTENT ANALYSIS: PARTICIPANT C

Serial	Participant C			
	Statement	**Issue**	**Concept**	**Theme**
1	Enhancing students' research knowledge and skills. Faculty do research with their students. Program supports faculty to do the research. Becoming well-recognized research program.	• teaching and learning process	• research-oriented approach	• research practicum
2	Close relationship with students.	• teaching and learning process	• customer-relationship management	• learning-centred education
3	Up-dated curriculum by examining in a timely manner.	• curriculum development	• curriculum evaluation	• curriculum modifying
4	Program leaders understand subject contents regarding to in what students should know, who should teach, what resources should be available, and how they can be assessed.	• management skills	• knowledge-based of leaders	• management skills and related skills
5	Students have opportunities to inform any problems and/or feedback information.	• teaching and learning	• learning-centred education	• democratic learning climate
6	Program leaders should confidence in what they say to their students.	• ethics of leaders	• performance ethics	• legal and social ethics
7	Number of students is matching for program capacities/classes.	• teaching and learning	• classroom management	• educational quality management
8	All subjects require students' research works.	• teaching and learning	• research-oriented approach	• research practicum
9	Faculty should always be developed.	• human resource management	• training and development	• organisation development

Serial	Participant C			
	Statement	**Issue**	**Concept**	**Theme**
10	Use faculty's research results and students' feedback information in order to improve quality of teaching and learning process.	• program management	• program improvement	• formative evaluation

TABLE 5.21   CONTENT ANALYSIS: PARTICIPANT D

Serial	Participant D			
	Statement	**Issue**	**Concept**	**Theme**
1	Have qualified domestic and foreign faculty.	• human resource management	• faculty recruitment	• personnel selection
2	Use all stakeholders' information and feedbacks to improve program performance by its own special established department.	• program management	• program improvement	• formative evaluation
3	Have strategic plans for staff and faculty development.	• human resource management	• training and development	• organisation development
4	Concerning processes for students' development.	• teaching and learning	• learning-centred education	• formative and summative assessment
5	Use teaching and learning assessment results and students' feedbacks to improve teaching and learning process.	• program management	• program improvement	• formative evaluation
6	Encourage faculty do research and use research /experiences in their teaching and learning process.	• program management	• faculty tune-up competency	• encourage and support faculty to do research
7	Curriculum is developed by all concerned.	• curriculum development	• well-designed curriculum	• all concerned involve in curriculum development process

TABLE 5.22   CONTENT ANALYSIS: PARTICIPANT E

Serial	Participant E			
	Statement	**Issue**	**Concept**	**Theme**
1	• Have qualified and be professional faculty with ethics minds.	• program management	• professional ethics	• legal and social ethics
2	• Have well-designed curriculum related to Commission on Higher Education standard criteria.	• curriculum development	• well-designed curriculum	• curriculum to be concerned with standard criteria from the Commission on Higher Education
3	• Have sufficient resources available and good environment for teaching and learning process.	• program management	• resource management	• resource management and budget allocation
4	• Have qualified and be professional program leaders.	• management skills • leaders and leadership	• knowledge-based of leaders	• management skills and related skills
5	• Program policies are support by its institution senior administrators.	• program management	• congruent with institution plan	• visionary leadership

TABLE 5.23   CONTENT ANALYSIS: PARTICIPANT F

Serial	Participant F			
	Statements	**Issues**	**Concepts**	**Themes**
1	All concerned to be involved in the curriculum development process. Curriculum is well-designed covered all knowledge and students' competencies needed.	• curriculum development	• cognitive and competency-based curriculum	• curriculum development process
2	Have qualified faculty and be well-developed.	• human resource management	• personnel recruitment	• personnel selection, training and development
3	Have sufficient resources available.	• resource management	• resource management	• resource management and budget allocation

Serial	Participant F			
	Statements	**Issues**	**Concepts**	**Themes**
4	Have qualified evaluation approaches for resource allocation, budget expenditure, quality of research, publications, included visionary leadership.	• program evaluation	• pre-evaluation, ongoing-evaluation and post-evaluation	• management and evaluation skills
5	Program leaders encourage and support faculty do research and write qualified papers.	• program management	• faculty tune-up competency	• encourage and support faculty to do research
6	Have qualified management team.	• team building	• team-work	• sharing and accountability
7	Program leaders develop relationship with all related partnerships.	• teaching and learning process	• customer-relationship management	• learning-centred education

The researcher commenced each of the six semi-structured interviews procedure by presenting the participant with the single-round survey group questionnaire responses, explaining the statistical criteria that were used to condense the raw data and illustrating the five-class ranges and the rank classifications. Full details of the statistical analysis of responses of the single-round survey are contained in Appendix A, Tables A12-A13.

The participants confirmed their ratings and were in almost complete agreement with those responses of the group involved in the single-round survey findings, except that they disagreed with the low group response on the variable associated within the visionary leadership composite indicator, for the usability aspect: 'There is sufficient stakeholders' needs information available'. They suggested that this variable was an essential component for this composite indicator as it was a 'signpost' that indicated whether or not the leader had data and information from the stakeholders to use in their decision-making in regard to meeting stakeholder's expectations.

They pointed out that the low rating given by the first expert group – which contrasted with the high ratings given for having students' and market needs information for effective visionary leadership – might have arisen

because some believed that there were many groups of stakeholders to be considered; thus, it was difficult and costly to obtain all such information.

Reasons advanced for utility aspect rankings

The results of the aggregate scores of composite indicators, from the viewpoint of the six participants, resulted in different rankings for the utility aspect; these data are contained in Table 5.24. For the utility aspect, the composite indicators, ranked from highest to lowest, were as follows: valuing faculty, staff, and partners; visionary leadership; learning-centred education; and organisational and personal learning.

Reasons underlying the utility aspect rankings focused on the effectiveness and quality management of the Masters Degrees programs being dependent upon having highly qualified faculty. Faculty were viewed as the most valuable asset of these programs; investment and development are critical to achieving the programs' missions and goals. Mr. D suggested that every program must seek qualified and distinguished faculty members, especially full-time Thai and foreign faculty who are well-known and who would produce work that would be influential and prestigious. Mr. E and Mr. F stressed that qualified faculty members must comply with the professional ethics of teaching.

TABLE 5.24   THE SINGLE-ROUND SURVEY: THE SIX PARTICIPANTS
QUESTIONNAIRE RESULTS FOR UTILITY ASPECT

Rank	Composite Indicator		Utility		
			Sum	Q2 Median	Mean
1	4	**Valuing Faculty, Staff, and Partners**	55	9.50	9.17
2	1	**Visionary Leadership**	54	9	9.00
3	2	**Learning-centred Education**	52	8.50	8.67
4	3	**Organisational and Personal Learning**	52	8.50	8.67

All six participants pointed out that faculty members performance should be evaluated, and professional development should be practical. If there was a lack of qualified personnel, resulting in low performance, the approach of human resource management should be reconsidered immediately.

The participants agreed that program resources should be available at any time to students who needed them. Program leaders should be aware and have available information of program resources in order to plan for and seek the additional resources needed; thus, budget allocation should be sufficient and reviewed regularly to enable and ensure the achievement of planned strategic initiatives and targets.

Visionary leadership

The participants agreed that visionary leadership should be evaluated by the following: considering the program vision; how curriculum is developed and the teaching and learning process is managed; how the program balances students', stakeholders' and market needs, and how readily it can be updated to cope with change. They stressed that program leaders must serve as role models through their competencies and ethical behaviour. Mr. B argued that visionary leadership output for private higher education institutions should be concerned with the quality of teaching and learning, and with strategies. It should be able to support all students, enabling them to graduate within the minimum time.

Mr. F pointed out that, in considering private higher education in Thailand, 'quality' means 'excellence and low cost'. He stressed that quality assurance had to be concerned before the program commences. As a consequence, the quality of the programs needs to be related at all levels to the standard criteria established by the Commission on Higher Education.

Learning-centred education

Curriculum, teaching and learning process and resources, assessment and measurement activities represent the factors that lead to improved student learning. Effective learning-centred education occurs when program goals and actions support student learning and needs of students. Mr. C suggested a way to help research or thesis masters degree students to complete their research projects on time or help them continue their study to PhD level. The faculty should encourage their students to work collaboratively on their projects, with faculty members sharing their know-how on how to undertake research.

Mr. A emphasised that in order to meet societal expectations and have programs accepted, new programs should focus on Masters' graduates in Educational administration having experiences in 'know-how' rather than a concentration on 'know-what' and 'know-why' approaches. One of the evaluation approaches recommended was the use of peer evaluation in order to provide information for continuous quality improvement.

Organisational and personal learning

In relation to the organisational and personal learning composite indicator, the participants felt that it was important for the program to ensure that effective organisational and personal learning occurred. The program should motivate its personnel and students to participate in personal learning and continuous improvement processes. Personal improvement affects not only organisation and services, but leads to program personnel being more flexible, adaptive, and responsive to the needs of the program, its students and the stakeholders.

Reasons advanced for usability aspect rankings

With respect to the usability aspect, the rankings, in descending order, were as follows: valuing faculty, staff, and partners; learning-centred education;

visionary leadership; organisational and personal learning composite indicators. These data are contained in Table 5.25.

Valuing faculty, staff and partners; Learning-centred education

The six participants ranked valuing faculty, staff, and partners, and learning-centred education composite indicators first and second, respectively. They pointed out that effective programs depend on how well the curriculum and teaching-learning processes are provided with appropriate resources and qualified faculty. These are dependent on investment and program development to ensure achievement of the programs' mission and goals. A major consideration in performance improvement and change management ran through both of these composite indicators: how well the programs placed the focus of education on learning and the real needs of students; how well the programs empower and involve their workforce.

Visionary leadership: Organisational and personal learning

According to the visionary leadership and organisational and personal learning composite indicators, the findings indicated that a major consideration was how well the program leaders created and shared their vision; and whether or not there was a visible commitment of students and stakeholders to the principles and practices of continuous improvement and

TABLE 5.25   THE SINGLE-ROUND SURVEY: THE SIX PARTICIPANTS QUESTIONNAIRE RESULTS FOR USABILITY ASPECT

Rank	Composite Indicator		Usability		
			Sum	Q2 Median	Mean
1	4	Valuing Faculty, Staff, and Partners	52	9	8.27
2	2	Learning-centred Education	50	8.50	8.33
3	1	Visionary Leadership	49	8	8.17
4	3	Organisational and Personal Learning	49	8	8.17

performance excellence. Best practice and organisational and personal learning composite indicators need to indicate how well the program succeeds in encouraging its personnel and students to participate in personal learning and continuous improvement processes.

Findings on best practice and composite indicators

The best practice elements to emerge from the six semi-structured interviews, are discussed in the sub-sections below.

Visionary leadership

From a visionary leadership perspective, the knowledge- and competencies-bases of leaders should be set and applied during recruitment, and in selection, training and development processes for qualified program leaders. Leaders should serve as role models through their ethical behaviour and in the application of their competencies and skills. As role models, they can reinforce ethics, values, and expectations while building leadership, commitment, and initiative through their program. Leaders should have skills in team management and be able to create efficient and effective teams. In addition, program leaders should have experience in three phases of evaluation: pre-evaluation, ongoing evaluation and post-evaluation. They should also have the ability to use evaluation results for improving the efficiency and effectiveness of key processes. Program leaders must be able to prepare programs at an appropriate level, and make available appropriate teaching and learning resources as required, including reinforcement of the learning environment in the program. Program policies must be supported by the institution's senior administrators.

Valuing faculty, staff and partners

The Program should have appropriate and qualified faculty. Professional ethics should always be kept in mind by program personnel. Efficient and effective human resource management is required. All programs should contain action plans for faculty recruitment, selection, retention, training and

development. Appropriate motivation of all faculty should be an integral part of all programs. The Program should support faculty in undertaking research in order to provide ever-improving educational value to students, their career paths, and also, to improve all educational and operational processes. Finally, the Program should focus on how to integrate research into all parts of the learning and program culture.

Learning-centred education

Learning-centred education should be practised. Stakeholders' and market needs should be assessed and attempts made to meet these needs. A customer related management approach should be implemented. A cognitive and competency-based curriculum focused on critical thinking and problem solving should be implemented that includes a research-oriented approach focusing on all aspects of the Program. Curriculum should be developed and reviewed on a regular basis; at all times, it must be well-designed. The Program should be well-planned with respect to both teaching and learning processes and management. It should include an effective evaluation approach, using evaluation outcomes for program and faculty improvement.

Organisational and personal learning

Program improvement should be a major concern. Improvement in education requires a strong emphasis on effective design of the educational program, curriculum, and learning environments. The overall design should include learning objectives, taking account the needs of stakeholders, students and the market, and also, its personnel training and other opportunities for continuing growth and development.

Summary

The four best practice and composite indicators – visionary leadership; learning-centred education; organisational and personal learning; and valuing faculty, staff and partners – were tested by subsequence survey work for

practicality and selected in order to be used to be evaluands to create and/or be used to provide information to set effective quality management for the MEd Ed Admin program. There were differences of opinion between the first (Delphi) expert team, and the second expert team and the six participants who were interviewed, with respect to utility and usability aspects. These differences have been identified and, as a result, specific items that may be used as evaluands which express the concerns of the evaluators and key stakeholders, set benchmarks for continuous improvement or achieving of a sustainable program and prepare all concerned with both internal and external quality assurance evaluation and investigation have been identified. A synthesis of these is considered in the next chapter.

CHAPTER 6

Findings and Recommendations

Introduction

In this chapter, the major findings from the study related to the following best practice and composite indicators – visionary leadership; learning-centred education; organisational and personal learning; valuing faculty, staff, and partners to the three Delphi survey questionnaires and to the single- round survey questionnaire in terms of the 'utility' aspect – are synthesised with a content analysis from semi-structured interviews of six participants to ensure their validity and practicability. This synthesis assists in providing front-end decision-making about the structure and content of policies and programs both a new program and the existing programs for effective Masters Degree program in educational administration (MEd Ed Admin Program) in private higher education institutions in Thailand.

The Delphi Survey

The Delphi survey of the first expert panel provided consensus information in order to construct best practice and composite indicators and their variables for educational quality management for a Masters Degrees Program in Educational Administration in private higher education institutions in Thailand. There were four best practice and composite indicators established for effective MEd Ed Admin Program, namely visionary leadership,

learning-centred education, organisational and personal learning, and valuing faculty, staff and partners.

The Delphi consensus items selected consisted of items that had a group mean score above 8.20; the four best practice and composite indicators and their variables were ranked according to their mean scores. The percentage weighted scores of each best practice and composite indicator and their variables were computed based on their total aggregate score ratings (see Chapter 4).

These four best practice and composite indicators and their variables – input, process, and output variables – in terms of the 'utility' aspect were categorised. The highest ranked best practice and composite indicator, visionary leadership, achieved a weighted score of 25.85 per cent. It comprised four input variables with a total weighted score of 3.15 per cent, fourteen process variables with a total weighted score of 11.39 per cent, and fourteen output variables with a total weighted score of 11.31 per cent. The second best practice and composite indicator, with a weighted score of .28 per cent, was learning-centred education. It comprised twenty-one input variables with a total weighted score of 13.41 per cent, eight process variables with a total weighted score of 4.99 per cent, and eleven output variables with a total weighted score of 6.88 per cent. The organisational and personal learning and the valuing faculty, staff and partners best practice and composite indicators had weighted scores of 24.72 per cent and 24.15 per cent, respectively. The organisational and personal learning best practice and composite indicator comprised four input variables with a total weighted score of 9.09 per cent; four process variables with a total weighted score of 8.78 per cent; and, three output variables with a total weighted score of 6.85 per cent. The valuing faculty, staff and partners best practice and composite indicator comprised six input variables with a total weighted score of 7.41 per cent; three process variables with a total weighted score of 3.64 per cent; and, eleven output variables with a total weighted score of 13.10 per cent.

The findings based on this Delphi survey of the first expert panel implied that the existing MEd Ed Admin program leaders needed to have data and information in order to provide evidence for the following:

- to aid the synthesis of programs;

- to evaluate how well personnel accomplished the work of these programs;

- to determine how good was the performance and outcomes of these programs;

- whether not the programs met stakeholders' and students requirements;

- whether or not the programs supported quality concerns and policy decisions;

- what was required to sustain and develop the programs, as well as guiding decisions for new and effective programs.

The Single-Round Survey

The Delphi survey findings were tested for practicality by thirty-four administrators and lecturers involved in the teaching of Educational Administration and related fields in private higher education institutions in Thailand for a single-round survey; this selection was further elaborated on, via semi-structured interviews, by six participants selected randomly from the group of thirty-four.

The single-round survey questionnaire was constructed according to the results of the Delphi survey. The researcher employed the same criteria that were used to determine the best practice and composite indicators and their variables for analysing and evaluating the data from this single-round survey. The group mean scores were categorised to establish best practice

and composite indicators and their variables: these items had a group mean score above 8.20.

The best practice and composite indicators for effective MEd Ed Admin program in private higher education institutions in Thailand in this survey work were firstly selected in terms of their 'utility' aspect. They were ranked according to the ratings of the second expert panel; these rankings were confirmed by the six participants' responses. The first and second best practice and composite indicators, ranked according to their respective weighted scores of 25.38 and 25.00 per cent, were: valuing faculty, staff, and partners; visionary leadership. The third and fourth best practice and composite indicators, ranked according to their respective weighted scores of 24.90 and 24.71 per cent, were: learning-centred education; organisational and personal.

The valuing faculty, staff and partners best practice and composite indicator consisted of two input variables with a total weighted score of 16.90 per cent, and also, one process variables with its total weighted score of 8.48 per cent.

The visionary leadership best practice indicator consisted of two input variables with a total weighted score of 3.29 per cent, and four process variables and nine output variables with total weighted scores of 6.62 and 15.09 per cent, respectively.

The learning-centred education best practice and composite indicator consisted of seventeen input variables with a total weighted score of 13.34 per cent, and also, six process variables and nine output variables with their two total weighted scores were 4.66 and 6.90 per cent, respectively.

Finally, the organisational and personal learning best practice and composite indicator consisted of two input variables with a total weighted score of 5.40 per cent, four process variables with a total weighted score of 11.31 per cent, and two output variables with a total weighted scores of 8.31 per cent, respectively (see Chapter 5).

The visionary leadership best practice and composite indicator focused on leadership's key responsibilities for guiding and sustaining the organisation, and for overseeing its ethical stewardship. The learning-centred education best practice and composite indicator focused on creating teaching and learning, and on trying to response to the real needs of students and all stakeholders which lead to students' and key stakeholders' satisfaction and loyalty, and also, long-term program success. The organisational and personal learning best practice and composite indicator indicated how, and how well, the program selected, analysed, managed, evaluated, reviewed its performance and improved through its data, information, and knowledge assets. The valuing faculty, staff and partners best practice and composite indicator examined, how and how well, the program recruited, and selected, developed, promoted its personnel and maintained a work environment and support climate in order to achieve personal performance continuous improvement and to achieve personal and organisational growth.

These four best practice and composite indicators and their variables could be used to provide information to assist decisions about a future or projected program and/or an existing program that requires for a major review. Also, they could provide evidence for the improvement process as a result of internal quality assurance evaluation and prepare for external quality assurance evaluation and/or external investigation to the program.

Best Practice and Composite Indicators

The researcher compared the best practice and composite indicators in terms of the 'utility' aspect from the two sets of findings – the Delphi survey of the first expert panel, and the second single-round expert panel survey supported by semi-structured interviews – and synthesised the two sets of items in order to construct the best practice and composite indicators for educational quality management for the MEd Ed Admin programs in private higher education institutions in Thailand. The comparison of items is contained in Table 6.1.

TABLE 6.1   COMPARISON OF DELPHI SURVEY FINDINGS AND SINGLE-ROUND SURVEY RESULTS

Delphi Survey Findings	The Single-Round Survey Results
1 Visionary Leadership	**1 Visionary Leadership**
1.1 Input variables	**1.1 Input variables**
1 There is sufficient program resources information available.	1 There is sufficient program resources information available.
2 There is sufficient appropriate students' needs information available.	
3 There is sufficient faculty members competency data available.	2 There is sufficient faculty members competency data available.
4 There is sufficient stakeholders' needs information available.	
1.2 Process variables	**1.2 Process variables**
1 Use quality assurance information for continuous performance improvement.	3 Use quality assurance information for continuous performance improvement.
2 Student and stakeholder satisfaction is used for continuous performance improvement.	4 Student and stakeholder satisfaction is used for continuous performance improvement.
3 Use qualified systematic performance evaluation approach.	1 Use qualified systematic performance evaluation approach.
4 Set strategic plans in order to achieve the aims set.	2 Set strategic plans in order to achieve the aims set.
5 Reform organisation using qualified management approaches.	
6 Encourage faculty members to develop and learn.	
7 All concerned are involved in vision development.	
8 Focus on participative management.	
9 Use program performance review for continuous improvement.	
10 Encourage faculty members to be creative.	
11 All concerned contribute to reach the vision.	
12 Share knowledge between team members.	
13 Encourage faculty members to be innovators.	
14 Student and stakeholder dissatisfaction is promptly solved.	

Delphi Survey Findings	**The Single-Round Survey Results**
1.3 Output variables	**1.3 Output variables**
1 Teaching and learning plans relate to the curriculum.	4 Teaching and learning plans relate to the curriculum.
2 Program leaders serve as role models through their competencies.	2 Program leaders serve as role models through their competencies.
3 Program leaders serve as role models through their ethical behaviour.	1 Program leaders serve as role models through their ethical behaviour.
4 The goals for producing graduates emphasize the excellence of the program academic.	3 The goals for producing graduates emphasize the excellence of the program academic.
5 Qualified human resource plans are developed.	7 Qualified human resource plans are developed.
6 Resources plans for strategic deployment are developed.	5 Resources plans for strategic deployment are developed.
7 The goals for producing graduates are practical.	9 The goals for producing graduates are practical.
8 The goals for producing graduates keep faith with the stakeholders' expectations.	
9 The teaching and learning plans balance market needs.	6 The teaching and learning plans balance market needs.
10 The goals for producing graduates balance the needs of stakeholders.	
11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	8 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.
12 Teaching and learning plans are relevant to educational business conditions.	
13 The number of functional departments is assessed.	
14 The number of functional departments is accredited.	
2 Learning-centred Education	**2 Learning-Centred Education**
2.1 Input variables	**2.1 Input variables**
1 Curriculum objectives relate to the curriculum's philosophy.	1 Curriculum objectives relate to the curriculum's philosophy.
2 Curriculum structure meets standard criteria.	7 Curriculum structure meets standard criteria.
3 Curriculum philosophy relates to the program's vision.	3 Curriculum philosophy relates to the program's vision
4 Curriculum structure supports curriculum objectives.	4 Curriculum structure supports curriculum objectives.
5 Curriculum is appropriately designed to develop students' research competencies.	2 Curriculum is appropriately designed to develop students' research competencies.

Delphi Survey Findings	**The Single-Round Survey Results**
6 The number of faculty with higher degrees meets the standard criteria.	6 The number of faculty with higher degrees meets the standard criteria.
7 There is an acceptable system for evaluating student performance.	14 There is an acceptable system for evaluating student performance.
8 Curriculum goals are problem-solving oriented.	5 Curriculum goals are problem-solving oriented.
9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	13 Faculty has knowledgeable in student-centred approach for teaching and learning process.
10 There is an advisory system that is practicable in promoting all dimensions of student development.	8 There is an advisory system that is practicable in promoting all dimensions of student development.
11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	12 Curriculum is appropriately designed to develop students to be excellent academic leaders.
12 Curriculum is well-designed for developing students having competencies for profession.	9 Curriculum is well-designed for developing students having competencies for profession.
13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	10 Curriculum is well-designed for assisting students to become well-rounded administrators in education.
14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	11 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.
15 Curriculum goals balance students' needs.	16 Curriculum goals balance students' needs.
16 There are sufficient elective subjects provided to meet students' needs.	15 There are sufficient elective subjects provided to meet students' needs.
17 Curriculum objectives relate to public policy.	17 Curriculum objectives relate to public policy.
18 Curriculum goals focus on a various assessment approach.	
19 There is acceptable system for monitoring student progress.	
20 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	
21 There is a sufficient amount of appropriate physical resources.	
2.2 Process variables	**2.2 Process variables**
1 Faculties teach in areas that are directly related to their field of specialization.	1 Faculties teach in areas that are directly related to their field of specialization.
2 Teaching and learning process is research-oriented in its focus.	6 Teaching and learning process is research-oriented in its focus.

Delphi Survey Findings	The Single-Round Survey Results
3 Encourage good interactions with students.	2 Encourage good interactions with students.
4 Provide opportunities for all concerned about curriculum content development to be heard.	4 Provide opportunities for all concerned about curriculum content development to be heard.
5 Use systematically authentic evaluation approaches.	5 Use systematically authentic evaluation approaches.
6 Provide student with opportunities to select their subjects based on their interests.	
7 Set high expectations for all students.	
8 Set appropriate criteria and standards for all students.	3 Set appropriate criteria and standards for all students.
2.3 Output variables	**2.3 Output variables**
1 Students report that they are satisfied with the faculties' teaching and learning process.	8 Students report that they are satisfied with the faculties' teaching and learning process.
2 Develop a high level of competency in skills of problem-solving amongst the students.	5 Develop a high level of competency in skills of problem-solving amongst the students.
3 Develop a high level of competency amongst the students in the use of information and computer technology.	1 Develop a high level of competency amongst the students in the use of information and computer technology
4 Use appropriate technologies in the teaching and learning process.	4 Use appropriate technologies in the teaching and learning process.
5 Use formative assessment and evaluation approaches in teaching and learning process.	3 Use formative assessment and evaluation approaches in teaching and learning process.
6 Curriculum content is continuously developed.	2 Curriculum content is continuously developed.
7 The proportions of students' papers, research articles are published in national and international academic journals.	
8 Percentage of students who graduate within expected time.	7 Percentage of students who graduate within expected time.
9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.
10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and/or in further learning.	6 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and/or in further learning.

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Delphi Survey Findings	**The Single-Round Survey Results**
11 Per cent of students report that grading and assessing process allowed them to actually demonstrate what they new.	
3 Organisational and personal learning	**3 Organisational and Personal Learning**
3.1 Input variables	**3.1 Input variables**
1 There is sufficient resource, technology availability for organisation and personal learning.	1 There is sufficient resource, technology availability for organisation and personal learning.
2 There is sufficient validated information to indicate whether or not learning is taking place.	
3 There are validated processes designed to track progress on strategic goals.	2 There are validated processes designed to track progress on strategic goals.
4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	
3.2 Process variables	**3.2 Process variables**
1 Promoting faculty members to create ideas for organisation performance improvement.	3 Promoting faculty members to create ideas for organisation performance improvement.
2 Provide opportunities to faculty members for continuous performance improvement.	4 Provide opportunities to faculty members for continuous performance improvement.
3 Reinforce the learning environment for students.	1 Reinforce the learning environment for students.
4 Reinforce the learning environment for faculty members performance improvement.	2 Reinforce the learning environment for faculty members performance improvement.
3.3 Output variables	**3.3 Output variables**
1 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	3 Evidence that leaders use teaching and learning assessment to improve the program's performance results.
2 Evidence that faculty use teaching and learning assessment to improve their competencies.	1 Evidence that faculty use teaching and learning assessment to improve their competencies.
3 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	
4 Valuing faculty, staff, and partners	**4 Valuing Faculty, Staff and Partners**
4.1 Input variables	**4.1 Input variables**
1 There is adequate funding for supporting the research.	1 There is adequate funding for supporting the research.

Delphi Survey Findings	**The Single-Round Survey Results**
2 There is a validated faculty members performance evaluation approach.	
3 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	
4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	2 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.
5 There is adequate funding for supporting the innovation project.	
6 There is evidence of the evaluation of the progress of internal and external partnerships designed to assist in adapting to new conditions.	
4.2 Process variables	**4.2 Process Variables**
1 Use faculty members performance evaluation as measures of their performance.	1 Use faculty members performance evaluation as measures of their performance.
2 Implement human resources plan.	
3 Use decentralisation and empowerment to assist in the overcoming of problems.	
4.3 Output variables	**4.3 Output variables**
1 Research innovation supported by internal grants.	
2 Research innovation supported by external grants.	
3 Strategic plans are developed by all concerned.	
4 Evidence that program leaders motivate faculty members developing and utilising their full potential.	
5 There is faculty members development activities organised for research embarking.	
6 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	
7 Evidence of responding to improve students' educational needs in a timely manner.	
8 Evidence that program leaders make efforts to conduct performance excellences.	

	Delphi Survey Findings	The Single-Round Survey Results
9	Evidence of faculty response to improve students' learning performance in a timely manner.	
10	Evidence of responding to program's improving performance in a timely manner.	
11	The proportion of the cooperation among senior leaders, faculty, and staff is success.	

The researcher selected those items that were selected by both survey groups to construct the final set of best practice and composite indicators for educational effectiveness and quality management for the MEd Ed Admin programs in private higher education institutions in Thailand – the essential element of Research Question 3.

The synthesis resulted in the identification of four best practice and composite indicators with fifty-eight variables, each of which was categorised as either an input, a process, or an output variable. The resulting composite indicators and their variables are shown in Figure 6.1:

FIGURE 6.1   BEST PRACTICE AND COMPOSITE INDICATORS AND THEIR VARIABLES

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1   Visionary Leadership

1.1   Input variables

1.1.1   There is sufficient program resources information available.
1.1.2   There is sufficient faculty members competency information available.

1.2   Process variables

1.2.1   Use quality assurance information for continuous performance improvement.
1.2.2   Student and stakeholder satisfaction is used for continuous performance improvement.
1.2.3   Use qualified systematic performance evaluation approach.
1.2.4   Set strategic plans in order to achieve the aims set.

1.3   Output variables

1.3.1   Teaching and learning plans relate to the curriculum.
1.3.2   Program leaders serve as role models through their competencies.

1.3.3	Program leaders serve as role models through their ethical behaviour.
1.3.4	The goals for producing graduates emphasize the excellence of the program academic.
1.3.5	Qualified human resource plans are developed.
1.3.6	Resources plans for strategic deployment are developed.
1.3.7	The goals for producing graduates are practical.
1.3.8	The teaching and learning plans balance market needs.
1.3.9	Teaching and learning plans are updated to change, such as, for changes in technology and in economies.

2   Learning-centred Education

2.1   Input variables

2.1.1	Curriculum objectives relate to the curriculum's philosophy.
2.1.2	Curriculum structure meets standard criteria.
2.1.3	Curriculum philosophy relates to the program's vision.
2.1.4	Curriculum structure supports curriculum objectives.
2.1.5	Curriculum is appropriately designed to develop students' research competencies.
2.1.6	The number of faculty with higher degrees meets the standard criteria.
2.1.7	There is an acceptable system for evaluating student performance.
2.1.8	Curriculum goals are problem-solving oriented.
2.1.9	Faculty has knowledgeable in student-centred approach for teaching and learning process.
2.1.10	There is an advisory system that is practicable in promoting all dimensions of student development.
2.1.11	Curriculum is appropriately designed to develop students to be excellent academic leaders
2.1.12	Curriculum is well-designed for developing students having competencies for profession.
2.1.13	Curriculum is well-designed for assisting students to become well-rounded administrators in education.
2.1.14	There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.
2.1.15	Curriculum goals balance students' needs.
2.1.16	There are sufficient elective subjects provided to meet students' needs.
2.1.17	Curriculum objectives relate to public policy.

2.2   Process variables

2.2.1	Faculties teach in areas that are directly related to their field of specialization.
2.2.2	Teaching and learning process is research-oriented in its focus.
2.2.3	Encourage good interactions with students.
2.2.4	Provide opportunities for all concerned about curriculum content development to be heard.
2.2.5	Use systematically authentic evaluation approaches.
2.2.6	Set appropriate criteria and standards for all students.

2.3   Output variables

2.3.1   Students report that they are satisfied with the faculties' teaching and learning process.

2.3.2   Develop a high level of competency in skills of problem-solving amongst the students.

2.3.3   Develop a high level of competency amongst the students in the use of information and computer technology.

2.3.4   Use appropriate technologies in the teaching and learning process.

2.3.5   Use formative assessment and evaluation approaches in teaching and learning process.

2.3.6   Curriculum content is continuously developed.

2.3.7   Per cent of students who graduate within expected time.

2.3.8   Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.

2.3.9   Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and/or in further learning.

3   Organisational and Personal Learning

3.1 Input variables

3.1.1   There is sufficient resource, technology availability for organisation and personal learning.

3.1.2   There are validated processes designed to track progress on strategic goals.

3.2 Process variables

3.2.1   Promoting faculty members to create ideas for organisation performance improvement.

3.2.2   Provide opportunities to faculty members for continuous performance improvement.

3.2.3   Reinforce the learning environment for students.

3.2.4   Reinforce the learning environment for faculty members performance improvement.

3.3 Output variables

3.3.1   Evidence that leaders use teaching and learning assessment to improve the program's performance results.

3.3.2   Evidence that faculty use teaching and learning assessment to improve their competencies.

4   Valuing Faculty, Staff and Partners

4.1 Input variables

4.1.1   There is adequate funding for supporting the research.

4.1.2   There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.

4.2 Process variable

4.2.1   Use faculty members performance evaluation as measures of their performance.

These four composite indicators with their fifty-eight variables relate to Research Question 3: **What is recognised as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private education institutions in Thailand?**

The composite indicators and their variables are discussed in the next section Proactive Evaluation, best practice and composite indicators and their variables.

Proactive Evaluation, best practice and composite indicators and their variables

This Proactive Evaluation has enabled identification of four best practice and composite indicators – visionary leadership; learning-centred education; organisational and personal learning; valuing faculty, staff and partners – and their fifty-eight variables that should be used to provide information for decision-making for MEd Ed Admin programs in private higher education institutions in Thailand before policies and programs are set and/or implemented.

As has been explained previously, a Proactive Evaluation may take place before a program is designed. It assists program planners to make decisions about what type of program is needed. Owen, with Rogers (1999, 41) point out that the major purpose of a Proactive Evaluation is to provide input to decisions about how best to develop a program prior to the planning stage. The evaluator may act as an advisor in order to provide evidence about

what is known about policy development, what format of program is needed or how the program might be changed to make it more effective.

Owen, with Rogers (1999, 41) also provide issues about which an evaluator might be engaged as follows:

- Is there a need for the program?

- What do we know about this program that the program will address?

- What is recognized as best practice in this area?

- Have there been other attempts to find solutions to this problem?

- What does the relevant research or conventional wisdom tell us about this problem?

- What do we know about the problem that the program will address?

- What could we find out from external sources to rejuvenate an existing policy or program?

The four best practice and composite indicators and their variables can assist in both collecting and analysing evidence to produce findings and negotiating an evaluation plan. The role of the evaluator is to marshal evidence and provide findings which will assist in decision-making about the directions in which a program should be moulded in a given social intervention.

Validity and Appropriateness

These best practice and composite indicators and their variables have been shown to be both valid and appropriate on the grounds of technical adequacy (Ewell & Jones, 1994). They also meet the two criteria of Porter (2003): firstly, the composite indicators are based on the Malcolm Baldrige Quality Program Educational Criteria for Performance Excellence 2005 Education

Criteria: Core Values, Concepts, and Framework which are internationally recognised; secondly, a consensus on the variables was established via the first expert (Delphi) survey involving an experienced Panel of Expert members related to the field of study. The consensus was tested by the second single-round expert survey that included elaboration on the selection of these composite indicators and best practice by six participants in that phase.

The Delphi survey, and the testing of its outcomes by a subsequent survey, was designed to provide good practice and best practice composite indicators – both in terms of 'utility' and 'usability' aspects to meet specific requirements. Based on the findings of this research, policymakers and/or stakeholders can decide to take action, either by making or implementing a policy-instrument or by looking into the issue further to see whether or not a new program is, in fact, on its way to achieving the new vision.

Meeting the Baldrige Criteria

The Baldrige Education Criteria incorporate the Core Values and Concepts which are embedded beliefs and behaviours found in high-performing education organisations which were built upon the seven-part framework used in business, namely: leadership; strategic planning; student, stakeholder, and market focus; measurement, analysis, and knowledge management; faculty focus; process management; and organisational performance results. The major practical benefit derived from using a common framework for all sectors of a business is that it fosters cross-sector cooperation and sharing of best practices information (Baldrige, 2005a, 6).

The seven Criteria Categories are subdivided into nineteen items, each focusing on a major requirement and different in their Point Values. Items consisted of one or more Areas to Address (Areas) and organisations addressed their responses to the specific requirements of these Areas. The Scoring Guidelines spell out the assessment dimensions – Process and

Results – and the key factors are used to assess each dimension. An assessment provides a profile of strengths and opportunities for improvement relative to the nineteen performance-oriented requirements and relative to process and performance maturity as determined by the scoring guidelines. In this way, assessment leads to actions that contribute to performance improvement in all areas. Diagnostic assessment is a useful management tool that goes beyond most performance reviews and is applicable to a wide range of strategies and management systems (Baldrige, 2005a, 8).

Baldrige (2005a, 54) provides guidelines that should be observed in assigning scores to item responses.

- All areas should be included in item responses; responses should reflect what is important to the organisation.

- In assigning a score to an item, first decide which scoring range (e.g., 50 per cent to 65 per cent) is most descriptive of the organisation's achievement level. 'Most descriptive of the organisation's achievement level' can include some gaps in one or more of the Approach, Deployment, Learning, and Integration (A-D-L-I) (process) factors or results factors for the chosen scoring range. An organisation's achievement level is based on a holistic view of process and results factors in aggregate and not a tallying or averaging of independent assessments against each of all factors. Assigning the actual score within the chosen range requires evaluating whether the item response is closer to the statements in the next higher or next lower scoring range.

- A process item score of 50 per cent represents an approach that meets the overall requirements of the item, that is deployed consistently and to most work units covered by the item, that has been through some cycles of improvement and learning, and that addresses the key organisational needs. Higher scores reflect

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> greater achievement, demonstrated by broader deployment,
> significant organisational learning, and increased integration.

- A results item score of 50 per cent represents a clear indication of
  improvement trends and/or good levels of performance with
  appropriate comparative data in the results areas covered in the
  Item and important to the organisation. Higher scores reflect
  better improvement rates and/or levels of performance, better
  comparative performance, and broader coverage and integration
  with organisational requirements.

These guidelines should be followed in assigning scores to the items
developed following the first and second expert surveys and which resulted
in the listing of best practice and composite indicators and their variables
contained in Figure 6.1, above.

Proactive Evaluation and the MEd Ed Admin Program

Owen, with Rogers (1999, 63) describe evaluation as the process of
negotiating an evaluation plan, collecting and analysing evidence to produce
findings, and disseminating to the identified audiences. The execution
therefore requires those engaged in the evaluation process to possess a range
of complementary skills such as an ability to synthesise information,
interpersonal skills, methodological skills, and communication skills. The use
of evaluation to aid decision-making before programs are developed is a call
for a more analytical and rational approach to the allocation of precious
resources such as those applied to social and educational interventions
(Owen, 2006, 172).

In the case of composite indicators, best practice is able to be used to
provide information for decision-making about content of policies and
subsequent educational administration programs. A Proactive Evaluation was
used in this research as a basis for assisting a particular private higher

education institution to create, implement and monitor their programs based on the principles identified in the best practice cases.

In terms of this Proactive Evaluation, the best practice and composite indicators and their variables within the input-process-output framework for action and feedback provide assistance in the following program development steps:

- synthesising programs and providing front-end decision-making information for program leaders about the policies and programs either for new or existing programs to correct identified deficiencies that signal the fact that a deficiency is present;

- providing guidelines for norm-referenced, self-referenced, and criterion-referenced indicator formation for a Masters Degree program for Educational Administration in private higher education institutions, and also in related fields in Thailand based on each program leadership style, its own culture, vision, and mission in order to assist program professional bodies in critical examination of their current assessment procedures and existing information, as well as, in defining gaps and making continuous improvements; and

- providing guidelines for related public analysing on a construct their composite indicators and best practice, and also, create standard criteria in order to encourage management to solve program problem and improve program performance and its capabilities.

Summary

In putting forward alternative strategies for all concerned with the development of a new MEd Ed Admin Program, but especially for program stakeholders' and students' consideration, it is important to acknowledge that

historical, political, cultural, and program contexts impact significantly on the role of program leaders and the relative success of policies and practices that focus on continuous program improvement. By employing a Proactive Evaluation, policy and program developers should be informed by the best and most appropriate evidence about the problem to be addressed. In this particular research, the four best practice and composite indicators – visionary leadership, learning-centred education, organisational and personal learning, and valuing faculty, staff and partners – have been used to provide information in order to assist decisions about the structure and content of policies and a future or projected Masters Degree program in educational administration.

CHAPTER 7

Conclusion

Introduction

The objective of this study was to investigate the key requirements for the development of an effective Masters Degree Program in Educational Administration that would ensure best practice. The study sought to establish a practical set of best practice and composite indicators for quality management of a Masters Degree Program in Educational Administration in private higher education institutions in Thailand.

The research questions were determined in order to clarify a framework and conceptual of the study, and were as follows:

- What are the key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice?

- What are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration?

- What is recognized as the best practice for educational quality management for Masters Degree Program in Educational Administration in private higher education institutions in Thailand?

Three Phases of the Study

The methodology was based on the Proactive Form of Evaluation (Owen, with Rogers, 1999; Owen, 2006) and focused on establishing benchmarks by means of a Delphi survey, and matching these benchmarks to practical needs. A Proactive Form of Evaluation was applied. First, it was a 'nothing to something' situation where the aim of the evaluation was to provide findings to aid decision-making about a new program. Second, there were pre-existing programs, but these required major review. There was the likelihood that this research would bring about radical changes in the existing programs that were seen to be out of date or not serving the needs of those for whom it was intended – or even to see them replaced by a new and more appropriate program.

Three phases defined the research methodology: the first, a literature review, to determine what indicators of best practice in educational administration programs currently exist in universities; the second, a Delphi survey to establish what are regarded as the best practice and composite indicators, i.e., a set of theoretical benchmarks; the third, to assess how well these theoretical benchmarks meet the needs of practising tertiary teachers of educational administration.

In summary, the methodology consisted of a Research Review; a three-round Delphi Survey, a single-round survey, and a set of semi-structured interviews.

Phase 1: Research Review

In this phase, the researcher reviewed the research literature creating the items for the first round Delphi questionnaire. The purpose of the research review was to develop statements concerning the characteristics of items to be used in a Delphi survey to identify, by consensus, a list of best practice characteristics to be used in constructing indicators according to the approach of Johnstone (1981).

The researcher undertook a focused review of the research literature on best practice and composite indicators in Educational Administration courses and related literatures, especially the Malcolm Baldrige National Quality Award (2005) which is the highest level of national recognition for quality that a United States organisation can achieve.

The researcher employed the Core Values and Concepts established by Baldrige (2005) in order, initially, to establish best practice characteristics for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand. The Baldrige characteristics are embedded beliefs and behaviours found in high-performing education organisations and are the foundation for integrating key requirements within a results-oriented framework that created a basis for action and feedback. Each was based on four characteristics used to establish best practice and composite indicators:

1. Visionary leadership;

2. Learning-centred education;

3. Organisational and personal learning; and

4. Valuing faculty, staff and partners.

In each characteristic, the variables were grouped as input, process and output systems.

A set of these composite indicators and their variables was developed for the first Delphi questionnaire that was used in Phase 2. The development of these indicators and variables related directly to Research Question 1: **What are the key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice?**

Phase 2: Delphi Survey

In this phase, a panel consisting of nineteen recognised Thai educational experts purposively selected was involved in a three-round paper-and-pencil Delphi survey in order to rank, with reasons, composite items obtained in Phase 1. The Delphi survey used in this study was a modified Delphi method consisting of three rounds; the timescale to accomplish it was from 1 August 2004 to 28 February 2005.

The responses to the Delphi survey, consisting of three rounds of questionnaires, were analysed and evaluated. Item by item consensus was identified if fifty per cent of respondents chose the same response on an item (Barela & Eisenberg, 2002, 6). Descriptive statistics – medians and quartiles (the fourth quartile, the third quartile, and the first quartile), aggregate scores, and means – were determined. The Delphi statistics for decision criteria were adapted from Dalkey et al. (1969, 16) and Jillson (1974, 133). Utility and usability mean scores were used to categorise objectives, as follows: best, good and low utility/usability.

The best practice and composite indicators and their variables were defined as those that had a group mean score above 8.20; good composite indicators and their variables were constructed from those responses that had a group mean score above 6.40. The outcome was a mean rank-ordered listing of best practice and composite indicators for educational quality management for Masters Degree Program in Educational Administration in private higher education institutions in Thailand. The development of this listing related directly to Research Question 2: **What are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration?**

Phase 3: Second Survey and Semi-structured Interviews

In the third and final phase, a second expert panel consisting of thirty-four tertiary administrators and lecturers involved in the teaching of Educational

Administration and related fields in private higher education institutions in Thailand involved in a single-round paper-and-pencil survey designed to establish by consensus the practicality of a listing of composite indicators and their variables for Masters courses in this field that were constructed from Phase 2, the Modified Delphi survey. Semi-structured interviews of six participants in this phase was also undertaken in order to seek elaboration on the underlying reasons for the selection of these particular composite indicators and best practice. Comments, information, rationale and feedback from the semi-structured interviews were evaluated and summarised. The criteria used for establishing the best practice and composite indicators and their variables in Phase 3 was any item from the single-round survey that has its group mean scores above 8.20.

Best practice and composite indicators

The outcomes, in terms of the 'desirable usability or efficacy' aspect as identified by the second expert panel, consisted of only two composite indicators and eight related variables: their mean scores were greater than 8.20 (see Table 5.11). As a consequence, the researcher compared the best practice and composite indicators from the two sets of findings – the Delphi survey of the first expert panel, and the second expert panel survey (the single-round survey) in terms of the 'desirable utility' aspect – for synthesising the two sets of items in order to construct the best practice and composite indicators for educational quality management for an effective Masters Program Degree in Educational Administration in private higher education institutions in Thailand. The development of these indicators and variables related to Research Question 3: **What is recognized as the best practice for educational quality management for Masters Degree Program in Educational Administration in private higher education institutions in Thailand?** The outcome was four best practice and composite

indicators with fifty-eight variables categorised into input, process, and output variables.

Evaluation Questionnaire for Quality Assurance

As a final step in this research, the researcher designed an evaluation questionnaire for quality assurance to be implemented according to the best practice and composite indicators findings.

Level of quality criteria

As a first step, a set of value score criteria, based on an application of Dalkey et al. (1969) and Jillson (1974, in Turoff & Linstone, 2002) for making the judgements and/or decisions related to the evaluand was established. This resulted in five levels of quality: high, moderately high, average, moderately low and low which were related to value scores of 5 to 1, respectively. These relationships are shown in Figure 7.1, below.

Interpreting quality assurance scores

The second step in the process was to establish a range of mean scores that would relate to a 5-point quality assurance rating from very good to very poor. These ranges and meanings are shown in Figure 7.2.

It is anticipated that these best practice and composite indicators and their variables might be used to aid the synthesis of the program in order to provide information for decisions about the structure and content of policies and programs. They might be applied to provide findings to aid decision-making about a new program and/or a program that already exists but needs for a major review with the likelihood that this existing program would be altered radically or even replaced by a new and more appropriate one. Finally, they might be used in quality assurance review processes undertaken by any private tertiary educational organisation operating a MEd Ed Admin program.

FIGURE 7.1 EVALUATION QUESTIONNAIRE: QUALITY ASSURANCE

Please indicate how you evaluate regarding the following items. Use the 5-point scales, as follows:

- **Five levels of determination**

Value score	Level of Quality
5	High
4	Moderately High
3	Average
2	Moderately Low
1	Low

- **System Approach for Consideration**

  Input sub-division

- **Level of sufficient/available resources**

  Process sub-division

- **Level of performing/frequency to perform**

  Output sub-division

- **Level of quality/quantity of products**

Items	Level of Quality				
	1	2	3	4	5
1 Visionary Leadership					
1.1 Input variables					
1.1.1 There is sufficient program resources information available.					
1.1.2 There is sufficient faculty members competency information available.					
1.2 Process variables					
1.2.1 Use quality assurance information for continuous performance improvement.					
1.2.2 Student and stakeholder satisfaction is used for continuous performance improvement.					
1.2.3 Use qualified systematic performance evaluation approach.					
1.2.4 Set strategic plans in order to achieve the aims set.					

FIGURE 7.1   EVALUATION QUESTIONNAIRE: QUALITY ASSURANCE (cont.)

1.3	**Output variables**				
1.3.1	Teaching and learning plans relate to the curriculum.				
1.3.2	Program leaders serve as role models through their competencies.				
1.3.3	Program leaders serve as role models through their ethical behaviour.				
1.3.4	The goals for producing graduates emphasize the excellence of the program academic.				
1.3.5	Qualified human resource plans are developed.				
1.3.6	Resources plans for strategic deployment are developed.				
1.3.7	The goals for producing graduates are practical.				
1.3.8	The teaching and learning plans balance market needs.				
1.3.9	Teaching and learning plans are updated to change, such as, for changes in technology and in economies.				
2	**Learning-centred Education**				
2.1	**Input variables**				
2.1.1	Curriculum objectives relate to the curriculum's philosophy.				
2.1.2	Curriculum structure meets standard criteria.				
2.1.3	Curriculum philosophy relates to the program's vision.				
2.1.4	Curriculum structure supports curriculum objectives.				
2.1.5	Curriculum is appropriately designed to develop students' research competencies.				
2.1.6	The number of faculty with higher degrees meets the standard criteria.				
2.1.7	There is an acceptable system for evaluating student performance.				
2.1.8	Curriculum goals are problem-solving oriented.				
2.1.9	Faculty has knowledgeable in student-centred approach for teaching and learning process.				
2.1.10	There is an advisory system that is practicable in promoting all dimensions of student development.				
2.1.11	Curriculum is appropriately designed to develop students to be excellent academic leaders				
2.1.12	Curriculum is well-designed for developing students having competencies for profession.				
2.1.13	Curriculum is well-designed for assisting students to become well-rounded administrators in education.				
2.1.14	There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.				
2.1.15	Curriculum goals balance students' needs.				
2.1.16	There are sufficient elective subjects provided to meet students' needs.				

FIGURE 7.1   EVALUATION QUESTIONNAIRE: QUALITY ASSURANCE (cont.)

2.1.17	Curriculum objectives relate to public policy.					
2.2	**Process variables**					
2.2.1	Faculties teach in areas that are directly related to their field of specialization					
2.2.2	Teaching and learning process is research-oriented in its focus.					
2.2.3	Encourage good interactions with students.					
2.2.4	Provide opportunities for all concerned about curriculum content development to be heard.					
2.2.5	Use systematically authentic evaluation approaches.					
2.2.6	Set appropriate criteria and standards for all students.					
2.3	**Output variables**					
2.3.1	Students report that they are satisfied with the faculties' teaching and learning process.					
2.3.2	Develop a high level of competency in skills of problem-solving amongst the students.					
2.3.3	Develop a high level of competency amongst the students in the use of information and computer technology.					
2.3.4	Use appropriate technologies in the teaching and learning process					
2.3.5	Use formative assessment and evaluation approaches in teaching and learning process.					
2.3.6	Curriculum content is continuously developed.					
2.3.7	Per cent of students who graduate within expected time.					
2.3.8	Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.					
2.3.9	Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and/or in further learning.					
3	**Organisational and Personal Learning**					
3.1	**Input variables**					
3.1.1	There is sufficient resource, technology availability for organisation and personal learning.					
3.1.2	There are validated processes designed to track progress on strategic goals.					
3.2	**Process variables**					
3.2.1	Promoting faculty members to create ideas for organisation performance improvement.					
3.2.2	Provide opportunities to faculty members for continuous performance improvement.					
3.2.3	Reinforce the learning environment for students.					
3.2.4	Reinforce the learning environment for faculty members performance improvement.					

FIGURE 7.1   EVALUATION QUESTIONNAIRE: QUALITY ASSURANCE (cont.)

3.3	**Output variables**					
3.3.1	Evidence that leaders use teaching and learning assessment to improve the program's performance results.					
3.3.2	Evidence that faculty use teaching and learning assessment to improve their competencies.					
4	**Valuing Faculty, Staff, and Partners**					
4.1	**Input variables**					
4.1.1	There is adequate funding for supporting the research.					
4.1.2	There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.					
4.2	**Process variable**					
4.2.1	Use faculty members performance evaluation as measures of their performance.					

FIGURE 7.2   EVALUATION QUESTIONNAIRE: QUALITY ASSURANCE

- **Criteria for Interpreting educational quality management**

Average score for each dimension	Meaning of quality assurance score
4.21 – 5.00	Very Good
3.41 – 4.20	Good
2.61 – 3.40	Fair
1.81 – 2.60	Poor
1.00 – 1.80	Very Poor

The Value of Proactive Evaluation

Owen, with Rogers (1999, 178) provide useful interpretations of benchmarking by an organisation which include eight stages. Stages 1-4 are the establishment of benchmarks and stages 5-8 represent the application of benchmarks to the operation of the organisation. These eight stages are as follows:

1. the identification of the area of operation to be benchmarked;

2. identification of 'best practice' in selected organisations or selected organisations;

3. collection and analysis to determine the common characteristics of the practice;

4. development of best practice indicators and levels to be achieved on these indicators;

5. communication of best practice indicators internally and gaining of acceptance;

6. development and implementation of plans to achieve these levels;

7. progress monitoring;

8. full integration of practice into the functioning of the organisation.

This study involved the use of stages 1-4, only, as these were consistent with the 'evaluation for development' perspective of this Proactive Evaluation.

Owen, with Rogers (1999, 41) point out that the major purpose of Proactive Evaluation is to provide input to decisions about how best to develop a program prior to the planning stage. The evaluator may act as an advisor in order to provide evidence about what is known about policy development, what format of the program is needed or how the program may be changed to make it more effective.

The four best practice and composite indicators, identified in this study: visionary leadership; learning-centred education; organisational and personal learning; and valuing faculty, staff and partners provide a framework for decision-making for quality management for effective Masters Degree Programs in Educational Administration in private higher education institutions in Thailand prior to policies and programs being set and/or implemented.

Educational Quality Management: Program issues

Educational quality assurance, effectiveness and quality management support current and future development of programs such as Masters Degree Programs in Educational Administration. Program strategies, identified in this Program Evaluation, should be developed that support the following:

- initiation of an impetus with a sound, effective, and flexible administrative system that will enable its students to develop their potential that meet societal acceptance;

- development of curriculum and instructional design to enable students to develop knowledge, abilities, desirable traits, and skills in line with their potential;

- professional development of program personnel toward better skills and performance;

- improvement of program Information Communication Technology capacity to enhance the learning and managing processes for optimal benefits to stakeholders and students;

- collaboration and networking with strong support from financial sources and educational resources made possible in order to achieve program directions, values, and expectations.

The role of program leaders in Thailand should focus on setting program values and direction, communication, creating and balancing value for all students and stakeholders, and taking action to set standards consistent with the requirements of the Commission on Higher Education. Team management and leadership should become a major concern and should be the major focus of personnel development Leaders should be well-prepared, particularly in respect of the competencies that support ethical leadership.

Effective programs require a strong orientation to the future and a commitment to both improvement and innovation; increasingly, this requires creating effective evaluation and reporting systems, creating an environment for learning, merit motivation system, empowerment system, and agility performance. Within this frame, it is important to clearly identify which functions are personal and which are departmental so that appropriate responsibility and performance outcomes can be determined.

Programs should have strategic objectives that convert into action plans for recruitment, retention, and development of program administrator, faculty with the aims of meeting ongoing needs of its faculty and a high-performance workplace. In addition, successful internal and external partnerships are essential, thereby creating a basis for mutual investment and respect.

Programs should invest in organisational and personal learning through education and training, and provide opportunities for organisation and personnel continuing growth and development. They should provide opportunities for faculty to illustrate their new knowledge and skills; these need to be encouraged by use of salary incentives. Organisational and personal learning should be strongly encouraged in order to achieve requisite organisational performance. Organisational learning should include both continuous improvement of existing approaches, and significant change leading to new goals and approaches.

Education and training needs depend on many factors. These needs include gaining knowledge about assessment practices, learning styles, and effective methods of working with students from other cultures and have limited proficiency. They also include gaining skills in knowledge sharing, communications, interpreting and using data, using new technology; process analysis; evaluating and understanding student behaviour; self-development as well as development of other; development and training that enhances faculty effectiveness and performance.

Programs should support development of all students so that they maximise their potential; organisations need to afford students the opportunities to pursue a variety of avenues to success. Learning-centred education and the real needs of students should be focused on appropriate curriculum and developmental experiences. All stakeholders should take part in brainstorming new ideas, exploring the clear demands of graduate competencies and personal characteristics needed, society and labour market, and listening carefully to everyone involved in the curriculum re-shaping process.

To deliver a program of the highest quality that satisfies students and key stakeholders, there needs to be a strengthening of research and development. The *raison d'être* for any form of research will be that it enhances the core activity of the program – which is the development of its intellectual capital.

In any attempt to transform the work philosophy of academia, programs must have a well-defined mission with a diversity of goals and objectives. Each academic unit then will have responsibility for developing its own quality assurance mechanism to fulfil programs' quality standard requirements.

Characteristics of the Sub-system

The characteristics of sub-systems also need to be expanded in order to assist groups in finding information to aid decision-making about the structure and content of policies and programs. The characteristics consist of inputs and processes, as follows: visionary leadership; stakeholders' and market needs assessment; curriculum design; learning-centred education; management; valuing faculty, staff and partners; and resource and environmental management.

To ensure that inputs are transformed into outputs, all categories need to be internally evaluated, as well as being evaluated by selected external stakeholders. Feedback needs to be provided to assist in solving problems and for ensuring continuous improvement.

Visionary leadership is the most essential factor to ensure a quality revolution and quality-based deployment. Stakeholders' and marketing concerns are essential not only for program survival, but to create new opportunities and to encourage business development. The need to develop curriculum is obvious; those who are affected by curriculum should be involved in the process of curriculum planning and development, implementation, and evaluation.

Programs should place the focus of education on learning, the real needs of students, derived needs of stakeholders, and market requirements. Organisations must cultivate a strong climate for support of innovation and research and an eagerness to improve performance practices, capabilities, and results. Faculty must be the best the program can provide. The program must be able to attract and retain these faculty. The basic salary package must be highly competitive; as well, a bonus scheme that rewards both team and individual performance, is a must. Additionally, modern programs need strategic partners. Networks provide a potential opportunity to expand the business; resources and facilities should be appropriately available. Finally, a

favourable learning environment must be in place in which costs are managed so that the break-even point is maintained.

A system for educational quality management of graduate schools or any programs in higher education, such as that shown in Figure 7.3, is needed to produce quality graduates and social satisfaction. This training model is useful as it addresses the required management competencies and skills, is practical, does not take an excessive amount of time, and can be put into practice.

Most importantly, the implementation of a future development plan depends on sound program policy and determined agents who are responsible for and aware of the consequences of their actions.

Recommendations for Future Study

This study reveals possibilities for future study in the extension and improvement of a Masters Degree Program in Educational Administration and provides a road map for educational quality management and quality assurance. Up to the present, quality assurance in higher education institutions in Thailand, first established by ONESQA, has been experimental and evolutionary in character. The following proposed studies may prove of value in further defining and determining a quality management and quality assurance system of the program concerned according to announcement of the Higher Education Commission's *Standard Criteria of Graduate Programs of B.E. 2548* (HEC, 2005), building upon the results of the research, discussed above.

- **To be independent of content:** In order to standardise this instrument, there should be comparable studies regarding factors affecting the effectiveness of Masters Degree Programs in Educational Administration, and also, other Masters Degree Programs in higher education institutions between private and

FIGURE 7.3   PROGRAM SYSTEM MODEL

```
┌───────────────────────────────────────────────────────────────────────┐
│                       ┌─────────────┐                                    │
│                       │ Stakeholders'│                                   │
│                       │ and Market  │                                    │
│                       │   Needs     │                                    │
│                       └─────────────┘                                    │
│                          ↕                                               │
│                       ┌─────────────┐                                    │
│                       │ Curriculum  │                                    │
│                       │   Design    │                                    │
│                       └─────────────┘                                    │
│                          ↕                                               │
│                       ┌─────────────┐                                    │
│                       │  Learning-  │                                    │
│                       │  Centred    │                                    │
│                       │  Education  │                                    │
│  ┌──────────┐         └─────────────┘    ┌─────────┐   ┌──────────────┐ │
│  │ Visionary │ ↔                          │ Process │ ↔ │ • Quality of │ │
│  │Leadership │          ┌─────────────┐   └─────────┘   │   Graduates  │ │
│  └──────────┘          │ Management  │                  │ • Social     │ │
│                        └─────────────┘                  │   Satisfaction│ │
│                          ↕                              └──────────────┘ │
│                       ┌─────────────┐                                    │
│                       │  Valuing    │                                    │
│                       │Faculty, Staff│                                   │
│                       │and Partners │                                    │
│                       └─────────────┘                                    │
│                          ↕                                               │
│                       ┌─────────────┐                                    │
│                       │ Resource &  │                                    │
│                       │Environmental│                                    │
│                       │ Management  │                                    │
│                       └─────────────┘                                    │
│                                                                          │
│           (Internal Evaluation, Feedback & Research)                     │
│                                                                          │
│             Input                              Output                    │
│           (Successive ──── Process ──── (Target)                         │
│            Factors)                                                      │
└───────────────────────────────────────────────────────────────────────┘
```
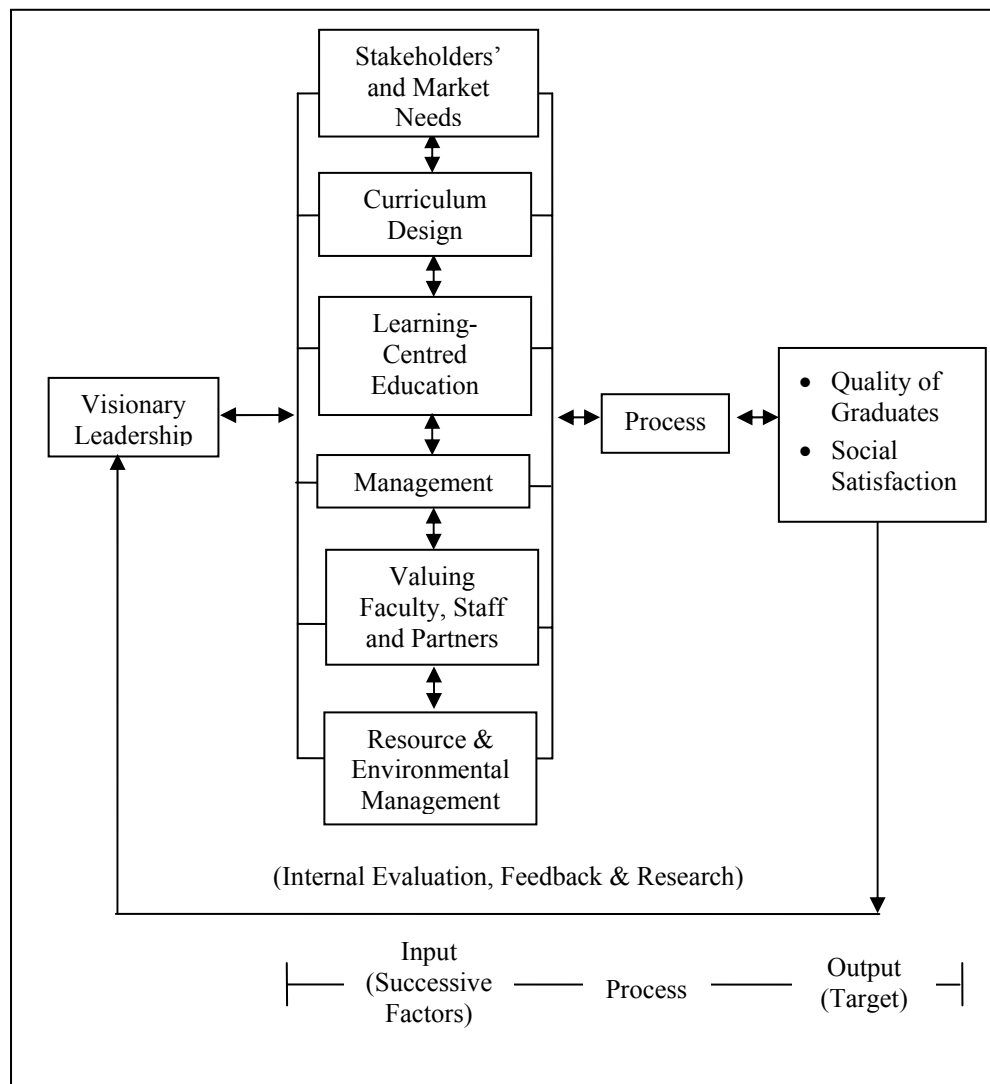
public institutions in order to compare the similarities and the differences of these factors.

- **To be independent of level:** There should be studies regarding factors affecting the effectiveness of Doctorate and Undergraduate Degree Programs; Vocational Education and Basic Education managements of those institutions in order to compare the similarities and the differences of these factors in order to create a quality assurance principle and/or concept for all education levels.

Conclusion

This study was designed to undertake, via a Proactive Evaluation, a review of best practice in order to establish composite indicators that might act as quality assurance benchmarks. It has demonstrated that examples of best practice may be used as inputs to develop policies and to develop subsequent educational administration programs. They may also be used as a basis for assisting a particular private higher education institution to create, implement and monitor their programs based on the principles identified in the best practice cases.

For programs to enact substantial and sustainable change in efficiency and productivity, a new way of thinking, or paradigm, that builds efficiency and a desire for continual learning needs to be integrated into program structures. Increasing competition, demands for accountability, and higher volumes of available information change the methods of how programs operate. Proactive Evaluation provides evidence about what is known about policy development, what format of programs is needed, and how an organisation may be changed to make it more effective.

Program evaluation, using the Proactive Form of Owen, with Rogers (1999) and Owen (2006), and employing the approaches of a review of best practice, and a Delphi survey to establish best practice supported by semi-structured interviews, has enabled the provision of essential composite indicators and variables: visionary leadership; learning-centred education; organisational and personal learning, and valuing, faculty, staff and partners for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand. Such programs will be able to apply these findings for monitoring performance, determining benchmarks, continuous improving by appropriate feedback and implementation mechanisms, constructing reward mechanisms and policies, aligning management to higher education quality initiatives, and the development of programs and policy.

Hopefully, the findings of this research will assist all concerned to make best use of the knowledge base they acquire.

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LIST OF APPENDICES

Appendix E: Ethical Considerations

Attachment A

INFORMATION TO PARTICIPANTS

"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"

Researcher:

Mr. Kachakoch Kanpinit, a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University.

Aims:

The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

Methods to be employed:

In this study, best practice and composite indicators for a new Masters degree program in Educational Administration in private higher education institutions in Thailand will be established. The methodology for this research will be based on a Proactive Form of Evaluation (Owen & Rogers, 1999*) and will focus on a research review, an establishment of benchmarks, and a matching of benchmarks to practical needs. Owen & Rogers (1999, p. 170) suggest that a Proactive Evaluation is employed to 'provide information in order to assist decisions about a future or projected program'. There will be three phases: one, a literature review, to determine what indicators of best practice in educational administration programs currently exist in Western universities; two, a Delphi survey to establish what are regarded as the best practice and composite indicators, i.e., a set of theoretical benchmarks; and three, to assess how well these theoretical benchmarks meet the needs of tertiary teachers of educational administration**.**

*Owen, J.M. & Rogers, P.J. (1999) *Program Evaluation: Forms and Approaches, 2nd Edition* (St Leonards, NSW: Allen & Unwin)

Phase 1: Literature review

In this phase, the researcher will undertake a focused review of the current literature on best practice and composite indicators in educational administration courses, using computer-based search engines to access books and journals. From this he will generate an initial set of best practice statements and composite indicators that will be used in Phase 2.

Phase 2: First Delphi survey
Step 1: Selection of Expert Panel 1
Expert Panel 1 will consist of nineteen persons purposively selected to be involved in the Delphi survey. Experts from the private higher education institutions in Thailand that currently operate a program in educational administration at masters level and external experts on the basis of their academic standing in the field, length of involvement in developing and teaching Educational Administration courses, and peer recommendation will be invited to participate. The concerns will be invited, in the first instance, to suggest names of people to be approached.

Step 2: Delphi survey of Expert Panel 1
In this step, the nineteen members of Expert Panel 1 will be surveyed by mail, and asked in a pencil-and-paper questionnaire, to rank in importance, on a scale of 1-10, the best practice statements and composite indicators obtained in Phase 1, and to give their reasons for their rankings**.**

The aggregate scores for each of the original items will be determined and the items will then be ranked in order of importance, from highest to lowest, according to the aggregate scores. A summary of the reasons given for the ranking of each item will be included adjacent to each item. This ranked list of items, together with the reasons for the rankings, will comprise the pencil-and-paper questionnaire for the second round. Standard qualitative data reduction techniques will be used in creating the summary of reasons**.**

Two further rounds of the Delphi survey, as described above, will be undertaken with the nineteen members of Expert Panel 1 surveyed in Step 1**.**

The rank-ordered listing of items obtained following the third round will be used in Phase 3. No reasons for any of the prior rankings will be attached to these items in Phase 3.

Phase 3: Second Survey and Semi-structured Interviews
Step 1: Selection of Expert Panel 2
The Deans or Directors and full-time instructors of the graduate schools of Educational Administration at the 13 private higher education institutions in Thailand will be invited, by letter, to participate in this phase, which will consist of a single round of a survey. It is expected that this panel will consist of thirty-four tertiary lecturers**.**

Step 2: Survey of Expert Panel 2
In this step, the thirty-four members of Expert Panel 2 will be surveyed by mail, and asked in a pencil-and-paper questionnaire, to rank in importance, on a scale of 1-10, the best practice statements and composite indicators obtained at the end of Phase 2, and to give their reasons for their rankings.

The aggregate scores for each item will be determined and the items will be ranked in order of importance, from highest to lowest, according to the aggregate scores. The interquartile ranges will be calculated, and those items whose aggregate scores lie in the fourth quartile will be deemed to be, by consensus, the best practice and composite indicators for quality management in masters courses in Educational Management in Private Higher Education Institutions in Thailand**.**

Step3: Semi-structured interviews

In this step, six participants in the second survey who have been randomly chosen, will be invited to participate in individual, semi-structured interviews, to elaborate on their reasons for selecting the best practice and composite indicators in the second survey. A summary of the reasons given for the ranking of these best practice and composite indicators will be included in the final report. Standard qualitative data reduction techniques will be used to develop this summary.

Risks and Safeguards:

There will be certain potential risks in the study – namely, psychological and social risks. The former will be concerned with anxieties in completing a complicated and on-going Delphi survey that asks for opinions and reasons that might cause distress to the respondents. The latter will be concerned with interactions with the interviewer who may not be known to the respondents and to whom, as a consequence of Thai culture, being asked to express an opinion that might be contrary or negative might cause stress and anxiety.

The first Delphi survey itself will consist of three rounds of a survey of a group of experts. Each round will be ranked by participants who will give their reasons for the ranking and will be re-submitted to the participants in subsequent surveys. This may cause them some concern as they may worry about whether or not their answers are the same as the majority of the group. While the second survey consists of only one round, similar concerns may arise.

After obtaining data from the surveys, the researcher will undertake semi-structured interviews with six participants. They may feel some stress about being asked questions related to the reasons why they chose particular responses because these may have implications about their job performance.

At the commencement of each Phase of the study, participants will be provided with a general description of the study, contact details of the investigators, and informed consent. Participants will also be given an opportunity to ask any questions related to the study. During all phases, participants will be assured that participation is confidential and voluntary. It will also be explained that the Delphi questionnaires will be assigned a code number in order to protect the identity of the participants, and that a list of names and code numbers will be stored in a file cabinet separate from the storage area for these questionnaires. Participants will be informed that only the principal researchers and student researcher will have access to the questionnaires for data analysis purposes. At all other times, questionnaires will be locked inside a file cabinet. All appropriate documents will be translated into Thai.

During the interviews, participants will be encouraged to ask any questions before the interview begins. It will also be emphasised that confidentiality will be maintained and that the information will be assigned a code number in order to protect the identity of the participant. All information will be stored in a file cabinet, will be locked, and will only be accessed by the research investigators.

Participants will be informed that in the report of the research all places, people and institutions be provided with pseudonyms, that every effort will be taken to avoid disclosure of their identity, and that confidentiality will be maintained at all times.

During the interviews, if participants have a negative emotional reaction associated with recalling experiences they will be allocated time away from the interview. They will be informed that if anything upsets them to the point that they wish to discontinue participation, they may do so. It will be emphasised that participation is voluntary that completion of the study is not mandatory. Counselling (by an independent psychologist) will be offered to participants who have reported feeling uncomfortable or anxious during the interview. **To arrange this, you should contact Dr Suriyan, Director, International Graduate Study Program of Burapha University, Chonburi, Thailand (telephone no 0 3839-3252).**

No physical risks are anticipated. The risks of harm anticipated in the proposed research are not greater than those ordinarily encountered in daily life.

Any queries about your participation in this project may be directed to Mr. Kachakoch Kanpinit, a student researcher (telephone no 01-558-8784 email: katchrin@yahoo.com) or his principal supervisor, Dr. Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508). If you have any queries or complaints about the way you have been treated or to discuss the rights as a research subject, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 03-9688 4710).

ATTACHMENT B

DESCRIPTION OF RESEARCH STUDY AND PROCEDURES
FOR PARTICIPANTS

INFORMATION TO PARTICIPANTS

I, Mr. Kachakoch Kanpinit, a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University, would like to invite you to be a part of a study into *"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"*. The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

In this study, best practice and composite indicators for a new Masters degree program in Educational Administration in private higher education institutions in Thailand will be established.

The methodology for this research will be based on a Proactive Form of Evaluation (Owen & Rogers, 1999*) and will focus on a research review, an establishment of benchmarks, and a matching of benchmarks to practical needs. Owen & Rogers (1999, p. 170) suggest that a Proactive Evaluation is employed to 'provide information in order to assist decisions about a future or projected program'.

There will be three phases: one, a literature review, to determine what indicators of best practice in educational administration programs currently exist in Western universities; two, a survey to establish what are regarded as the best practice and composite indicators, i.e., a set of theoretical benchmarks; and three, to assess how well these theoretical benchmarks meet the needs of tertiary teachers of educational administration.

Phase 1

In this phase, the researcher will undertake a focused review of the current literature on best practice and composite indicators in educational administration courses; he will then generate an initial set of best practice statements and composite indicators that will be used in Phase 2.

*Owen, J.M. & Rogers, P.J. (1999) *Program Evaluation: Forms and Approaches, 2nd Edition* (St Leonards, NSW: Allen & Unwin)

Phase 2

In this phase an expert panel, consisting of 19 persons purposively selected, will be involved in a three-round paper-and-pencil Delphi survey in order to rank order, with reasons, the best practice and composite items obtained in Phase 1.

Phase 3

In this third and final phase, a second expert panel consisting of 34 tertiary administrators and lecturers involved in the teaching of Educational Administration in private universities in Thailand will be involved in a single-round paper-and-pencil survey designed to establish, by consensus, a listing of the best practice and composite indicators for masters courses in this field. Semi-structured interviews of 6 participants in this phase will be undertaken to seek elaboration on the underlying reasons for the selection of these particular best practice and composite indicators.

The study will benefit not only the panel of experts, but also the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

ATTACHMENT C

CONSENT TO GIVE APPROVAL TO GAIN ACCESS TO DATA AND CONTRIBUTIONS OF EACH RESPONDENT IN A RESEARCH STUDY

TITLED:

"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"

Researcher:

Mr. Kachakoch Kanpinit, a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University.

I (name of the private higher education institution president)_____
have been invited to give approval to gain access to data and contributions of each respondent that will make a valuable study entitled "Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand."

Aims:

The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

Methods to be employed:

In this study, best practice and composite indicators for a new Masters degree program in Educational Administration in private higher education institutions in Thailand will be established. The methodology for this research will be based on a Proactive Form of Evaluation (Owen & Rogers, 1999*) and will focus on a research review, an establishment of benchmarks, and a matching of benchmarks to practical needs. Owen & Rogers (1999, p. 170) suggest that a Proactive Evaluation is employed to 'provide information in order to assist decisions about a future or projected program'.

There will be three phases: one, a literature review, to determine what indicators of best practice in educational administration programs currently exist in Western universities; two, a Delphi survey to establish what are regarded as the best practice and composite indicators, i.e., a set of theoretical benchmarks; and three, to assess how well these theoretical benchmarks meet the needs of tertiary teachers of educational administration.

Phase 1

In this phase, the researcher will undertake a focused review of the current literature on best practice and composite indicators in educational administration courses; he will then generate an initial set of best practice statements and composite indicators that will be used in Phase 2.

*Owen, J.M. & Rogers, P.J. (1999) *Program Evaluation: Forms and Approaches, 2nd Edition* (St Leonards, NSW: Allen & Unwin)

Phase 2

In this phase an expert panel, consisting of 19 persons purposively selected, will be involved in a three-round paper-and-pencil Delphi survey in order to rank order, with reasons, the best practice and composite items obtained in Phase 1.

Phase 3

In this third and final phase, a second expert panel consisting of 34 tertiary administrators and lecturers involved in the teaching of Educational Administration in private universities in Thailand will be involved in a single-round paper-and-pencil survey designed to establish, by consensus, a listing of the best practice and composite indicators for masters courses in this field. Semi-structured interviews of 6 participants in this phase will be undertaken to seek elaboration on the underlying reasons for the selection of these particular best practice and composite indicators.

Duration:

I have been informed that data collection for this project is planned to commence on 01/09/2004 and to conclude on 31/03/2005. Each questionnaire associated with these Delphi surveys will take no more than three hours to complete, and each face-to-face semi-structured interview will take no more than three hours to complete.

Risks / Discomforts:

I am free to withdraw my consent at anytime and unprocessed information will not be used.

Benefits:

I understand that this study will benefit the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Right to withdraw:

I understand that such withdrawal will not jeopardise any treatment or my relationship with Victoria University of Technology.

Signatures:

I have read this entire consent form and completely understand my rights. I voluntarily consent to give approval to gain access to data and contributions of each respondent in this research study. I have been informed that I will receive a copy of this consent, and should any queries arise about this study I may contact Mr. Kachakoch Kanpinit, a student research (telephone no. 01-558-8784 email: katchrin@yahoo.com, his principal supervisor, Dr Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508).

Should I need to seek counselling, I can contact Dr Suriyan, Director, International Graduate **Study Program** of Burapha University, Chonburi, Thailand (telephone no 03-839-3252)

_____   _____
Signature of the President   **Date**

_____   _____
Signature of Witness   **Date**

ATTACHMENT D

CONSENT TO PARTICIPATE IN A DELPHI SURVEY AS PART OF A RESEARCH STUDY

TITLED

"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"

Researcher:

Mr. Kachakoch Kanpinit, a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University.

I (name of potential participant)_____ have been invited to be a part of a study into "Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand."

Aims:

The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

Duration:

I understand that each questionnaire associated with this Delphi survey will take me no more than three hours to complete.

Procedure:

I will be involved in a three-round paper-and-pencil Delphi survey. I will be surveyed by mail, and asked in a pencil-and-paper questionnaire, to rank in importance, on a scale of 1-10, the best practice statements and composite indicators obtained in Phase 1, and to give their reasons for their rankings. The aggregate scores for each of the original items will be determined and the items will then be ranked in order of importance, from highest to lowest, according to the aggregate scores. A summary of the reasons given for the ranking of each item will be included adjacent to each item. This ranked list of items, together with the reasons for the rankings, will comprise the pencil-and-paper questionnaire for the second round. Standard qualitative data reduction techniques will be used in creating the summary of reasons. Two further rounds of the Delphi survey, as described above, will be undertaken.

Risks / Discomforts:

I am free to withdraw from study at anytime and unprocessed information already will not be used.

Benefits:

I understand that this study will benefit not only the panel of experts, but also the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Confidentiality:

I understand that a research code number will be used to identify my responses from those of other participants and that my name, address, and other identifying information will not be directly associated with any information obtained from me. A master listing of persons participating in the study and their identifying information will be kept in a secure location under lock and key. When the results of this study are published, my name and other identifying information will not be used.

Payment:

I understand that I will not be paid for participating in this research study.

Right to withdraw:

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from the study at any time without fear of losing any services or benefits to which I am entitled.

Signatures:

I have read this entire consent form and completely understand my rights as a potential research subject. I voluntarily consent to participate in this research. I have been informed that I will receive a copy of this consent, and should any queries arise about this study I may contact Mr. Kachakoch Kanpinit, a student research (telephone no. 01-558-8784 email: katchrin@yahoo.com, his principal supervisor, Dr Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508). Should I need to seek counselling, I can contact Dr Suriyan, Director, International Graduate Study Program of Burapha University, Chonburi, Thailand (telephone no 0 3839-3252)

_____   _____

Signature of Participant   **Date**

_____   _____

Signature of Witness   **Date**

Any queries about your participation in this project may be directed to Mr. Kachakoch Kanpinit, a student researcher (telephone no 01-558-8784 email: katchrin@yahoo.com) or his principal supervisor, Dr. Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508). If you have any queries or complaints about the way you have been treated or to discuss the rights as a research subject, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 03-9688 4710).

ATTACHMENT E

CONSENT TO PARTICIPATE IN A SECOND SURVEY IN A RESEARCH STUDY

titled

*"*Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand*"*

Researcher:

Mr. Kachakoch Kanpinit, a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University.

I (name of potential participant)_____ have been invited to be a part of a study into "Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand."

Aims:

The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

Duration:

I understand that the questionnaire associated with this survey will take me no more than three hours to complete.

Procedure:

I will be involved in a single-round paper-and-pencil survey designed to establish, by consensus, a listing of the best practice and composite indicators for masters courses in that field.

Risks / Discomforts:

I am free to withdraw from study at anytime and unprocessed information already will not be used.

Benefits:

I understand that this study will benefit not only the panel of experts, but also the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Confidentiality:

I understand that a research code number will be used to identify my responses from those of other participants and that my name, address, and other identifying information will not be directly associated with any information obtained from me. A master listing of persons participating in the study and their identifying information will be kept in a secure location under lock and key. When the results of this study are published, my name and other identifying information will not be used.

Payment:

I understand that I will not be paid for participating in this research study.

Right to withdraw:

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from the study at any time without fear of losing any services or benefits to which I am entitled.

Signatures:

I have read this entire consent form and completely understand my rights as a potential research subject. I voluntarily consent to participate in this research. I have been informed that I will receive a copy of this consent, and should any queries arise about this study I may contact Mr. Kachakoch Kanpinit, a student research (telephone no. 01-558-8784 email: katchrin@yahoo.com, his principal supervisor, Dr Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508). If I have any queries or complaints about the way I have been treated or to discuss my rights as a research subject, I can contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 03-9688 4710).

Should I need to seek counselling, I can contact Dr Suriyan, Director, International Graduate Study Program of Burapha University, Chonburi, Thailand (telephone no 0 3839-3252))

_____   _____

Signature of Participant   **Date**

_____   _____

Signature of Witness   **Date**

ATTACHMENT F

CONSENT TO PARTICIPATE IN A SEMI-STRUCTURED
INTERVIEW AS PART OF A RESEARCH STUDY

titled

"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"

Researcher:

Mr. Kachakoch Kanpinit, a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University.

I (name of potential participant)_____ have been invited to be a part of a study into "Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand."

Aims:

The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

Duration:

I understand that the face-to-face semi-structured interview will take no more than three hours to complete.

Procedure:

I will be participated individual, face-to-face semi-structured interview, to elaborate on my reason for selecting the best practice and composite indicators for master courses in that field in the second survey.

Risks / Discomforts:

During the interview I will not have to talk about anything that I do not wish to discuss. I am free to withdraw from study at anytime and unprocessed information already will not be used.

Benefits:

I understand that this study will benefit not only the panel of experts, but also the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Confidentiality:

I understand that a research code number will be used to identify my responses from those of other participants and that my name, address, and other identifying information will not be directly associated with any information obtained from me. A master listing of persons participating in the study and their identifying information will be kept in a secure location under lock and key. When the results of this study are published, my name and other identifying information will not be used.

Payment:

I understand that I will not be paid for participating in this research study.

Right to withdraw:

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from the study at any time without fear of losing any services or benefits to which I am entitled.

Signatures:

I have read this entire consent form and completely understand my rights as a potential research subject. I voluntarily consent to participate in this research. I have been informed that I will receive a copy of this consent, and should any queries arise about this study I may contact Mr. Kachakoch Kanpinit, a student research (telephone no. 01-558-8784 email: katchrin@yahoo.com, his principal supervisor, Dr Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508).

Should I need to seek counselling, I can contact Dr Suriyan, Director, International Graduate Study Program of Burapha University, Chonburi, Thailand (telephone no 0 3839-3252)

_____   _____

Signature of Participant   **Date**

_____   _____

Signature of Witness   **Date**

Any queries about your participation in this project may be directed to Mr. Kachakoch Kanpinit, a student researcher (telephone no 01-558-8784 email: katchrin@yahoo.com) or his principal supervisor, Dr. Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508). If you have any queries or complaints about the way you have been treated or to discuss the rights as a research subject, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 03-9688 4710).

ATTACHMENT G

54/60 Moo 2 Soi TonTan Chaengwattana Road

Pakret, Nonthaburi, Thailand 11120

June 1, 2004

**LETTER TO PRESIDENTS OF THE PRIVATE HIGHER EDUCATION
INSTITUTIONS IN THAILAND**

My name is Mr. Kachakoch Kanpinit. I am a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University. I am conducting a research study entitled *"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"*. The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

The research study needs to be permitted from the President. Please give approval to gain access to data and contributions of each respondent that will make a valuable study. It is anticipated that the results of the study will be of value to the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Yours sincerely,

Mr. Kachakoch Kanpinit

Researcher

ATTACHMENT H

54/60 Moo 2 Soi TonTan Chaengwattana Road
Pakret, Nonthaburi, Thailand 11120
June 1, 2004

LETTER TO EXPERT PANEL 1

My name is Mr. Kachakoch Kanpinit. I am a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University. I am conducting a research study entitled *"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"*. The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

It will be appreciated if you would complete the enclosed questionnaire. The contribution of each respondent will make a valuable study. It is anticipated that the study will benefit not only the panel of experts, but also the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Please complete all sections and return to me in the enclosed postage-paid envelope. Thank you for your supporting this study.

Your assistance is greatly appreciated

Yours sincerely,

Mr. Kachakoch Kanpinit

Researcher

ATTACHMENT I

54/60 Moo 2 Soi TonTan Chaengwattana Road

Pakret, Nonthaburi, Thailand 11120

June 1, 2004

LETTER TO EXPERT PANEL 2

My name is Mr. Kachakoch Kanpinit. I am a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University. I am conducting a research study entitled *"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"*. The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

It will be appreciated if you would complete the enclosed questionnaire. The contribution of each respondent will make a valuable study. It is anticipated that the study will benefit not only the panel of experts, but also the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Please complete all sections and return to me in the enclosed postage-paid envelope. Thank you for your supporting this study.

Your assistance is greatly appreciated

Yours sincerely,

Mr. Kachakoch Kanpinit

Researcher

Any queries about your participation in this project may be directed to Mr. Kachakoch Kanpinit, a student researcher (telephone no 01-558-8784 email: katchrin@yahoo.com) or his principal supervisor, Dr. Ian M. Ling (telephone no. 0-2300-4543-62 ext 3609), or his co-supervisor, Prof. Dr. Pote Sapianchai (telephone no 02-350-3500 ext. 1508). If you have any queries or complaints about the way you have been treated or to discuss the rights as a research subject, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MC, Melbourne, 8001 (telephone no: 03-9688 4710).

ATTACHMENT J

54/60 Moo 2 Soi TonTan Chaengwattana Road

Pakret, Nonthaburi, Thailand 11120

June 1, 2004

LETTER TO EXPERT PANEL 2 AND EXPERTS WHO WILL PARTICIPATE
IN INDIVIDUAL, SEMI-STRUCTURED INTERVIEWS

My name is Mr. Kachakoch Kanpinit. I am a candidate in the Doctor of Education program in partnership between Victoria University of Technology and Burapha University. I am conducting a research study entitled *"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"*. The project aims to answer the research questions: in what are key requirements for the development of an effective Masters Degree Program in Educational Administration that will ensure best practice, in what are the essential indicators of educational quality management for an effective Masters Degree Program in Educational Administration, and in what is recognized as the best practice for educational quality management for Masters Degree Programs in Educational Administration in private higher education institutions in Thailand.

It will be appreciated if you would complete the enclosed questionnaire and take part in individual, face-to-face semi-structured interview. All the contributions of each respondent will make a valuable study. It is anticipated that the study will benefit not only the panel of experts, but also the program administrators by establishing the best practice for educational quality management for Masters Degree Program of Educational Administration in private high education institutions in Thailand and its essential indicators in order to continue their improvements.

Your assistance is greatly appreciated

Yours sincerely,

Mr. Kachakoch Kanpinit

Researcher

ATTACHMENT K

REVOCATION OF CONSENT FORM FOR SUBJECTS
INVOLVED IN RESEARCH

Used for participants who wish to withdraw from the project

I, ...

of (address), ...

....

hereby wish to WITHDRAW my consent to participate in the research proposal described in the Plain Language Statement for the research project called:

"Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand"

and understand that such withdrawal WILL NOT jeopardise any treatment or my relationship with Victoria University.

Any data already collected may/may not be included in the research project.

Signature: .... Date: ....

Appendix Q: Questionnaire Design

Questionnaire 1

Project title: **Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand**

Details for completing questionnaire

1. This Delphi survey questionnaire will be used as an instrument for developing composite indicators for educational quality management for a Master Degree Program of Educational Administration in private higher education institutions in Thailand**.**

2. This questionnaire has 2 sections.

   Section 1
   - In this section, please provide details of your personal situation.

   Section 2
   - The first section consists of four composite indicators applied from Baldrige National Quality Program (2005), core values and concepts for educational criteria performance excellence, which are:
     1. visionary leadership;
     2. learning-centred education;
     3. organisational and personal learning; and
     4. valuing faculty, staff, and partners; and their variables.
   - Please consider the ***importance*** of the items related to these variables – for both ***utility*** and ***usability*** – by rating each on a scale of 1 to 10 (1 = low, 10 = high): please circle the number that most closely corresponds to your opinion. Should you wish to do so, please – in the spaces provided – give reasons for your particular rating of any item.
   - Should you have additional comments to make relating to any specific items, please write your comments in the spaces provided.

Section 1

Please place a tick (✓) in the bracket and fill with appropriate answer which reflects your personal situation:

1. Name: …………………………………………….
2. Gender:

   (   ) Male   (   ) Female
3. Age: (please specify)………..years
4. Final earned degree:

   (   ) Bachelor Degree

   (**)** Master Degree

   (   ) Doctorate Degree

   (   ) Post-Doctorate Degree
5. Academic Position

   (   ) Instructor

   (   ) Assistant Professor

   (   ) Associate Professor

   (   ) Professor
6. Years in working experience:

   (   ) Less Than 5 years

   (   ) 6-10 years

   (   ) 11-15 years

   (   ) 16-20 years

   (   ) More than 20 years

Section 2

Essential composite indicators and their variables of educational quality management for an effective Masters Degree Program in Educational Administration are:

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1 Visionary Leadership				
1.1 Input Variables				
1.1.1 There is sufficient market needs information available. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.2 There is sufficient appropriate students' needs information available. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.3 There is sufficient stakeholders' needs information available. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.4 There is sufficient educational market research information available. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.5 There is sufficient faculty members competency data available. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.6 There is faculty members competency expectation information available. Comments: …………………………...	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.7 There is sufficient program resources information available. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.8 There is sufficient servicing community information available. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2 Process Variables				
1.2.1 All concerned are involved in vision development. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1.2.2 All concerned contribute to reach the vision. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.3 Student and stakeholder satisfaction is used for performance improvement. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.4 Student and stakeholder dissatisfaction is promptly solved. Comments: …………………….………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.5 Set strategic plans in order to achieve the aims set. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.6 Reform organisation using qualified management approaches. Comments: …………………….………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.7 Use qualified systematic performance evaluation approach. Comments: ………..……………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.8 Focus on participative management. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.9 Encourage faculty members to develop and learn. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.10 Encourage faculty members to be innovators. Comments: ………………………..…..	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.11 Encourage faculty members to be creative. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.12 Share knowledge between team members. Comments: …………………….……	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.13 Use program performance review for continuous improvement. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.14 Use quality assurance information for continuous performance improvement. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.15 Encourage communities to develop program's values. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1.3 Output Variables				
1.3.1 Qualified human resource plans are developed. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.2 Resources plans for strategy deployment are developed. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.3 The goals for producing graduates are practical. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.4 The goals for producing graduates keep faith with the stakeholders' expectations. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.5 The goals for producing graduates emphasize the excellence of the program academic. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.6 The goals for producing graduates balance the needs of stakeholders. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.7 The teaching and learning plans balance market needs. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.8 Teaching and learning plans are updated to change, such as, for changes in technology and in economics Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.9 Teaching and learning plans are relevant to educational business conditions. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.10 Teaching and learning plans relate to the curriculum. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.11 Program leaders serve as role models through their competencies. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.12 Program leaders serve as role models through their ethical behaviour. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1.3.13 Decrease the ratio of resource usage. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.14 The number of functional departments is assessed. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.15 The number of functional departments is accredited. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.16 Evidence that leader promptly solves program complaints. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.17 Reporting the proportion of fully deployed action plans / activities provided to service communities. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.19 Obtain an annual increase in the number of applicants. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2 Learning-centred Education				
2.1 Input Variables				
2.1.1 Curriculum philosophy relates to the program's vision. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.2 Curriculum objectives relate to the curriculum's philosophy. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.3 Curriculum structure supports curriculum objectives. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.4 Curriculum structure meets standard criteria. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.5 Curriculum objectives relate to public policy. Comments: …………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.1.6 Curriculum goals are problem-solving oriented. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.7 Curriculum goals balance students' needs. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.8 Curriculum goals focus on a various assessment approach. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.9 Curriculum is well-designed for assisting students to become well-rounded administrators in education. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.10 Curriculum is appropriately designed to develop students to be excellent academic leaders. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.11 Curriculum is appropriately designed to develop students' research competencies. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.12 Curriculum is well-designed for developing students having competencies for profession. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.13 There are sufficient elective subjects provided to meet students' needs. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.14 The number of faculty with higher degrees meets the standard criteria. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.15 Faculty has knowledgeable in student-centred approach for teaching and learning process. Comments: …………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.16 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.17 There is a sufficient amount of appropriate physical resources. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.1.18 There is an advisory system that is practicable in promoting all dimensions of student development. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.19 There is an acceptable system for monitoring student progress. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.20 There is an acceptable system for evaluating student performance. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2 Process Variables				
2.2.1 Set high expectations for all students. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.2 Set appropriate criteria and standards for all students. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.3 Provide opportunities for all concerns about curriculum content development to be heard. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.4 Faculties teach in areas that are directly related to their field of specialisation. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.5 Teaching and learning process is research-oriented in its focus. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.6 Encourage good interactions with students. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.7 Provide student with opportunities to select their subjects based on their interests. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.8 Use systematically authentic evaluation approaches. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.3 **Output Indicators**				
2.3.1 Use appropriate technologies in the teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.2 Use formative assessment and evaluation approaches in teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.3 Develop a high level of competency in skills of problem-solving amongst the students. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.4 Develop a high level of competency amongst the students in the use of information and computer technology. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.5 Students report that they are satisfied with the faculties' teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.6 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.7 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.8 The proportions of students' papers, research articles are published in national and international academic journals. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.9 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.10 Per cent of students who graduate within expected time. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
Additional recommendations: ……………………………………....				
3. **Organisational and Personal Learning**				
3.1 **Input Indicators**				
3.1.1 There is sufficient validated information to indicate whether or not learning is taking place. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.1.2 There are validated processes designed to track progress on strategic goals. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2 **Process Indicators**				
3.2.1 Promoting faculty members to create ideas for organisation performance improvement. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.2 Use education and training needs information in the design of training and further educating. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.3 Reinforce the learning environment for students. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.4 Reinforce the learning environment for faculty members performance improvement. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.5 Reinforce the learning environment for stakeholders. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.6 Provide opportunities to faculty members for continuous performance improvement. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3 **Output Indicators**				
3.3.1 Faculty members improve their performance as a result of their working experiences. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.2 Evidence that there is program leaders focuses on solving faculty members problems at their source. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
3.3.3 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.4 Evidence that learning driven by opportunities to effect significant and meaningful change. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.5 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.6 The nature and type, and the amount of researches in teaching and learning development are undertaken. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.7 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.8 The proportion of innovation finding that affected a major change in the program. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.9 The proportion of research finding that affected a major change in the program. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.10 Evidence that faculty use teaching and learning assessment to improve students' performance. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.11 Evidence of faculty use teaching and learning assessment to improve their competencies. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
3.3.12 Evidence of leaders use teaching and learning assessment to improve the program's performance results. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.13 Evidence of there is strong alumni support. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.14 Evidence of there is strong stakeholder support. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional Recommendations: …………………………………………				

4. Valuing Faculty, Staff, and Partners

4.1 Input Indicators

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.1.1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.3 There is a validated faculty members performance evaluation approach. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.4 There is adequate funding for supporting the research. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.5 There is adequate funding for supporting the innovation project. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.2 **Process Indicators**				
4.2.1 Implement human resources plan. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.2 Use decentralisation and empowerment to assist in the overcoming of problems. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.3 Use faculty members performance evaluation as measures of their performance. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.4 Use needs assessments to create a learning culture. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.5 Use faculty members satisfactions to continuous improve their performance. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.6 Prompt solve faculty members dissatisfaction. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.7 Work to identify high-potential individuals to fill key positions in the future. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3 **Output Indicators**	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.1 Strategic plans are developed by all concerned. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.2 Evidence of responding to improve students' educational needs in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.3 Evidence of responding to program's process improves in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.4 Evidence of faculty response to improve students' learning performance in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.5 Evidence of responding to program's improving performance in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.3.6 Evidence that program leaders motivate faculty members developing and utilising their full potential. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.7 Evidence that program leaders make efforts to conduct performance excellences. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.8 There is faculty members development activities organized for innovation creating. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.9 There is faculty members development activities organized for research. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.10 Research innovation supported by internal grants. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.11 Research innovation supported by external grants. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.12 The number of books produces by faculty. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.13 The number of faculty papers, research papers publishes in recognised academic journals, nationally and internationally. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.14 The number of faculty members is other organisations consultants. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.15 The proportion of faculty members is invited to teach Masters level class in other Masters Degree institutes. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.16 The proportion of faculty members is invited to be self-studied / thesis advisors. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.17 The proportion of faculty members is invited to be members of examiner committees in other Masters Degree institutes.	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.3.18 The proportion of faculty members is co-researchers with external organisations. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.19 The proportion of faculty members formally presents academic output in the area of educational administration. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.20 The proportion of the cooperation among senior leaders, faculty, and staff is success. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.21 The proportion of the joint ventures with stakeholders and potential contributors is success. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional Recommendations: ………………………………………...				

Thank you very much for your assistance and support.

Questionnaire 2

Project title: **Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand**

1. This Delphi survey questionnaire 2 consists of four composite indicators and their variables applied from Baldrige National Quality Program (2006), core values and concepts for educational criteria performance excellence, the same as questionnaire 1 which are:
   1. Visionary leadership;
   2. Learning-centred education;
   3. Organisational and personal learning; and
   4. Valuing faculty, staff, and partners; and their variables.

   This questionnaire 2 has also revealed each expert utility and usability ratings and their median and interquatile range.

2. Please reconsider the *importance* of the items related to these variables – for both *utility* and *usability* - by rating each on a score of 10 to 1 (10 = high score, 1 = low score):please tick (/) the score that most closely corresponds to your opinion.

3. If your new rating is outside the number of medium +2 or -2, should you wish to do so, please – in the spaces provided – give reasons for your particular rating of that item to fulfil the findings (Beech (1999) in " Go the Extra Mile – Use the Delphi Technique" , p. 284).

Item	Utility					Usability				
	Your previous rating	Median (Q2)	Inter-quartile Range (Q3-Q1)	Please give a rating that corresponds to your opinion	Your reasons for new rating	Your previous rating	Median (Q2)	Inter-quartile Range (Q3-Q1)	Please give a rating that corresponds to your opinion	Your reasons for new rating
1. Visionary Leadership										
1.1 Input Variables										
1.1.1 There is sufficient market needs information available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.1.2 There is sufficient appropriate students' needs information available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.1.3 There is sufficient stakeholders' needs information available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.1.4 There is sufficient educational market research information available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.1.5 There is sufficient faculty members competency data available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.1.6 There is faculty members competency expectation information available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.1.7 There is sufficient program resources information available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.1.8 There is sufficient servicing community information available.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.2 Process Variables										
1.2.1 All concerned are involved in vision development.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.2.2 All concerned contribute to reach the vision.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.2.3 Student and stakeholder satisfaction is used for continuous performance improvement.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.2.4 Student and stakeholder dissatisfaction is promptly solved.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
1.2.5 Set strategic plans in order to achieve the aims set.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	

1.2.6	Reform organisation using qualified management approaches.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.7	Use qualified systematic performance evaluation approach.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.8	Focus on participative management.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.9	Encourage faculty members to develop and learn.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.10	Encourage faculty members to be innovators.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.11	Encourage faculty members to be creative.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.12	Share knowledge between team members.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.13	Use program performance review for continuous improvement.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.14	Use quality assurance information for continuous performance improvement.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.2.15	Encourage communities to develop program's values.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.3	**Output Variables**										
1.3.1	Qualified human resource plans are developed.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.3.2	Resources plans for strategic deployment are developed.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.3.3	The goals for producing graduates are practical.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.3.4	The goals for producing graduates keep faith with the stakeholders' expectations.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.3.5	The goals for producing graduates emphasise the excellence of the program academic.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.3.6	The goals for producing graduates balance the needs of stakeholders.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	
1.3.7	The teaching and learning plans balance market needs.				High 10 9 8 7 6 5 4 3 2 1 Low				High 10 9 8 7 6 5 4 3 2 1 Low	

1.3.8	Teaching and learning plans are updated to change, such as, for changes in technology and in economies.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.9	Teaching and learning plans are relevant to educational business conditions.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.10	Teaching and learning plans relate to the curriculum.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.11	Program leaders serve as role models through their competencies.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.12	Program leaders serve as role models through their ethical behaviour.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.13	Decrease the ratio of resource usage.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.14	The number of functional departments is assessed.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.315	The number of functional departments is accredited.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.16	Evidence that leader promptly solves program complaints.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.17	Reporting the proportion of fully deployed action plans / activities provided to service communities.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.18	Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
1.3.19	Obtain an annual increase in the number of applicants.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	

2. Learning-centred Education

2.1 Input Variables

2.1.1	Curriculum philosophy relates to the program's vision.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
2.1.2	Curriculum objectives relate to the curriculum's philosophy.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
2.1.3	Curriculum structure supports curriculum objectives.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	
2.1.4	Curriculum structure meets standard criteria.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1	

2.1.5 Curriculum objectives relate to public policy.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.6 Curriculum goals are problem-solving oriented.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.7 Curriculum goals balance students' needs.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.8 Curriculum goals focus on a various assessment approach.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.9 Curriculum is well-designed for assisting students to become well-rounded administrators in education.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.10 Curriculum is appropriately designed to develop students to be excellent academic leaders.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.11 Curriculum is appropriately designed to develop students' research competencies.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.12 Curriculum is well-designed for developing students having competencies for profession.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.13 There are sufficient elective subjects provided to meet students' needs.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.14 The number of faculty with higher degrees meets the standard criteria.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.15 Faculty has knowledgeable in student-centred approach for teaching and learning process.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.16 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.17 There is a sufficient amount of appropriate physical resources.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.18 There is an advisory system that is practicable in promoting all dimensions of student development.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
2.1.19 There is an acceptable system for monitoring student progress.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	

					High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.1.20	There is an acceptable system for evaluating student performance.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.1.21	There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2	**Process Variables**										
2.2.1	Set high expectations for all students.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2.2	Set appropriate criteria and standards for all students.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2.3	Provide opportunities for all concerns about curriculum content development to be heard.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2.4	Faculties teach in areas that are directly related to their field of specialisation.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2.5	Teaching and learning process is research-oriented in its focus.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2.6	Encourage good interactions with students.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2.7	Provide student with opportunities to select their subjects based on their interests.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.2.8	Use systematically authentic evaluation approaches.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3	**Output Indicators**										
2.3.1	Use appropriate technologies in the teaching and learning process.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.2	Use formative assessment and evaluation approaches in teaching and learning process.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.3	Develop a high level of competency in skills of problem-solving amongst the students.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.4	Develop a high level of competency amongst the students in the use of information and computer technology.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	

No.	Item				Scale 1					Scale 2	
2.3.5	Students report that they are satisfied with the faculties' teaching and learning process.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.6	Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.7	Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.8	The proportions of students' papers, research articles are published in national and international academic journals.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.9	Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.10	Per cent of students who graduate within expected time.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
2.3.11	Curriculum content is continuously developed. (New item is designed by expert suggestion.)				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	

3.   Organisational and Personal Learning

3.1   Input Indicators

No.	Item				Scale 1					Scale 2	
3.1.1	There is sufficient validated information to indicate whether or not learning is taking place.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
3.1.2	There are validated processes designed to track progress on strategic goals.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
3.1.3	There is sufficient resource, technology availability for organization and personal learning. (New item is designed by expert suggestion.)				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	

3.1.4	The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work. (New item is designed by expert suggestion.)				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.2	**Process Indicators**									
3.2.1	Promoting faculty members to create ideas for organisation performance improvement.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.2.2	Using education and training needs information in the design of training and further educating.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.2.3	Reinforce the learning environment for students.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.2.4	Reinforce the learning environment for faculty members performance improvement.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.2.5	Reinforce the learning environment for stakeholders.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.2.6	Provide opportunities to faculty members for continuous performance improvement.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3	**Output Indicators**									
3.3.1	Faculty members improve their performance as a result of their working experiences.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.2	Evidence that there is program leaders focuses on solving faculty members problems at their source.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.3	There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.4	Evidence that learning driven by opportunities to effect significant and meaningful change.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	

					High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.5	Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.6	The nature and type, and the amount of researches in teaching and learning development are undertaken.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.7	The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.8	The proportion of innovation finding that affected a major change in the program.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.9	The proportion of research finding that affected a major change in the program.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.10	Evidence that faculty use teaching and learning assessment to improve students' performance.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.11	Evidence that faculty use teaching and learning assessment to improve their competencies.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.12	Evidence that leaders use teaching and learning assessment to improve the program's performance results.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.13	Evidence of there is strong alumni support.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
3.3.14	Evidence of there is strong stakeholder support.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	

4. Valuing Faculty, Staff, and Partners

4.1 Input Indicators

					High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.1.1	There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	

4.1.2	There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.1.3	There is a validated faculty members performance evaluation approach.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.1.4	There is adequate funding for supporting the research.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.1.5	There is adequate funding for supporting the innovation project.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.1.6	There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.2	**Process Indicators**									
4.2.1	Implement human resources plan.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.2.2	Use decentralisation and empowerment to assist in the overcoming of problems.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.2.3	Use faculty members performance evaluation as measures of their performance.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.2.4	Use needs assessment to create a learning culture.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.2.5	Use faculty members satisfactions to continuous improve their performance.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.2.6	Promptly solve faculty members dissatisfaction.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.2.7	Work to identify high-potential individuals to fill key positions in the future.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.3	**Output Indicators**									
4.3.1	Strategic plans are developed by all concerned.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	
4.3.2	Evidence of responding to improve students' educational needs in a timely manner.				High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1	

					High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.3	Evidence of responding to program's process improves in a timely manner.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.4	Evidence of faculty response to improve students' learning performance in a timely manner.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.5	Evidence of responding to program's improving performance in a timely manner.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.6	Evidence that program leaders motivate faculty members developing and utilising their full potential.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.7	Evidence that program leaders make efforts to conduct performance excellences.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.8	There is faculty members development activities organised for innovation creating.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.9	There is faculty members development activities organised for research embarking.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.10	Research innovation supported by internal grants.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.11	Research innovation supported by external grants.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.12	The number of books produces by faculty.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.13	The number of faculty papers, research papers publishes in recognised academic journals, nationally and internationally.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.14	The number of faculty members is other organisation consultant.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.15	The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.16	The proportion of faculty members is invited to be self-studied / thesis advisors.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	

4.3.17	The proportion of faculty members is invited to be members of examiner committees in other Masters Degree institutes.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.18	The proportion of faculty members is co-researchers with external organisations.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.19	The proportion of faculty members formally presents academic output in the area of educational administration.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.20	The proportion of the cooperation among senior leaders, faculty, and staff is success.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	
4.3.21	The proportion of the joint ventures with stakeholders and potential contributors is success.				High Low 10 9 8 7 6 5 4 3 2 1					High Low 10 9 8 7 6 5 4 3 2 1	

Thank you very much for your assistance and support.

Questionnaire 3

Project title: **Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand.**

Details for completing questionnaire

1. This Delphi survey questionnaire 3 consists of four composite indicators and their variables applied from Baldridge National Quality Program (2006), core values and concepts for educational criteria performance excellence, by ranking in order of the number of median 2 of each variable of each composite indicator resulted from questionnaire 2 which are:

   1. Visionary leadership;
   2. Learning-centred education;
   3. Organisational and personal learning; and
   4. Valuing faculty, staff, and partners

   and their variables.

   This questionnaire 3 has also revealed each group utility and usability medians 1 and 2 , whiles the variable items of each composite indicators are ordered by the number of questionnaire round 2 medians.

2. Please reconsider the rate for each composite indicators and their variables – by rating each on a score of 10 to 1 (10 = high score, 1 = Low score): Please tick (/) the score that most closely corresponds to your opinion.

3. Summarised Questionnaire 1 and 2 for composite indicators and their variables utility and usability aspects which each item is ordered by the utility aspect of the second round questionnaire median are presented, as attached.

Section 1

Composite Indicator	Utility	Usability
1. **Visionary Leadership**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1
2. **Learning-centred Education**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1
3. **Organisational and Personal Learning**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1
4. **Valuing Faculty, Staff, and Partners**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
1 Visionary Leadership						
1.1 Input Variables						
1.1.1 There is sufficient appropriate students' needs information available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.1.2 There is sufficient program resources information available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.1.3 There is sufficient market needs information available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.1.4 There is sufficient stakeholders' needs information available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.1.5 There is sufficient educational market research information available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.1.6 There is sufficient faculty members competency data available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.1.7 There is faculty members competency expectation information available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.1.8 There is sufficient servicing community information available.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2 Process Variables						
1.2.1 Use quality assurance information for continuous performance improvement.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.2 All concerned are involved in vision development.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.3 All concerned contribute to reach the vision.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.4 Student and stakeholder satisfaction is used for continuous performance improvement.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.5 Set strategic plans in order to achieve the aims set.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
1.2.6 Reform organisation using qualified management approaches.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.7 Use qualified systematic performance evaluation approach.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.8 Focus on participative management.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.9 Encourage faculty members to develop and learn.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.10 Encourage faculty members to be innovators.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.11 Encourage faculty members to be creative.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.12 Share knowledge between team members.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.13 Use program performance review for continuous improvement.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.14 Student and stakeholder dissatisfaction is promptly solved.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.2.15 Encourage communities to develop program's values.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3 Output Variables						
1.3.1 Teaching and learning plans relate to the curriculum.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.2 Qualified human resource plans are developed.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.3 Resources plans for strategic deployment are developed.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.4 The goals for producing graduates are practical.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.5 The goals for producing graduates keep faith with the stakeholders' expectations.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.6 The goals for producing graduates emphasize the excellence of the program academic.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
1.3.7 The goals for producing graduates balance the needs of stakeholders.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.8 The teaching and learning plans balance market needs.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.10 Program leaders serve as role models through their competencies.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.11 Program leaders serve as role models through their ethical Behaviour.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.12 Teaching and learning plans are relevant to educational business conditions.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.13 Decrease the ratio of resource usage.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.14 The number of functional departments is assessed.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.15 The number of functional departments is accredited.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.16 Evidence that leader promptly solves program complaints.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.17 Reporting the proportion of fully deployed action plans / activities provided to service communities.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
1.3.19 Obtain an annual increase in the number of applicants.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

2   Learning-centred Education

2.1   Input Variables

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
2.1.1 Curriculum philosophy relates to the program's vision.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

	Utility	Utility			Usability	Usability	
Item	Median 2	Median 1			Median 2	Median 1	
2.1.2 Curriculum objectives relate to the curriculum's philosophy.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.3 Curriculum structure meets standard criteria.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.4 Curriculum structure supports curriculum objectives.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.5 Curriculum objectives relate to public policy.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.6 Curriculum goals are problem-solving oriented.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.7 Curriculum goals balance students' needs.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.9 Curriculum is appropriately designed to develop students to be excellent academic leaders.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.10 Curriculum is appropriately designed to develop students' research competencies.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.11 Curriculum is well-designed for developing students having competencies for profession.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.12 There are sufficient elective subjects provided to meet students' needs.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.13 The number of faculty with higher degrees meets the standard criteria.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1
2.1.14 Faculty has knowledgeable in student-centred approach for teaching and learning process.			High Low 10 9 8 7 6 5 4 3 2 1				High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
2.1.15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.1.16 There is an advisory system that is practicable in promoting all dimensions of student development.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.1.17 There is an acceptable system for evaluating student performance.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.1.18 Curriculum goals focus on a various assessment approach.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.1.19 There is a sufficient amount of appropriate physical resources.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.1.20 There is an acceptable system for monitoring student progress.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.1.21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.2 Process Variables						
2.2.1 Provide opportunities for all concerns about curriculum content development to be heard.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.2.2 Faculties teach in areas that are directly related to their field of specialisation.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.2.3 Teaching and learning process is research-oriented in its focus.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.2.4 Encourage good interactions with students.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.2.5 Provide student with opportunities to select their subjects based on their interests.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
2.2.6 Use systematically authentic evaluation approaches.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.2.7 Set high expectations for all students.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.2.8 Set appropriate criteria and standards for all students.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3 Output Indicators						
2.3.1 Use appropriate technologies in the teaching and learning process.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.2 Use formative assessment and evaluation approaches in teaching and learning process.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.3 Develop a high level of competency in skills of problem-solving amongst the students.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.4 Develop a high level of competency amongst the students in the use of information and computer technology.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.5 Students report that they are satisfied with the faculties' teaching and learning process.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.6 The proportions of students' papers, research articles are published in national and international academic journals.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.7 Per cent of students who graduate within expected time.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.8 Curriculum content is continuously developed. (New item is designed by expert suggestion.)			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
2.3.10 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
2.3.11 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

3. Organisational and Personal Learning

3.1 Input Indicators

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
3.1.1 There is sufficient validated information to indicate whether or not learning is taking place.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.1.2 There is sufficient resource, technology availability for organisation and personal learning. (New item is designed by expert suggestion.)			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.1.3 There are validated processes designed to track progress on strategic goals.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.1.4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work. (New item is designed by expert suggestion.)			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

3.2 Process Indicators

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
3.2.1 Promoting faculty members to create ideas for organisation performance improvement.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.2.2 Using education and training needs information in the design of training and further educating.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
3.2.3 Reinforce the learning environment for students.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.2.4 Reinforce the learning environment for faculty members performance improvement.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.2.5 Reinforce the learning environment for stakeholders.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.2.6 Provide opportunities to faculty members for continuous performance improvement.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3 Output Indicators						
3.3.1 Evidence that faculty use teaching and learning assessment to improve their competencies.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.3 Faculty members improve their performance as a result of their working experiences.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.4 Evidence that there is program leaders focuses on solving faculty members problems at their source.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesized.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
3.3.7 The nature and type, and the amount of researches in teaching and learning development are undertaken.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.9 The proportion of innovation finding that affected a major change in the program.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.10 The proportion of research finding that affected a major change in the program.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.11 Evidence that faculty use teaching and learning assessment to improve students' performance.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.12 Evidence of there is strong alumni support.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.13 Evidence of there is strong stakeholder support.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
3.3.14 Evidence that learning driven by opportunities to effect significant and meaningful change.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4 Valuing Faculty, Staff, and Partners						
4.1 Input Indicators						
4.1.1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
4.1.2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.1.3 There is a validated faculty members performance evaluation approach.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.1.4 There is adequate funding for supporting the research.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.1.5 There is adequate funding for supporting the innovation project.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.1.6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.2 Process Indicators						
4.2.1 Use faculty members performance evaluation measures of their performance.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.2.2 Implement human resources plan.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.2.3 Use decentralisation and empowerment to assist in the overcoming of problems.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.2.4 Use needs assessment to create a learning culture.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.2.5 Use faculty members satisfactions to continuous improve their performance.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.2.6 Promptly solve faculty members dissatisfaction.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.2.7 Work to identify high-potential individuals to fill key positions in the future.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility Median 2	Utility Median 1	Utility	Usability Median 2	Usability Median 1	Usability
4.3 **Output Indicators**						
4.3.1 Research innovation supported by internal grants.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.2 Research innovation supported by external grants.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.3 Strategic plans are developed by all concerned.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.4 Evidence of responding to improve students' educational needs in a timely manner.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.5 Evidence of responding to program's process improves in a timely manner.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.6 Evidence of faculty response to improve students' learning performance in a timely manner.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.7 Evidence of responding to program's improving performance in a timely manner.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.8 Evidence that program leaders motivate faculty members developing and utilising their full potential.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.9 Evidence that program leaders make efforts to conduct performance excellences.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.10 There is faculty members development activities organised for innovation creating.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.11 There is faculty members development activities organised for research embarking.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1
4.3.12 The number of books produces by faculty.			High Low 10 9 8 7 6 5 4 3 2 1			High Low 10 9 8 7 6 5 4 3 2 1

Item	Utility	Utility	Usability	Usability
	Median 2	Median 1		Median 2	Median 1	

Item	Median 2	Median 1	Utility	Median 2	Median 1	Usability
4.3.13 The number of faculty papers, research papers publishes in recognised academic journals, nationally and internationally.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.14 The number of faculty members is other organisation consultant.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.16 The proportion of faculty members is invited to be self-studied / thesis advisors.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.17 The proportion of faculty members is invited to be members of examiner committees in other Masters Degree institutes.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.18 The proportion of faculty members is co-researchers with external organisations.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.19 The proportion of faculty members formally presents academic output in the area of educational administration.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.20 The proportion of the cooperation among senior leaders, faculty, and staff is success.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1
4.3.21 The proportion of the joint ventures with stakeholders and potential contributors is success.			High　　　　Low 10 9 8 7 6 5 4 3 2 1			High　　　　Low 10 9 8 7 6 5 4 3 2 1

Thank you very much for your assistance and support.

Questionnaire 4

Project title: Composite Indicators for Educational Quality Management for a Master Degree Program of Educational Administration in Private Higher Education Institutions in Thailand.

Details for completing questionnaire

1. This survey questionnaire will be used as an instrument for developing composite indicators for educational quality management for a Master Degree Program of Educational Administration in private higher education institutions in Thailand**.**

2. This questionnaire has 3 sections.

   Section 1
   - In this section, please provide details of your personal situation.

   Section 2
   - The section 2 consists of four composite indicators applied from Baldrige National Quality Program (2005), core values and concepts for educational criteria performance excellence, which the indicators are ordered by the aggregate scores of the Utility aspect that resulted from the previous Delphi survey method which are: 1. Visionary Leadership 2. Learning-centred Education 3. Organisational and Personal Learning and 4. Valuing Faculty, Staff, and Partners.
   - Please consider the *importance* of these composite indicators – for both *utility* and *usability* for educational quality management for a Master Degree Program of Educational Administration in private higher education institutions in Thailand – by rating each on a scale of 1 to 10 (1 = low, 10 = high): please place a tick **(✓)** on the number that most closely corresponds to your opinion.

   Section 3
   - The section 3 consists of the variables of those four composite indicators which the variables are ordered by the aggregate scores of their *utility* aspect that resulted from the previous Delphi survey method.
   - Please consider the *importance* of these variables – for both *utility* and *usability* for educational quality management for a Master Degree Program of Educational Administration in private higher educational institutions in Thailand – by rating each on a scale of 1 to 10 (1 = low, 10 = high): please place a tick **(✓)** on the number that most closely corresponds to your opinion. Should you wish to do so, please – in the spaces provided – give reasons for your particular rating of any item.
   - Should you have additional comments to make relating to any specific items, please write your comments in the spaces provide

Section 1

Please place a tick (✓) in the bracket and fill with appropriate answer which reflects your personal situation:

1. Name : …………………………………………………….
2. Gender:

      (   ) Male   (   ) Female

3. Age: (please specify)………..years
4. Final earned degree:

     (   ) Bachelor Degree   (   ) Master Degree

     (   ) Doctorate Degree   (   ) Post-Doctorate Degree

5. Academic Position

     (   ) Instructor   (   ) Assistant Professor

     (   ) Associate Professor   (   ) Professor

6. Years in working experience:

     (   ) Less Than 5 years   (   ) 6-10 years

     (   ) 11-15 years   (   ) 16-20 years

     (   ) More than 20 years

Section 2

Please place a tick (✓) on the number rating the importance

of the composite indicators:

	Composite Indicator	Utility	Usability
1	**Visionary Leadership**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1
2	**Learning-centred Education**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1
3	**Organisational and Personal Learning**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1
4	**Valuing Faculty, Staff, and Partners**	High Low 10 9 8 7 6 5 4 3 2 1	High Low 10 9 8 7 6 5 4 3 2 1

Section 3

Please place a tick (✓) on the number rating the importance of variables for each composite indicator which are ordered by the Delphi expert panel:

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1. Visionary Leadership				
1.1 Input Variables				
1.1.1 There is sufficient program resources information available. Comments: ………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.2 There is sufficient appropriate students' needs information available. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.3 There is sufficient faculty members competency data available. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.4 There is sufficient stakeholders' needs information available. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.5 There is sufficient market needs information available. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.6 There is sufficient educational market research information available. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.7 There is faculty members competency expectation information available. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.1.8 There is sufficient servicing community information available. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: ………………………..…..………				
1.2 Process Variables				
1.2.1 Use quality assurance information for continuous performance improvement. Comments: ………………………….	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1.2.2 Student and stakeholder satisfaction is used for continuous performance improvement. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.3 Use qualified systematic performance evaluation approach. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.4 Set strategic plans in order to achieve the aims set. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.5 Reform organisation using qualified management approaches. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.6 Encourage faculty members to develop and learn. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.7 All concerned are involved in vision development. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.8 Focus on participative management. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.9 Use program performance review for continuous improvement. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.10 Encourage faculty members to be creative. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.11 All concerned contribute to reach the vision. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.12 Share knowledge between team members. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.13 Encourage faculty members to be innovators. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.14 Student and stakeholder dissatisfaction is promptly solved. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.2.15 Encourage communities to develop program's values. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: ……………………………………….				

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1.3 Output Variables				
1.3.1 Teaching and learning plans relate to the curriculum. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.2 Program leaders serve as role models through their competencies. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.3 Program leaders serve as role models through their ethical Behaviour. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.4 The goals for producing graduates emphasize the excellence of the program academic. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.5 Qualified human resource plans are developed. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.6 Resources plans for strategic deployment are developed. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.7 The goals for producing graduates are practical. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.8 The goals for producing graduates keep faith with the stakeholders' expectations. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.9 The teaching and learning plans balance market needs. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.10 The goals for producing graduates balance the needs of stakeholders. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.12 Teaching and learning plans are relevant to educational business conditions. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.13 The number of functional departments is assessed. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
1.3.14 The number of functional departments is accredited. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.15 Obtain an annual increase in the number of applicants. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.16 Decrease the ratio of resource usage. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.17 Evidence that leader promptly solves program complaints. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.18 Reporting the proportion of fully deployed action plans / activities provided to service communities. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
1.3.19 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: ……………………………………				

2. Learning-Centred Education

2.1 Input Variable

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.1.1 Curriculum objectives relate to the curriculum's philosophy. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.2 Curriculum structure meets standard criteria. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.3 Curriculum philosophy relates to the program's vision. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.4 Curriculum structure supports curriculum objectives. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.5 Curriculum is appropriately designed to develop students' research competencies. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.6 The number of faculty with higher degrees meets the standard criteria. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.1.7 There is an acceptable system for evaluating student performance. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.8 Curriculum goals are problem-solving oriented. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.9 Faculty has knowledgeable in student-centred approach for teaching and learning process. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.10 There is an advisory system that is practicable in promoting all dimensions of student development. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.11 Curriculum is appropriately designed to develop students to be excellent academic leaders. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.12 Curriculum is well-designed for developing students having competencies for profession. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.13 Curriculum is well-designed for assisting students to become well-rounded administrators in education. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.14 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.15 Curriculum goals balance students' needs. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.16 There are sufficient elective subjects provided to meet students' needs. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.17 Curriculum objectives relate to public policy. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.18 Curriculum goals focus on a various assessment approach. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.1.19 There is an acceptable system for monitoring student progress. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.20 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.1.21 There is a sufficient amount of appropriate physical resources. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: ……………………….……………				
2.2 Process Variables				
2.2.1 Faculties teach in areas that are directly related to their field of specialisation. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.2 Teaching and learning process is research-oriented in its focus. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.3 Encourage good interactions with students. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.4 Provide opportunities for all concerns about curriculum content development to be heard. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.5 Use systematically authentic evaluation approaches. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.6 Provide student with opportunities to select their subjects based on their interests. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.7 Set high expectations for all students. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.2.8 Set appropriate criteria and standards for all students. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: …………………………………				

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.3 **Output Indicators**				
2.3.1 Students report that they are satisfied with the faculties' teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.2 Develop a high level of competency in skills of problem-solving amongst the students. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.3 Develop a high level of competency amongst the students in the use of information and computer technology. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.4 Use appropriate technologies in the teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.5 Use formative assessment and evaluation approaches in teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.6 Curriculum content is continuously developed. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.7 The proportions of students' papers, research articles are published in national and international academic journals. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.8 Per cent of students who graduate within expected time. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
2.3.10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
2.3.11 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: ………………………………………				
3. Organisational and Personal Learning				
3.1 Input Indicators				
3.1.1 There is sufficient resource, technology availability for organisation and personal learning. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.1.2 There is sufficient validated information to indicate whether or not learning is taking place. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.1.3 There are validated processes designed to track progress on strategic goals. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.1.4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: ………………………………………				
3.2 Process Indicators				
3.2.1 Promoting faculty members to create ideas for organisation performance improvement. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.2 Provide opportunities to faculty members for continuous performance improvement. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.3 Reinforce the learning environment for students.. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.2.4 Reinforce the learning environment for faculty members performance improvement. Comments: ………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
3.2.5 Using education and training needs information in the design of training and further educating. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.2.6 Reinforce the learning environment for stakeholders. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
Additional recommendations: …………………………………				
3.3　Output Indicators				
3.3.1 Evidence that leaders use teaching and learning assessment to improve the program's performance results. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.3.2 Evidence that faculty use teaching and learning assessment to improve their competencies. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.3.3 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesized. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.3.4 Evidence that there is program leaders focuses on solving faculty members problems at their source. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.3.5 Evidence that faculty use teaching and learning assessment to improve students' performance. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.3.6 Faculty members improve their performance as a result of their working experiences. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.3.7 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	
3.3.8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills. Comments: ………………………………	High　　　Low 10 9 8 7 6　5 4 3 2 1		High　　　Low 10 9 8 7 6　5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
3.3.9 The nature and type, and the amount of researches in teaching and learning development are undertaken. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.10 The proportion of research finding that affected a major change in the program. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.11 The proportion of innovation finding that affected a major change in the program. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.12 Evidence of there is strong alumni support. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.13 Evidence of there is strong stakeholder support. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
3.3.14 Evidence that learning driven by opportunities to effect significant and meaningful change. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: ………………………………………				
4. Valuing Faculty, Staff, and Partners				
4.1 Input Indicators				
4.1.1 There is adequate funding for supporting the research. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.2 There is a validated faculty members performance evaluation approach. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.3 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process. Comments: ………………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.1.4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.5 There is adequate funding for supporting the innovation project. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.1.6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendation: …………………………………				
4.2 Process Indicators				
4.2.1 Use faculty members performance evaluation as measures of their performance. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.2 Implement human resources plan. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.3 Use decentralisation and empowerment to assist in the overcoming of problems. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.4 Use needs assessment to create a learning culture. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.5 Use faculty members satisfactions to continuous improve their performance. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.2.6 Work to identify high-potential individuals to fill key positions in the future. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.2.7 Promptly solve faculty members dissatisfaction. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: …………………………………				
4.3 Output Indicators				
4.3.1 Research innovation supported by internal grants. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.2 Research innovation supported by external grants. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.3 Strategic plans are developed by all concerned. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.4 Evidence that program leaders motivate faculty members developing and utilising their full potential. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.5 There is faculty members development activities organised for research embarking. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.6 The number of faculty papers, research papers publishes in recognised academic journals, nationally and internationally. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.7 Evidence of responding to improve students' educational needs in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.8 Evidence that program leaders make efforts to conduct performance excellences. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.9 Evidence of faculty response to improve students' learning performance in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.3.10 Evidence of responding to program's improving performance in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.11 The proportion of the cooperation among senior leaders, faculty, and staff is success. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.12 There is faculty members development activities organised for innovation creating. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.13 The number of faculty members is other organisation consultant. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.14 The proportion of faculty members is invited to be self-studied / thesis advisors. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.15 Evidence of responding to program's process improves in a timely manner. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.16 The number of books produces by faculty. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.17 The proportion of faculty members is invited to be members of examiner committees in other Masters Degree institutes. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.18 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.19 The proportion of faculty members is co-researchers with external organisations. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	

Item	Utility	Your reasons for this ranking	Usability	Your reasons for this ranking
4.3.20 The proportion of faculty members formally presents academic output in the area of educational administration. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
4.3.21 The proportion of the joint ventures with stakeholders and potential contributors is success. Comments: ……………………………	High Low 10 9 8 7 6 5 4 3 2 1		High Low 10 9 8 7 6 5 4 3 2 1	
Additional recommendations: …………………………….………				

Thank you very much for your assistance and support.

Appendix A: Analysis of Data

TABLE A1 DELPHI SURVEY ROUNDS 1 AND 2: UTILITY ASPECT

Each item is ordered by the utility aspect of the second round questionnaire median.

'F%' = per cent frequency of the same responses on Round 1 and 2)

Items	Utility (Round 1)				Utility (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
1. Visionary Leadership									
1.2 Input Variables									
1 There is sufficient appropriate students' needs information available.	10	10	9	7.5	10	9	9	9	61.9
2 There is sufficient program resources information available.	10	10	9	7.5	10	9	9	8	71.4
3 There is sufficient market needs information available.	10	10	8	7.5	10	9	8	8	61.9
4 There is sufficient stakeholders' needs information available.	10	9	8	7	10	8	8	7	66.7
5 There is sufficient educational market research information available.	10	9	8	6.5	10	9	8	8	76.2
6 There is sufficient faculty members competency data available.	10	9	8	6	10	9	8	8	61.9
7 There is faculty members competency expectation information available.	10	9	8	7	10	9	8	7	74.4
8 There is sufficient servicing community information available.	9	8.5	8	7	9	8	8	8	66.7
1.2 Process Variables									
1 Use quality assurance information for continuous performance improvement.	10	10	10	9	10	10	10	9	90.5
2 All concerned are involved in vision development.	10	10	9	8	10	10	9	8	76.2
3 All concerned contribute to reach the vision.	10	10	9	8	10	10	9	8	66.7
4 Student and stakeholder satisfaction is used for continuous performance improvement.	10	10	9	7.5	10	9	9	8	66.7
5 Set strategic plans in order to achieve the aims set.	10	10	9	8.5	10	10	9	9	76.2
6 Reform organisation using qualified management approaches.	10	9	9	7.5	10	9	9	8	71.4
7 Use qualified systematic performance evaluation approach.	10	10	9	9	10	10	9	9	80.9
8 Focus on participative management.	10	9	9	8	10	9	9	9	76.2
9 Encourage faculty members to develop and learn.	10	10	9	9	10	9	9	9	80.9
10 Encourage faculty members to be innovators.	10	9.75	8.5	7.25	10	9	9	8	61.9
11 Encourage faculty members to be creative.	10	9	9	8	10	9	9	8	66.7
12 Share knowledge between team members.	10	9	8.5	7	10	9	9	8	80.9
13 Use program performance review for continuous improvement.	10	10	9	8	10	9	9	8	66.7
14 Student and stakeholder dissatisfaction is promptly solved.	10	9	8	7	10	9	8	7	71.4
15 Encourage communities to develop program's values.	9	9	7.5	7	9	9	8	7	80.9

Items	Utility (Round 1)				Utility (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
1.3 Output Variables									
1 Teaching and learning plans relate to the curriculum.	10	10	10	8	10	10	10	8	85.7
2 Qualified human resource plans are developed.	10	10	9	8	10	9	9	8	71.4
3 Resources plans for strategic deployment are developed.	10	9	8	7.5	10	9	9	8	76.2
4 The goals for producing graduates are practical.	10	10	9	8	10	9	9	8	71.4
5 The goals for producing graduates keep faith with the stakeholders' expectations.	10	9	9	7.5	10	9	9	8	76.2
6 The goals for producing graduates emphasize the excellence of the program academic.	10	10	9	7.5	10	9	9	9	57.1
7 The goals for producing graduates balance the needs of stakeholders.	10	9	9	7	10	9	9	8	66.7
8 The teaching and learning plans balance market needs.	10	10	9	7	10	9	9	7	71.4
9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	10	9	8.5	8	10	9	9	8	76.2
10 Program leaders serve as role models through their competencies.	10	10	9	8.5	10	9	9	9	76.2
11 Program leaders serve as role models through their ethical behaviour.	10	10	9	8.5	10	10	9	9	85.7
12 Teaching and learning plans are relevant to educational business conditions.	10	9	8	6.5	10	9	8	7	80.9
13 Decrease the ratio of resource usage.	10	9	8	6	9	9	8	7	66.7
14 The number of functional departments is assessed.	10	9	8	7	9	9	8	7	76.2
15 The number of functional departments is accredited.	10	9	8	7.25	10	9	8	8	85.7
16 Evidence that leader promptly solves program complaints.	10	9	8	6.5	10	9	8	8	76.2
17 Reporting the proportion of fully deployed action plans / activities provided to service communities.	9	9	7.5	7	9	8	8	7	57.1
18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	9	8.75	7	6	9	9	8	7	80.9
19 Obtain an annual increase in the number of applicants.	10	9	8	7	10	9	8	7	76.2
2 Learning-centred Education									
2.1 Input Variables									
1 Curriculum philosophy relates to the program's vision.	10	10	10	9	10	10	10	9	85.7
2 Curriculum objectives relate to the curriculum's philosophy.	10	10	10	9	10	10	10	9	85.7
3 Curriculum structure meets standard criteria.	10	10	10	9	10	10	10	9	85.7
4 Curriculum structure supports curriculum objectives.	10	10	9	9	10	10	9	9	76.2
5 Curriculum objectives relate to public policy.	10	10	9	8	10	10	9	8	71.4
6 Curriculum goals are problem-solving oriented.	10	9	9	7	10	9	9	8	80.9
7 Curriculum goals balance students' needs.	10	9.75	9	7	10	9	9	8	80.9

Items	Utility (Round 1)				Utility (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	10	10	9	8	10	10	9	9	80.9
9 Curriculum is appropriately designed to develop students to be excellent academic leaders.	10	9.75	9	8.25	10	9	9	9	80.9
10 Curriculum is appropriately designed to develop students' research competencies.	10	10	9	8	10	9	9	8	76.2
11 Curriculum is well-designed for developing students having competencies for profession.	10	10	9	7.5	10	9	9	8	80.9
12 There are sufficient elective subjects provided to meet students' needs.	10	10	9	8.25	10	9	9	8	71.4
13 The number of faculty with higher degrees meets the standard criteria.	10	10	9	8.25	10	10	9	9	80.9
14 Faculty has knowledgeable in student-centred approach for teaching and learning process.	10	10	9	8	10	10	9	8	76.2
15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	10	10	9	7	10	9	9	8	66.7
16 There is an advisory system that is practicable in promoting all dimensions of student development.	10	9	9	8	10	9	9	8	76.2
17 There is an acceptable system for evaluating student performance.	10	9.5	9	8	10	9	9	8	76.2
18 Curriculum goals focus on a various assessment approach.	10	9	8	7.25	10	9	8	8	76.2
19 There is a sufficient amount of appropriate physical resources.	10	9	8	8	10	9	8	8	80.9
20 There is an acceptable system for monitoring student progress.	10	9	8	8	10	9	8	8	76.2
21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	10	9	8	8	10	9	8	8	90.5
2.2 Process Variables									
1 Provide opportunities for all concerns about curriculum content development to be heard.	10	9	9	7.5	10	9	9	8	85.7
2 Faculties teach in areas that are directly related to their field of specialisation.	10	10	9	9	10	10	9	9	80.9
3 Teaching and learning process is research-oriented in its focus.	10	9.75	9	8	10	9	9	8	76.2
4 Encourage good interactions with students.	10	10	8	7.25	10	10	9	8	71.4
5 Provide student with opportunities to select their subjects based on their interests.	10	9	9	8	10	9	9	8	76.2
6 Use systematically authentic evaluation approaches.	10	10	9	8	10	10	9	8	80.9
7 Set high expectations for all students.	10	9	8	7	9	9	8	7	76.2
8 Set appropriate criteria and standards for all students.	10	10	8	8	10	9	8	8	71.4
2.3 Output Variables									
1 Use appropriate technologies in the teaching and learning process.	10	10	9	9	10	9	9	9	76.2
2 Use formative assessment and evaluation approaches in teaching and learning process.	10	10	9	8	10	9	9	9	61.9

Items	Utility (Round 1)				Utility (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
3 Develop a high level of competency in skills of problem-solving amongst the students.	10	10	9	8	10	9	9	8	76.2
4 Develop a high level of competency amongst the students in the use of information and computer technology.	10	9	9	8	10	9	9	8	90.5
5 Students report that they are satisfied with the faculties' teaching and learning process.	10	9	9	7.5	10	9	9	8	85.7
6 The proportions of students' papers, research articles are published in national and international academic journals.	10	10	9	7.75	10	9	9	8	66.7
7 Per cent of students who graduate within expected time.	10	9	9	8	10	9	9	8	80.9
8 Curriculum content is continuously developed. (New item is designed by expert suggestion.)	-	-	-	-	10	10	9	8	-
9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	10	8.75	8	7	10	9	8	7	76.2
10 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	10	9	8	8	10	9	8	8	80.9
11 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	10	9	8	7.5	10	9	8	8	61.9
3 Organisational and Personal Learning									
3.1 Input Variables									
1 There is sufficient validated information to indicate whether or not learning is taking place.	10	9	9	8	10	9	9	8	76.2
2 There is sufficient resource, technology availability for organisation and personal learning. (New item is designed by expert suggestion.)	-	-	-	-	10	9	9	8	-
3 There are validated processes designed to track progress on strategic goals.	10	9	8	8	10	9	8	8	85.7
4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work. (New item is designed by expert suggestion.)	-	-	-	-	9	9	8	8	-
3.2 Process Variables									
1 Promoting faculty members to create ideas for organisation performance improvement.	10	9	8	8	10	9	8	8	85.7
2 Using education and training needs information in the design of training and further educating.	10	9	8	7	9	9	8	8	61.9
3 Reinforce the learning environment for students.	10	9	8	8	9	9	8	8	71.4
4 Reinforce the learning environment for faculty members performance improvement.	10	9	8	8	9	9	8	8	76.2
5 Reinforce the learning environment for stakeholders.	10	8.75	8	7	9	8	8	7	80.9
6 Provide opportunities to faculty members for continuous performance improvement.	10	9	8	8	10	9	8	8	90.5

Items	Utility (Round 1)				Utility (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
3.3 Output Variables									
1 Evidence that faculty use teaching and learning assessment to improve their competencies.	10	9	9	8	9	9	9	8	85.7
2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	10	9	8.5	8	10	9	9	8	76.2
3 Faculty members improves their performance as a result of their working experiences.	10	9	8	7	10	8	8	8	52.4
4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	10	9	8	6.25	9	8	8	8	61.9
5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	10	9	7.5	6	10	8	8	7	61.9
6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	10	9	8	7	10	8	8	7	76.2
7 The nature and type, and the amount of researches in teaching and learning development are undertaken.	10	9	8	8	10	9	8	8	71.4
8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	10	9	7.5	7	9	8	8	7	71.4
9 The proportion of innovation finding that affected a major change in the program.	10	9	8	7	10	9	8	7	80.9
10 The proportion of research finding that affected a major change in the program.	10	8.75	8	7	9	9	8	8	71.4
11 Evidence that faculty use teaching and learning assessment to improve students' performance.	10	9	8	8	10	9	8	8	76.2
12 Evidence of there is strong alumni support.	10	9	7.5	7	9	8	8	7	66.7
13 Evidence of there is strong stakeholder support.	10	9	7.5	6	9	8	8	7	61.9
14 Evidence that learning driven by opportunities to effect significant and meaningful change.	10	9	7	6	9	9	7	7	71.4
4 Valuing Faculty, Staff, and Partners									
4.1 Input Variables									
1. There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	10	10	9	8	10	10	9	8	80.9
2. There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	10	10	9	8	10	10	9	8	85.7
3. There is a validated faculty members performance evaluation approach.	10	9	9	8	10	9	9	8	85.7
4. There is adequate funding for supporting the research.	10	9.5	9	8	10	9	9	8	76.2
5. There is adequate funding for supporting the innovation project.	10	9	8	7	10	9	8	8	76.2
6. There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	10	8.5	8	6.5	10	8	8	7	80.9

Items	Utility (Round 1)				Utility (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
4.2 Process Variables									
1 Use faculty members performance evaluation as measures of their performance.	10	9	9	8	10	9	9	8	76.2
2 Implement human resources plan.	10	9	8	7	10	9	8	8	66.7
3 Use decentralisation and empowerment to assist in the overcoming of problems.	10	9	8	8	10	9	8	8	85.7
4 Use needs assessment to create a learning culture.	10	9	8	7	10	9	8	8	66.7
5 Use faculty members satisfactions to continuous improve their performance.	10	9	8	7	9	9	8	8	76.2
6 Promptly solve faculty members dissatisfaction.	10	8.75	8	6.25	10	8	8	7	76.2
7 Work to identify high-potential individuals to fill key positions in the future.	10	9	8	7	10	9	8	7	76.2
4.3 Output Variables									
1 Research innovation supported by internal grants.	10	10	9	8	10	9	9	8	66.7
2 Research innovation supported by external grants.	10	10	9	8	10	9	9	8	71.4
3 Strategic plans are developed by all concerned.	10	9	8.5	8	10	9	8	8	66.7
4 Evidence of responding to improve students' educational needs in a timely manner.	10	9	8	7	9	9	8	7	76.2
5 Evidence of responding to program's process improves in a timely manner.	10	8.75	8	7	10	9	8	7	76.2
6 Evidence of faculty response to improve students' learning performance in a timely manner.	10	8.75	8	7	10	8	8	7	80.9
7 Evidence of responding to program's improving performance in a timely manner.	10	9	8	7	10	9	8	8	71.4
8 Evidence that program leaders motivate faculty members developing and utilising their full potential.	10	9	8.5	7	10	9	8	8	66.7
9 Evidence that program leaders make efforts to conduct performance excellences.	10	9	8.5	7	10	9	8	8	76.2
10 There is faculty members development activities organised for innovation creating.	10	8.75	7.5	7	10	9	8	7	76.2
11 There is faculty members development activities organised for research embarking.	10	9	8	8	10	9	8	8	76.2
12 The number of books produces by faculty.	10	9	8.5	8	10	9	8	8	71.4
13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	10	9.75	8.5	8	10	9	8	8	80.9
14 The number of faculty members is other organisation consultant.	10	9	8	8	10	9	8	8	71.4
15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	10	9	8	7.5	10	9	8	8	76.2
16 The proportion of faculty members is invited to be self-studied / thesis advisors.	10	9	8	8	10	9	8	8	76.2
17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	10	8.25	8	7	10	9	8	8	76.2
18 The proportion of faculty members is co-researchers with external organisations.	10	9	8	7	10	9	8	8	76.2

Items	Utility (Round 1)				Utility (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
19 The proportion of faculty members formally presents academic output in the area of educational administration.	9	9	8	8	9	9	8	8	76.2
20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	10	9	8	7	10	9	8	7	76.2
21 The proportion of the joint ventures with stakeholders and potential contributors is success.	10	8	8	7	10	9	8	7	80.9

TABLE A2   DELPHI SURVEY ROUNDS 1 AND 2: USABILITY ASPECT

Each item is ordered by the usability aspect of the Round 2 median.

'F%' = per cent frequency of the same responses on Round 1 and 2

Items	Usability (Round 1)				Usability (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
1 Visionary Leadership									
1.1 Input Variables									
1 There is sufficient appropriate students' needs information available.	10	9	7	6	10	8	8	7	66.7
2 There is sufficient program resources information available.	10	9	8	6	10	9	8	8	61.9
3 There is sufficient market needs information available.	10	8	7	6	10	8	7	6	76.2
4 There is sufficient stakeholders' needs information available.	9	7.5	6	6	9	7	7	6	66.7
5 There is sufficient educational market research information available.	10	7.5	7	5.75	10	8	7	6	71.4
6 There is sufficient faculty members competency data available.	10	8	6	5.13	10	7	7	6	61.9
7 There is faculty members competency expectation information available.	10	9	7	5.75	10	8	7	6	57.1
8 There is sufficient servicing community information available.	9	8	7	6	8	8	8	7	66.7
1.2 Process Variables									
1 Use quality assurance information for continuous performance improvement.	10	9	7.5	6	10	8	8	6	66.7
2 All concerned are involved in vision development.	10	8	7	5.5	10	8	7	6	80.9
3 All concerned contribute to reach the vision.	10	9	7	6	10	8	7	6	66.7
4 Student and stakeholder satisfaction is used for continuous performance improvement.	10	8	7	6	9	8	7	7	71.4
5 Set strategic plans in order to achieve the aims set.	10	9	8	7	10	9	8	7	66.7
6 Reform organisation using qualified management approaches.	9	8	7	6.5	8	8	7	7	76.2
7 Use qualified systematic performance evaluation approach.	10	9	9	7	10	9	9	7	76.2
8 Focus on participative management.	10	8.5	7	6	10	8	7	6	71.4
9 Encourage faculty members to develop and learn.	10	9	8	6	10	9	8	7	80.9
10 Encourage faculty members to be innovators.	10	8	6	5.25	8	8	7	6	61.9
11 Encourage faculty members to be creative.	10	8	7	6	9	8	7	6	71.4
12 Share knowledge between team members.	9	7.75	6.5	6	8	7	7	6	61.9
13 Use program performance review for continuous improvement.	10	8	7.5	6	8	8	7	6	66.7
14 Student and stakeholder dissatisfaction is promptly solved.	9	8	7	6	8	8	7	6	66.7
15 Encourage communities to develop program's values.	9	7	6	5	8	7	6	6	66.7
1.3 Output Variables									
1 Teaching and learning plans relate to the curriculum.	10	10	8	8	10	9	8	8	66.7
2 Qualified human resource plans are developed.	10	8.5	7	6	8	8	7	7	66.7

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Items	Usability (Round 1)				Usability (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
3 Resources plans for strategic deployment are developed.	10	8	7	6	9	7	7	6	71.4
4 The goals for producing graduates are practical.	10	8.5	7	6	8	8	7	6	71.4
5 The goals for producing graduates keep faith with the stakeholders' expectations.	10	8	7	6	9	8	7	6	71.4
6 The goals for producing graduates emphasize the excellence of the program academic.	10	9	7	6	10	8	7	6	71.4
7 The goals for producing graduates balance the needs of stakeholders.	10	8.75	7	6	10	8	7	6	57.1
8 The teaching and learning plans balance market needs.	10	8	7	6	9	8	7	6	80.9
9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	9	8.75	7	6	8	8	7	6	66.7
10 Program leaders serve as role models through their competencies.	10	9	8	7	10	9	8	8	71.4
11 Program leaders serve as role models through their ethical behaviour.	10	9	8	5.5	10	9	8	7	76.2
12 Teaching and learning plans are relevant to educational business conditions.	10	8	7	6	10	8	7	7	80.9
13 Decrease the ratio of resource usage.	9	8	6	6	9	8	7	6	66.7
14 The number of functional departments is assessed.	9	8	7	7	8	8	7	7	76.2
15 The number of functional departments is accredited.	10	8.75	7	6.25	10	8	7	7	71.4
16 Evidence that leader promptly solves program complaints.	10	8	7	5.5	10	8	7	6	80.9
17 Reporting the proportion of fully deployed action plans / activities provided to service communities.	9	8	7	5	9	8	7	6	71.4
18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	9	8	6	5	9	8	7	5	76.2
19 Obtain an annual increase in the number of applicants.	10	8.5	7	5.5	10	8	7	7	66.7
2 **Learning-centred Education**									
2.1 **Input Variables**									
1 Curriculum philosophy relates to the program's vision.	10	10	9	7	10	9	9	8	71.4
2 Curriculum objectives relate to the curriculum's philosophy.	10	10	9	7.25	10	9	9	8	80.9
3 Curriculum structure meets standard criteria.	10	10	9.5	8	10	10	9	8	71.4
4 Curriculum structure supports curriculum objectives.	10	10	9	8	10	9	9	8	66.7
5 Curriculum objectives relate to public policy.	10	8	8	7	10	8	8	7	80.9
6 Curriculum goals are problem-solving oriented.	9	8.75	7	6.25	10	9	7	7	76.2
7 Curriculum goals balance students' needs.	10	8.75	7.5	7	10	9	8	7	85.7
8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	10	9	8	7	10	9	8	7	80.9
9 Curriculum is appropriately designed to develop students to be excellent academic leaders.	9	9	8	6.25	9	8	8	7	76.2

Items	Usability (Round 1)				Usability (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
10 Curriculum is appropriately designed to develop students' research competencies.	10	9	8	7	10	9	8	7	80.9
11 Curriculum is well-designed for developing students having competencies for profession.	10	9	8	7	10	9	8	7	80.9
12 There are sufficient elective subjects provided to meet students' needs.	10	9	8	6	9	8	8	7	57.1
13 The number of faculty with higher degrees meets the standard criteria.	10	10	9	8	10	9	9	8	66.7
14 Faculty has knowledgeable in student-centred approach for teaching and learning process.	10	9	8	6	10	9	8	7	71.4
15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	10	10	9	7	10	9	9	8	66.7
16 There is an advisory system that is practicable in promoting all dimensions of student development.	9	8	7.5	6	9	8	8	7	71.4
17 There is an acceptable system for evaluating student performance.	10	8	8	7	9	8	8	7	85.7
18 Curriculum goals focus on a various assessment approach.	9	8	7	6.25	10	8	7	7	71.4
19 There is a sufficient amount of appropriate physical resources.	9	8	8	7	9	8	8	7	80.9
20 There is an acceptable system for monitoring student progress.	10	8	7	7	9	8	7	7	71.4
21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	10	8	7	6	10	8	7	7	76.2
2.2 Process Variables									
1 Provide opportunities for all concerns about curriculum content development to be heard.	10	7.5	7	6	10	8	7	7	71.4
2 Faculties teach in areas that are directly related to their field of specialisation.	10	9	8	7	10	9	8	7	80.9
3 Teaching and learning process is research-oriented in its focus.	10	9	7.5	6	10	8	8	7	71.4
4 Encourage good interactions with students.	10	9	8	6	10	9	8	7	80.9
5 Provide student with opportunities to select their subjects based on their interests.	9	8	7	5	9	8	7	6	76.2
6 Use systematically authentic evaluation approaches.	10	9	7.5	7.5	10	8	8	7	71.4
7 Set high expectations for all students.	10	8	7	6	9	8	7	7	71.4
8 Set appropriate criteria and standards for all students.	10	8	7	6	9	8	7	7	76.2
2.3 Output Variables									
1 Use appropriate technologies in the teaching and learning process.	10	9	8	6	9	9	8	7	71.4
2 Use formative assessment and evaluation approaches in teaching and learning process.	10	8.75	8	6	9	8	8	7	66.7
3 Develop a high level of competency in skills of problem-solving amongst the students.	10	9	7.5	6.25	10	9	8	7	76.2
4 Develop a high level of competency amongst the students in the use of information and computer technology.	9	8	7	7	9	8	7	7	85.7

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	Items	Usability (Round 1)				Usability (Round 2)				
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
5	Students report that they are satisfied with the faculties' teaching and learning process.	9	9	8	7	9	9	8	7	85.7
6	The proportions of students' papers, research articles are published in national and international academic journals.	9	8	7	5.75	9	8	7	6	71.4
7	Per cent of students who graduate within expected time.	9	8	7	6	9	8	7	7	71.4
8	Curriculum content is continuously developed. (New item is designed by expert suggestion.)	-	-	-	-	10	8	8	7	-
9	Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	9	8	7	6	9	8	7	7	71.4
10	Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	9	8	7	6	9	8	7	7	76.2
11	Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	9	8	6.5	5.75	9	8	7	6	71.4
3	**Organisational and Personal Learning**									
3.1	**Input Variables**									
1	There is sufficient validated information to indicate whether or not learning is taking place.	10	8	7	6	10	8	7	6	85.7
2	There is sufficient resource, technology availability for organisation and personal learning. (New item is designed by expert suggestion.)	-	-	-	-	10	8	7	6	-
3	There are validated processes designed to track progress on strategic goals.	9	8	7	6	9	8	7	6	76.2
4	The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work. (New item is designed by expert suggestion.)	-	-	-	-	9	8	7	7	-
3.2	**Process Variables**									
1	Promoting faculty members to create ideas for organisation performance improvement.	9	7.5	7	6	9	7	7	6	80.9
2	Using education and training needs information in the design of training and further educating.	9	8	7	6.5	9	8	7	7	80.9
3	Reinforce the learning environment for students.	10	8	8	7	8	8	8	7	76.2
4	Reinforce the learning environment for faculty members performance improvement.	9	8	7	6	9	8	7	6	80.9
5	Reinforce the learning environment for stakeholders.	9	8	6	5	9	8	6	5	71.4
6	Provide opportunities to faculty members for continuous performance improvement.	9	8	7	6	9	8	7	6	66.7
3.3	**Output Variables**									
1	Evidence that faculty use teaching and learning assessment to improve their competencies.	9	8	7	5.5	9	8	7	6	71.4
2	Evidence that leaders use teaching and learning assessment to improve the program's performance results.	9	8	6.5	6	9	8	7	6	71.4

Items	Usability (Round 1)				Usability (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
3 Faculty members improves their performance as a result of their working experiences.	9	8	7	6	8	8	7	6	71.4
4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	9	8	6.5	4.25	9	8	7	6	71.4
5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	8	7	7	6	8	8	7	7	71.4
6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	9	7	7	5.5	8	7	7	6	71.4
7 The nature and type, and the amount of researches in teaching and learning development are undertaken.	8	7	6.5	5.25	8	7	7	6	76.2
8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	8	7	6	5.25	8	7	6	6	66.7
9 The proportion of innovation finding that affected a major change in the program.	8	7	6	5	8	7	6	5	76.2
10 The proportion of research finding that affected a major change in the program.	8	7	6	6	8	7	6	6	85.7
11 Evidence that faculty use teaching and learning assessment to improve students' performance.	9	8	7	6	9	8	7	7	71.4
12 Evidence of there is strong alumni support.	8	7	5	4.25	8	7	6	5	76.2
13 Evidence of there is strong stakeholder support.	9	6.75	5.5	4.25	8	7	6	5	76.2
14 Evidence that learning driven by opportunities to effect significant and meaningful change.	9	7	6	5	9	7	6	6	71.4
4. Valuing Faculty, Staff, and Partners									
4.1 Input Variables									
1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	10	8	8	6	10	8	8	7	71.4
2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	10	8	8	6.25	10	8	8	7	76.2
3 There is a validated faculty members performance evaluation approach.	10	8	7	6	9	8	7	6	76.2
4 There is adequate funding for supporting the research.	10	8	7	5	9	8	7	6	66.7
5 There is adequate funding for supporting the innovation project.	10	8	6	5	9	7	6	6	71.4
6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	9	7.5	6	5	9	7	6	5	80.9
4.2 Process Variables									
1 Use faculty members performance evaluation as measures of their performance.	9	8	7.5	6	9	8	8	7	80.9
2 Implement human resources plan.	9	8	6	5.5	9	7	6	6	80.9
3 Use decentralisation and empowerment to assist in the overcoming of problems.	9	8	7	5	8	8	7	6	66.7

Items	Usability (Round 1)				Usability (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
4 Use needs assessment to create a learning culture.	9	7	6.5	6	9	7	6	6	76.2
5 Use faculty members satisfactions to continuous improve their performance.	9	8	6	5.25	9	7	6	6	71.4
6 Promptly solve faculty members dissatisfaction.	9	7	5.5	5	8	7	6	5	71.4
7 Work to identify high-potential individuals to fill key positions in the future.	10	8	7	5	10	8	7	6	76.2
4.3 Output Variables									
1 Research innovation supported by internal grants.	10	9	8	5.75	10	8	8	7	52.4
2 Research innovation supported by external grants.	10	8	7	6	10	8	7	7	76.2
3 Strategic plans are developed by all concerned.	10	8.75	6.5	5	10	8	7	5	76.2
4 Evidence of responding to improve students' educational needs in a timely manner.	9	8	6	5.25	8	7	6	6	80.9
5 Evidence of responding to program's process improves in a timely manner.	8	7	6	5	8	7	6	6	71.4
6 Evidence of faculty response to improve students' learning performance in a timely manner.	9	7	6	5	8	7	6	6	71.4
7 Evidence of responding to program's improving performance in a timely manner.	9	7.75 -	7	6	8	7	7	6	76.2
8 Evidence that program leaders motivate faculty members developing and utilising their full potential.	10	7.75	5.5	5	9	7	6	5	66.7
9 Evidence that program leaders make efforts to conduct performance excellences.	9	8	6	5	9	8	6	5	71.4
10 There is faculty members development activities organised for innovation creating.	10	7.75	6	5	10	7	6	6	66.7
11 There is faculty members development activities organised for research embarking.	10	8	7	6.25	10	8	7	7	71.4
12 The number of books produces by faculty.	10	8	7	6	10	8	7	6	80.9
13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	10	8	6.5	5	10	8	7	5	76.2
14 The number of faculty members is other organisation consultant.	10	8	7	6.25	10	8	7	7	80.9
15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	10	8	7	6	10	8	7	6	71.4
16 The proportion of faculty members is invited to be self-studied / thesis advisors.	10	8	7	6	10	8	7	7	66.7
17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	10	8	7.5	6.75	10	8	7	7	76.2
18 The proportion of faculty members is co-researchers with external organisations.	10	8	7	5.5	10	8	7	7	76.2
19 The proportion of faculty members formally presents academic output in the area of educational administration.	9	8	7	7	9	8	7	7	76.2
20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	9	8	7	6	9	8	7	6	85.7

Items	Usability (Round 1)				Usability (Round 2)				
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	F%
21 The proportion of the joint ventures with stakeholders and potential contributors is success.	9	8	6	5	9	8	7	7	76.2

TABLE A3   DELPHI SURVEY 3 FINDINGS FOR THE COMPOSITE INDICATORS AND THEIR VARIABLES

Each item is ordered by the utility aspect of the Round 3 median.

'Sum' = aggregated scores.

Composite Indicators	Utility						Usability					
	Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q1	Mean
1 Visionary Leadership	91	10	9.25	9	9	9.10	80	10	9.25	7.5	7	8.00
2 Learning-centred Education	89	10	9.25	9	8	8.90	79	10	8.25	8	7	7.90
3 Organisational and Personal Learning	87	10	9.25	8.5	8	8.70	71	10	9	7	7	7.89
4 Valuing Faculty, Staff, and Partners	85	10	9	8	8	8.50	76	10	8.25	7	7	7.60

Items	Utility						Usability					
	Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
1. VISIONARY LEADERSHIP												
1.1 Input Variables												
1 There is sufficient appropriate students' needs information available.	172	10	9	9	9	9.05	155	10	8	8	8	8.16
2 There is sufficient program resources information available.	174	10	9	9	9	9.16	157	10	8	8	8	8.26
3 There is sufficient market needs information available.	155	10	8	8	8	8.16	140	10	8	7	7	7.37
4 There is sufficient stakeholders' needs information available.	156	10	9	8	8	8.21	136	10	7	7	7	7.16
5 There is sufficient educational market research information available.	155	10	8	8	8	8.16	139	10	7	7	7	7.32
6 There is sufficient faculty members competency data available.	157	10	8	8	8	8.26	144	10	8	7	7	7.58
7 There is faculty members competency expectation information available.	155	9	8	8	8	8.16	140	9	8	7	7	7.37
8 There is sufficient servicing community information available.	153	9	8	8	8	8.05	141	9	8	7	7	7.42
1.2 Process Variables												
1 Use quality assurance information for continuous performance improvement.	184	10	10	10	9	9.68	156	10	8	8	8	8.21
2 All concerned are involved in vision development.	170	10	9	9	9	8.95	145	10	8	7	7	7.63
3 All concerned contribute to reach the vision.	168	10	9	9	9	8.84	140	10	8	7	7	7.37

Items	Utility						Usability					
	Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
4 Student and stakeholder satisfaction is used for continuous performance improvement.	173	10	9	9	9	9.11	141	10	8	7	7	7.42
5 Set strategic plans in order to achieve the aims set.	171	10	9	9	9	9.00	154	10	9	8	8	8.11
6 Reform organisation using qualified management approaches.	171	10	9	9	9	9.00	143	10	8	7	7	7.53
7 Use qualified systematic performance evaluation approach.	173	10	9	9	9	9.11	163	10	9	9	8	8.58
8 Focus on participative management.	170	10	9	9	9	8.95	144	10	8	7	7	7.58
9 Encourage faculty members to develop and learn.	171	10	9	9	9	9.00	153	10	8	8	8	8.05
10 Encourage faculty members to be innovators.	166	10	9	9	8	8.74	136	10	7	7	7	7.16
11 Encourage faculty members to be creative.	169	10	9	9	9	8.89	138	10	7	7	7	7.26
12 Share knowledge between team members.	167	10	9	9	8	8.79	138	10	8	7	7	7.26
13 Use program performance review for continuous improvement.	170	10	9	9	9	8.95	141	10	8	7	7	7.42
14 Student and stakeholder dissatisfaction is promptly solved.	156	9	9	8	8	8.21	137	9	7	7	7	7.21
15 Encourage communities to develop program's values.	152	9	8	8	8	8.00	128	9	7	7	6	6.74
1.3 Output Variables												
1 Teaching and learning plans relate to the curriculum.	186	10	10	10	10	9.79	160	10	9	8	8	8.42
2 Qualified human resource plans are developed.	170	10	9	9	9	8.95	141	10	8	7	7	7.42
3 Resources plans for strategic deployment are developed.	170	10	9	9	9	8.95	142	10	8	7	7	7.47
4 The goals for producing graduates are practical.	170	10	9	9	9	8.95	142	10	8	7	7	7.47
5 The goals for producing graduates keep faith with the stakeholders' expectations.	170	10	9	9	9	8.95	138	10	7	7	7	7.26
6 The goals for producing graduates emphasize the excellence of the program academic.	171	10	9	9	9	9.00	141	10	8	7	7	7.42
7 The goals for producing graduates balance the needs of stakeholders.	169	10	9	9	9	8.89	140	10	7	7	7	7.37
8 The teaching and learning plans balance market needs.	170	10	9	9	9	8.95	141	10	8	7	7	7.42
9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	169	10	9	9	9	8.89	142	10	8	7	7	7.47

Items	Utility						Usability					
	Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
10 Program leaders serve as role models through their competencies.	172	10	9	9	9	9.05	154	10	8	8	8	8.11
11 Program leaders serve as role models through their ethical behaviour.	172	10	9	9	9	9.05	154	10	8	8	8	8.11
12 Teaching and learning plans are relevant to educational business conditions.	160	10	9	8	8	8.42	140	10	8	7	7	7.37
13 Decrease the ratio of resource usage.	153	9	8	8	8	8.05	132	9	7	7	7	6.95
14 The number of functional departments is assessed.	157	9	9	8	8	8.26	140	9	8	7	7	7.37
15 The number of functional departments is accredited.	156	9	8	8	8	8.21	138	9	7	7	7	7.26
16 Evidence that leader promptly solves program complaints.	153	9	8	8	8	8.05	135	8	7	7	7	7.11
17 Reporting the proportion of fully deployed action plans / activities provided to service communities.	151	9	8	8	8	7.95	136	9	7	7	7	7.16
18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	150	10	8	8	7	7.89	135	9	7	7	7	7.11
19 Obtain an annual increase in the number of applicants.	154	9	8	8	8	8.11	135	8	7	7	7	7.11
2 Learning-centred Education												
2.1 Input Variables												
1 Curriculum philosophy relates to the program's vision.	186	10	10	10	10	9.79	169	10	9	9	9	8.89
2 Curriculum objectives relate to the curriculum's philosophy.	187	10	10	10	10	9.84	171	10	9	9	9	9.00
3 Curriculum structure meets standard criteria.	187	10	10	10	10	9.84	177	10	10	9	9	9.32
4 Curriculum structure supports curriculum objectives.	177	10	10	9	9	9.32	171	10	9	9	9	9.00
5 Curriculum objectives relate to public policy.	168	10	9	9	9	8.84	156	10	8	8	8	8.21
6 Curriculum goals are problem-solving oriented.	172	10	9	9	9	9.05	145	10	8	7	7	7.63
7 Curriculum goals balance students' needs.	169	10	9	9	9	8.89	152	10	8	8	8	8.00
8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	170	10	9	9	9	8.95	155	10	8	8	8	8.16
9 Curriculum is appropriately designed to develop students to be excellent academic leaders.	171	10	9	9	9	9.00	152	10	8	8	8	8.00

Items	Utility						Usability					
	Sum	Q₄	Q₃	Q₂	Q₁	Mean	Sum	Q₄	Q₃	Q₂	Q₁	Mean
10 Curriculum is appropriately designed to develop students' research competencies.	173	10	9	9	9	9.11	154	10	8	8	8	8.11
11 Curriculum is well-designed for developing students having competencies for profession.	171	10	9	9	9	9.00	154	9	8	8	8	8.11
12 There are sufficient elective subjects provided to meet students' needs.	169	10	9	9	9	8.89	153	10	8	8	8	8.05
13 The number of faculty with higher degrees meets the standard criteria.	173	10	9	9	9	9.11	170	10	9	9	8	8.95
14 Faculty has knowledgeable in student-centred approach for teaching and learning process.	172	10	9	9	9	9.05	155	10	8	8	8	8.16
15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	170	10	9	9	9	8.95	167	10	9	9	8	8.79
16 There is an advisory system that is practicable in promoting all dimensions of student development.	172	10	9	9	9	9.05	152	10	8	8	8	8.00
17 There is an acceptable system for evaluating student performance.	173	10	9	9	9	911	156	9	9	8	8	8.21
18 Curriculum goals focus on a various assessment approach.	161	10	9	8	8	8.47	142	10	8	7	7	7.47
19 There is a sufficient amount of appropriate physical resources.	158	9	9	8	8	8.32	152	9	8	8	8	8.00
20 There is an acceptable system for monitoring student progress.	160	9	9	8	8	8.42	145	9	8	8	7	7.63
21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	159	9	9	8	8	8.37	138	8	8	7	7	7.26
2.2 Process Variables												
1 Provide opportunities for all concerns about curriculum content development to be heard.	171	10	9	9	9	9.00	140	9	8	7	7	7.37
2 Faculties teach in areas that are directly related to their field of specialisation.	172	10	9	9	9	9.05	158	9	9	8	8	8.32
3 Teaching and learning process is research-oriented in its focus.	172	10	9	9	9	9.05	152	10	8	8	8	8.00
4 Encourage good interactions with students.	172	10	9	9	9	9.05	155	9	8	8	8	8.16
5 Provide student with opportunities to select their subjects based on their interests.	168	9	9	9	9	8.84	140	9	8	7	7	7.37

Items	Utility						Usability					
	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean
6 Use systematically authentic evaluation approaches.	169	10	9	9	9	8.89	147	9	8	8	7	7.74
7 Set high expectations for all students.	158	9	9	8	8	8.32	138	9	8	7	7	7.26
8 Set appropriate criteria and standards for all students.	158	9	9	8	8	8.32	138	9	7	7	7	7.26
2.3 Output Variables												
1 Use appropriate technologies in the teaching and learning process.	170	9	9	9	9	8.95	149	9	8	8	7	7.84
2 Use formative assessment and evaluation approaches in teaching and learning process.	170	9	9	9	9	8.95	151	9	8	8	8	7.95
3 Develop a high level of competency in skills of problem-solving amongst the students.	171	10	9	9	9	9.00	149	9	8	8	7	7.84
4 Develop a high level of competency amongst the students in the use of information and computer technology.	171	10	9	9	9	9.00	143	9	8	7	7	7.53
5 Students report that they are satisfied with the faculties' teaching and learning process.	172	10	9	9	9	9.05	155	9	8	8	8	8.16
6 The proportions of students' papers, research articles are published in national and international academic journals.	169	9	9	9	9	8.89	140	9	8	7	7	7.37
7 Per cent of students who graduate within expected time.	169	10	9	9	9	8.89	141	9	8	7	7	7.42
8 Curriculum content is continuously developed.	170	9	9	9	9	8.95	153	10	8	8	8	8.05
9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	168	10	9	8	8	8.42	145	10	8	7	7	7.63
10 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	157	9	9	8	8	8.26	143	9	8	7	7	7.53
11 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	159	9	9	8	8	8.37	142	9	8	7	7	7.47
3. Organisational and Personal Learning												
3.1 Input Variables												

Items	Utility						Usability					
	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean
1 There is sufficient validated information to indicate whether or not learning is taking place.	168	9	9	9	9	8.84	142	9	8	7	7	7.47
2 There is sufficient resource, technology availability for organisation and personal learning.	169	9	9	9	9	8.89	140	9	8	7	7	7.37
3 There are validated processes designed to track progress on strategic goals.	159	9	9	8	8	8.37	138	9	8	7	7	7.26
4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	158	9	9	8	8	8.32	138	9	8	7	7	7.26
3.2 Process Variables												
1 Promoting faculty members to create ideas for organisation performance improvement.	159	10	9	8	8	8.37	137	8	7	7	7	7.21
2 Using education and training needs information in the design of training and further educating.	155	9	8	8	8	8.16	137	8	8	7	7	7.21
3 Reinforce the learning environment for students.	158	9	9	8	8	8.32	148	8	8	8	8	7.79
4 Reinforce the learning environment for faculty members performance improvement.	156	9	8	8	8	8.21	138	8	8	7	7	7.26
5 Reinforce the learning environment for stakeholders.	150	9	8	8	8	7.89	126	8	7	6	6	6.63
6 Provide opportunities to faculty members for continuous performance improvement.	159	9	9	8	8	8.37	138	8	8	7	7	7.26
3.3 Output Variables												
1. Evidence that faculty use teaching and learning assessment to improve their competencies.	167	9	9	9	9	8.79	139	9	8	7	7	7.32
2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	169	9	9	9	9	8.89	137	9	8	7	7	7.21
3 Faculty members improve their performance as a result of their working experiences.	153	9	8	8	8	8.05	134	8	7	7	7	7.05
4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	154	9	8	8	8	8.11	132	9	7	7	6	6.95
5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	153	9	8	8	8	8.05	135	8	7	7	7	7.11

	Items	Utility						Usability					
		Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
6	Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	157	9	9	8	8	8.26	132	8	7	7	7	6.95
7	The nature and type, and the amount of researches in teaching and learning development are undertaken.	152	9	8	8	8	8.00	133	8	7	7	7	7.00
8	The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	153	9	8	8	8	8.05	124	8	7	7	6	6.53
9	The proportion of innovation finding that affected a major change in the program.	150	9	8	8	8	7.89	119	8	7	6	6	6.26
10	The proportion of research finding that affected a major change in the program.	151	9	8	8	8	7.95	118	8	6	6	6	6.21
11	Evidence that faculty use teaching and learning assessment to improve students' performance.	154	9	8	8	8	8.11	135	8	8	7	7	7.11
12	Evidence of there is strong alumni support.	149	9	8	8	8	7.84	118	8	7	6	6	6.21
13	Evidence of there is strong stakeholder support.	146	8	8	8	7	7.68	117	8	7	6	6	6.16
14	Evidence that learning driven by opportunities to effect significant and meaningful change.	139	8	8	7	7	7.32	115	8	6	6	6	6.05
4	**Valuing Faculty, Staff, and Partners**												
4.1	**Input Variables**												
1	There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	168	10	9	9	9	8.84	150	9	8	8	8	7.89
2	There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	169	10	9	9	9	8.89	149	8	8	8	8	7.84
3	There is a validated faculty members performance evaluation approach.	170	10	9	9	9	8.95	140	9	8	7	7	7.37

Items	Utility						Usability					
	Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
4 There is adequate funding for supporting the research.	171	10	9	9	9	9.00	139	9	8	7	7	7.32
5 There is adequate funding for supporting the innovation project.	159	9	9	8	8	8.37	130	9	8	6	6	6.84
6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	156	9	8	8	8	8.21	124	9	7	6	6	6.53
4.2 Process Variables												
1. Use faculty members performance evaluation as measures of their performance.	172	10	9	9	9	9.05	152	9	8	8	8	8.00
2 Implement human resources plan.	159	10	9	8	8	8.37	124	9	7	6	6	6.53
3. Use decentralization and empowerment to assist in the overcoming of problems.	157	9	9	8	8	8.26	131	9	7	7	6	6.89
4 Use needs assessment to create a learning culture.	155	9	9	8	8	8.16	123	9	7	6	6	6.47
5 Use faculty members satisfactions to continuous improve their performance.	155	9	9	8	8	8.16	121	8	7	6	6	6.37
6 Promptly solve faculty members dissatisfaction.	153	9	8	8	8	8.05	116	8	6	6	6	6.11
7 Work to identify high-potential individuals to fill key positions in the future.	155	9	8	8	8	8.16	131	8	7	7	7	6.89
4.3 Output Variables												
1 Research innovation supported by internal grants.	168	9	9	9	9	8.84	148	9	8	8	7	7.79
2 Research innovation supported by external grants.	167	9	9	9	9	8.79	136	9	8	7	7	7.16
3 Strategic plans are developed by all concerned.	163	10	9	9	8	8.58	136	9	7	7	7	7.16
4 Evidence of responding to improve students' educational needs in a timely manner.	157	9	9	8	8	8.26	122	9	7	6	6	6.42
5 Evidence of responding to program's process improves in a timely manner.	154	9	8	8	8	8.11	121	8	7	6	6	6.37
6 Evidence of faculty response to improve students' learning performance in a timely manner.	156	9	8	8	8	8.21	121	8	7	6	6	6.37
7 Evidence of responding to program's improving performance in a timely manner.	156	9	8	8	8	8.21	130	8	7	7	6	6.84

Items	Utility						Usability					
	Sum	Q₄	Q₃	Q₂	Q₁	Mean	Sum	Q₄	Q₃	Q₂	Q₁	Mean
8 Evidence that program leaders motivate faculty members developing and utilising their full potential.	159	9	9	8	8	8.37	121	8	7	6	6	6.37
9 Evidence that program leaders make efforts to conduct performance excellences.	157	9	9	8	8	8.26	123	8	7	6	6	6.47
10 There is faculty members development activities organized for innovation creating.	155	9	8	8	8	8.16	123	8	7	6	6	6.47
11 There is faculty members development activities organized for research embarking.	158	9	8	8	8	8.32	130	8	7	7	6	6.84
12 The number of books produces by faculty.	154	9	8	8	8	8.11	132	8	7	7	7	6.95
13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	158	9	9	8	8	8.32	125	8	7	7	6	6.58
14 The number of faculty members is other organization consultant.	155	9	8	8	8	8.16	134	9	7	7	7	7.05
15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	153	9	8	8	8	8.05	134	8	7	7	7	7.05
16 The proportion of faculty members is invited to be self-studied / thesis advisors.	155	9	8	8	8	8.16	135	8	7	7	7	7.11
17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	154	9	8	8	8	8.11	134	8	8	7	7	7.05
18 The proportion of faculty members is co-researchers with external organisations.	153	9	8	8	8	8.05	126	8	7	7	6	6.63
19 The proportion of faculty members formally presents academic output in the area of educational administration.	152	9	8	8	8	8.00	128	8	7	7	7	6.74
20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	156	9	8	8	8	8.21	131	8	7	7	7	6.89
21 The proportion of the joint ventures with stakeholders and potential contributors is success.	152	9	8	8	8	8.00	123	8	7	7	6	6.47

TABLE A4   DELPHI SURVEY 3 FINDINGS FOR THE COMPOSITE INDICATORS AND THEIR VARIABLES: UTILITY ASPECT

Each item is ordered by the mean score.

Rank	Composite Indicators	Utility					
		Sum	Q_4	Q_3	Q_2 Median	Q_1	Mean
1	1 Visionary Leadership	91	10	9.25	9	9	9.10
2	2 Learning-centred Education	89	10	9.25	9	8	8.90
3	3 Organisational and Personal Learning	87	10	9.25	8.5	8	8.70
4	4 Valuing Faculty, Staff, and Partners	85	10	9	8	8	8.50

Items with means of 8.20 or above are shaded Grey (15%).

Rank	Items	Utility					
		Sum	Q_4	Q_3	Q_2 Median	Q_1	Mean
	1. VISIONARY LEADERSHIP						
	1.1 Input Variables						
1	2 There is sufficient program resources information available.	174	10	9	9	9	9.16
2	1 There is sufficient appropriate students' needs information available.	172	10	9	9	9	9.05
3	6 There is sufficient faculty members competency data available.	157	10	8	8	8	8.26
4	4 There is sufficient stakeholders' needs information available.	156	10	9	8	8	8.21
5	3 There is sufficient market needs information available.	155	10	8	8	8	8.16
6	5 There is sufficient educational market research information available.	155	10	8	8	8	8.16
7	7 There is faculty members competency expectation information available.	155	9	8	8	8	8.16
8	8 There is sufficient servicing community information available.	153	9	8	8	8	8.05
	1.2 Process Variables						
1	1 Use quality assurance information for continuous performance improvement.	184	10	10	10	9	9.68
2	4 Student and stakeholder satisfaction is used for continuous performance improvement.	173	10	9	9	9	9.11
3	7 Use qualified systematic performance evaluation approach.	173	10	9	9	9	9.11
4	5 Set strategic plans in order to achieve the aims set.	171	10	9	9	9	9.00
5	6 Reform organisation using qualified management approaches.	171	10	9	9	9	9.00
6	9 Encourage faculty members to develop and learn.	171	10	9	9	9	9.00

Rank	Items	Utility					
		Sum	Q$_4$	Q$_3$	Q$_2$ Median	Q$_1$	Mean
7	2 All concerned are involved in vision development.	170	10	9	9	9	8.95
8	8 Focus on participative management.	170	10	9	9	9	8.95
9	13 Use program performance review for continuous improvement.	170	10	9	9	9	8.95
10	11 Encourage faculty members to be creative.	169	10	9	9	9	8.89
11	3 All concerned contribute to reach the vision.	168	10	9	9	9	8.84
12	12 Share knowledge between team members.	167	10	9	9	8	8.79
13	10 Encourage faculty members to be innovators.	166	10	9	9	8	8.74
14	14 Student and stakeholder dissatisfaction is promptly solved.	156	9	9	8	8	8.21
15	15 Encourage communities to develop program's values.	152	9	8	8	8	8.00
	1.3 Output Variables						
1	1 Teaching and learning plans relate to the curriculum.	186	10	10	10	10	9.79
2	10 Program leaders serve as role models through their competencies.	172	10	9	9	9	9.05
3	11 Program leaders serve as role models through their ethical behaviour.	172	10	9	9	9	9.05
4	6 The goals for producing graduates emphasize the excellence of the program academic.	171	10	9	9	9	9.00
5	2 Qualified human resource plans are developed.	170	10	9	9	9	8.95
6	3 Resources plans for strategic deployment are developed.	170	10	9	9	9	8.95
7	4 The goals for producing graduates are practical.	170	10	9	9	9	8.95
8	5 The goals for producing graduates keep faith with the stakeholders' expectations.	170	10	9	9	9	8.95
9	8 The teaching and learning plans balance market needs.	170	10	9	9	9	8.95
10	7 The goals for producing graduates balance the needs of stakeholders.	169	10	9	9	9	8.89
11	9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	169	10	9	9	9	8.89
12	12 Teaching and learning plans are relevant to educational business conditions.	160	10	9	8	8	8.42
13	14 The number of functional departments is assessed.	157	9	9	8	8	8.26
14	15 The number of functional departments is accredited.	156	9	8	8	8	8.21
15	19 Obtain an annual increase in the number of applicants.	154	9	8	8	8	8.11

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Rank	Items		Utility					
			Sum	Q₄	Q₃	Q₂	Q₁	Mean
						Median		
16	13	Decrease the ratio of resource usage.	153	9	8	8	8	8.05
17	16	Evidence that leader promptly solves program complaints.	153	9	8	8	8	8.05
18	17	Reporting the proportion of fully deployed action plans / activities provided to service communities.	151	9	8	8	8	7.95
19	18	Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	150	10	8	8	7	7.89
	2	**Learning-centred Education**						
	2.1	**Input Variables**						
1	2	Curriculum objectives relate to the curriculum's philosophy.	187	10	10	10	10	9.84
2	3	Curriculum structure meets standard criteria.	187	10	10	10	10	9.84
3	1	Curriculum philosophy relates to the program's vision.	186	10	10	10	10	9.79
4	4	Curriculum structure supports curriculum objectives.	177	10	10	9	9	9.32
5	10	Curriculum is appropriately designed to develop students' research competencies.	173	10	9	9	9	9.11
6	13	The number of faculty with higher degrees meets the standard criteria.	173	10	9	9	9	9.11
7	17	There is an acceptable system for evaluating student performance.	173	10	9	9	9	9.11
8	6	Curriculum goals are problem-solving oriented.	172	10	9	9	9	9.05
9	14	Faculty has knowledgeable in student-centred approach for teaching and learning process.	172	10	9	9	9	9.05
10	16	There is an advisory system that is practicable in promoting all dimensions of student development.	172	10	9	9	9	9.05
11	9	Curriculum is appropriately designed to develop students to be excellent academic leaders.	171	10	9	9	9	9.00
12	11	Curriculum is well-designed for developing students having competencies for profession.	171	10	9	9	9	9.00
13	8	Curriculum is well-designed for assisting students to become well-rounded administrators in education.	170	10	9	9	9	8.95
14	15	There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	170	10	9	9	9	8.95
15	7	Curriculum goals balance students' needs.	169	10	9	9	9	8.89
16	12	There are sufficient elective subjects provided to meet students' needs.	169	10	9	9	9	8.89
17	5	Curriculum objectives relate to public policy.	168	10	9	9	9	8.84

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Rank	Items		Utility					
			Sum	Q_4	Q_3	Q_2 / Median	Q_1	Mean
18	18	Curriculum goals focus on a various assessment approach.	161	10	9	8	8	8.47
19	20	There is an acceptable system for monitoring student progress.	160	9	9	8	8	8.42
20	21	There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	159	9	9	8	8	8.37
21	19	There is a sufficient amount of appropriate physical resources.	158	9	9	8	8	8.32
	2.2	**Process Variables**						
1	2	Faculties teach in areas that are directly related to their field of specialisation.	172	10	9	9	9	9.05
2	3	Teaching and learning process is research-oriented in its focus.	172	10	9	9	9	9.05
3	4	Encourage good interactions with students.	172	10	9	9	9	9.05
4	1	Provide opportunities for all concerns about curriculum content development to be heard.	171	10	9	9	9	9.00
5	6	Use systematically authentic evaluation approaches.	169	10	9	9	9	8.89
6	5	Provide student with opportunities to select their subjects based on their interests.	168	9	9	9	9	8.84
7	7	Set high expectations for all students.	158	9	9	8	8	8.32
8	8	Set appropriate criteria and standards for all students.	158	9	9	8	8	8.32
	2.3	**Output Variables**						
1	5	Students report that they are satisfied with the faculties' teaching and learning process.	172	10	9	9	9	9.05
2	3	Develop a high level of competency in skills of problem-solving amongst the students.	171	10	9	9	9	9.00
3	4	Develop a high level of competency amongst the students in the use of information and computer technology.	171	10	9	9	9	9.00
4	1	Use appropriate technologies in the teaching and learning process.	170	9	9	9	9	8.95
5	2	Use formative assessment and evaluation approaches in teaching and learning process.	170	9	9	9	9	8.95
6	8	Curriculum content is continuously developed.	170	9	9	9	9	8.95
7	6	The proportions of students' papers, research articles are published in national and international academic journals.	169	9	9	9	9	8.89
8	7	Per cent of students who graduate within expected time.	169	10	9	9	9	8.89

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Rank	Items	Utility					
		Sum	Q_4	Q_3	Q_2 / Median	Q_1	Mean
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	168	10	9	8	8	8.42
10	11 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	159	9	9	8	8	8.37
11	10 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	157	9	9	8	8	8.26
	3. Organisational and Personal Learning						
	3.1 Input Variables						
1	2 There is sufficient resource, technology availability for organisation and personal learning.	169	9	9	9	9	8.89
2	1 There is sufficient validated information to indicate whether or not learning is taking place.	168	9	9	9	9	8.84
3	3 There are validated processes designed to track progress on strategic goals.	159	9	9	8	8	8.37
4	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	158	9	9	8	8	8.32
	3.2 Process Variables						
1	1 Promoting faculty members to create ideas for organisation performance improvement.	159	10	9	8	8	8.37
2	6 Provide opportunities to faculty members for continuous performance improvement.	159	9	9	8	8	8.37
3	3 Reinforce the learning environment for students.	158	9	9	8	8	8.32
4	4 Reinforce the learning environment for faculty members performance improvement.	156	9	8	8	8	8.21
5	2 Using education and training needs information in the design of training and further educating.	155	9	8	8	8	8.16
6	5 Reinforce the learning environment for stakeholders.	150	9	8	8	8	7.89
	3.3 Output Variables						
1	2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	169	9	9	9	9	8.89
2	1 Evidence that faculty use teaching and learning assessment to improve their competencies.	167	9	9	9	9	8.79

Rank	Items	Utility					
		Sum	Q_4	Q_3	Q_2 Median	Q_1	Mean
3	6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	157	9	9	8	8	8.26
4	4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	154	9	8	8	8	8.11
5	11 Evidence that faculty use teaching and learning assessment to improve students' performance.	154	9	8	8	8	8.11
6	3 Faculty members improve their performance as a result of their working experiences.	153	9	8	8	8	8.05
7	5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	153	9	8	8	8	8.05
8	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	153	9	8	8	8	8.05
9	7 The nature and type, and the amount of researches in teaching and learning development are undertaken.	152	9	8	8	8	8.00
10	10 The proportion of research finding that affected a major change in the program.	151	9	8	8	8	7.95
11	9 The proportion of innovation finding that affected a major change in the program.	150	9	8	8	8	7.89
12	12 Evidence of there is strong alumni support.	149	9	8	8	8	7.84
13	13 Evidence of there is strong stakeholder support.	146	8	8	8	7	7.68
14	14 Evidence that learning driven by opportunities to effect significant and meaningful change.	139	8	8	7	7	7.32
	4 Valuing Faculty, Staff, and Partners						
	4.1 Input Variables						
1	4 There is adequate funding for supporting the research.	171	10	9	9	9	9.00
2	3 There is a validated faculty members performance evaluation approach.	170	10	9	9	9	8.95
3	2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	169	10	9	9	9	8.89

Rank	Items	Utility					
		Sum	Q4	Q3	Q2 Median	Q1	Mean
4	1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	168	10	9	9	9	8.84
5	5 There is adequate funding for supporting the innovation project.	159	9	9	8	8	8.37
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	156	9	8	8	8	8.21
	4.2 Process Variables						
1	1 Use faculty members performance evaluation as measures of their performance.	172	10	9	9	9	9.05
2	2 Implement human resources plan.	159	10	9	8	8	8.37
3	3 Use decentralisation and empowerment to assist in the overcoming of problems.	157	9	9	8	8	8.26
4	4 Use needs assessment to create a learning culture.	155	9	9	8	8	8.16
5	5 Use faculty members satisfactions to continuous improve their performance.	155	9	9	8	8	8.16
6	7 Work to identify high-potential individuals to fill key positions in the future.	155	9	8	8	8	8.16
7	6 Promptly solve faculty members dissatisfaction.	153	9	8	8	8	8.05
	4.3 Output Variables						
1	1 Research innovation supported by internal grants.	168	9	9	9	9	8.84
2	2 Research innovation supported by external grants.	167	9	9	9	9	8.79
3	3 Strategic plans are developed by all concerned.	163	10	9	9	8	8.58
4	8 Evidence that program leaders motivate faculty members developing and utilising their full potential.	159	9	9	8	8	8.37
5	11 There is faculty members development activities organised for research embarking.	158	9	8	8	8	8.32
6	13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	158	9	9	8	8	8.32
7	4 Evidence of responding to improve students' educational needs in a timely manner.	157	9	9	8	8	8.26
8	9 Evidence that program leaders make efforts to conduct performance excellences.	157	9	9	8	8	8.26

Rank	Items	Utility					
		Sum	Q4	Q3	Q2 Median	Q1	Mean
9	6 Evidence of faculty response to improve students' learning performance in a timely manner.	156	9	8	8	8	8.21
10	7 Evidence of responding to program's improving performance in a timely manner.	156	9	8	8	8	8.21
11	20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	156	9	8	8	8	8.21
12	10 There is faculty members development activities organised for innovation creating.	155	9	8	8	8	8.16
13	14 The number of faculty members is other organisation consultant.	155	9	8	8	8	8.16
14	16 The proportion of faculty members is invited to be self-studied / thesis advisors.	155	9	8	8	8	8.16
15	5 Evidence of responding to program's process improves in a timely manner.	154	9	8	8	8	8.11
16	12 The number of books produces by faculty.	154	9	8	8	8	8.11
17	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	154	9	8	8	8	8.11
18	15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	153	9	8	8	8	8.05
19	18 The proportion of faculty members is co-researchers with external organisations.	153	9	8	8	8	8.05
20	19 The proportion of faculty members formally presents academic output in the area of educational administration.	152	9	8	8	8	8.00
21	21 The proportion of the joint ventures with stakeholders and potential contributors is success.	152	9	8	8	8	8.00

**TABLE A5   DELPHI SURVEY 3 FINDINGS FOR THE COMPOSITE
INDICATORS AND THEIR VARIABLES: USABILITY ASPECT**

Each item is ordered by the mean scores.

Rank	Composite Indicators	Usability					
		Sum	Q₄	Q₃	Q₂ Median	Q1	Mean
1	**1 Visionary Leadership**	80	10	9.25	7.5	7	8.00
2	**2 Learning-centred Education**	79	10	8.25	8	7	7.90
3	**3 Organisational and Personal Learning**	71	10	9	7	7	7.89
4	**4 Valuing Faculty, Staff, and Partners**	76	10	8.25	7	7	7.60

Items with means of 8.20 or above are shaded Grey (15%).

Rank	Items	Usability					
		Sum	Q₄	Q₃	Q₂ Median	Q₁	Mean
	1 VISIONARY LEADERSHIP						
	1.1 Input Variables						
1	2 There is sufficient program resources information available.	157	10	8	8	8	8.26
2	1 There is sufficient appropriate students' needs information available.	155	10	8	8	8	8.16
3	6 There is sufficient faculty members competency data available.	144	10	8	7	7	7.58
4	8 There is sufficient servicing community information available.	141	9	8	7	7	7.42
5	3 There is sufficient market needs information available.	140	10	8	7	7	7.37
6	7 There is faculty members competency expectation information available.	140	9	8	7	7	7.37
7	5 There is sufficient educational market research information available.	139	10	7	7	7	7.32
8	4 There is sufficient stakeholders' needs information available.	136	10	7	7	7	7.16
	1.2 Process Variables						
1	7 Use qualified systematic performance evaluation approach.	163	10	9	9	8	8.58
2	1 Use quality assurance information for continuous performance improvement.	156	10	8	8	8	8.21
3	5 Set strategic plans in order to achieve the aims set.	154	10	9	8	8	8.11
4	9 Encourage faculty members to develop and learn.	153	10	8	8	8	8.05
5	2 All concerned are involved in vision development.	145	10	8	7	7	7.63
6	8 Focus on participative management.	144	10	8	7	7	7.58
7	6 Reform organisation using qualified management approaches.	143	10	8	7	7	7.53
8	4 Student and stakeholder satisfaction is used for continuous performance improvement.	141	10	8	7	7	7.42

Rank	Items	Usability					
		Sum	Q_4	Q_3	Q_2 Median	Q_1	Mean
9	13 Use program performance review for continuous improvement.	141	10	8	7	7	7.42
10	3 All concerned contribute to reach the vision.	140	10	8	7	7	7.37
11	11 Encourage faculty members to be creative.	138	10	7	7	7	7.26
12	12 Share knowledge between team members.	138	10	8	7	7	7.26
13	14 Student and stakeholder dissatisfaction is promptly solved.	137	9	7	7	7	7.21
14	10 Encourage faculty members to be innovators.	136	10	7	7	7	7.16
15	15 Encourage communities to develop program's values.	128	9	7	7	6	6.74
	1.3 Output Variables						
1	1 Teaching and learning plans relate to the curriculum.	160	10	9	8	8	8.42
2	10 Program leaders serve as role models through their competencies.	154	10	8	8	8	8.11
3	11 Program leaders serve as role models through their ethical behaviour.	154	10	8	8	8	8.11
4	3 Resources plans for strategic deployment are developed.	142	10	8	7	7	7.47
5	4 The goals for producing graduates are practical.	142	10	8	7	7	7.47
6	9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	142	10	8	7	7	7.47
7	2 Qualified human resource plans are developed.	141	10	8	7	7	7.42
8	6 The goals for producing graduates emphasize the excellence of the program academic.	141	10	8	7	7	7.42
9	8 The teaching and learning plans balance market needs.	141	10	8	7	7	7.42
10	7 The goals for producing graduates balance the needs of stakeholders.	140	10	7	7	7	7.37
11	12 Teaching and learning plans are relevant to educational business conditions.	140	10	8	7	7	7.37
12	14 The number of functional departments is assessed.	140	9	8	7	7	7.37
13	5 The goals for producing graduates keep faith with the stakeholders' expectations.	138	10	7	7	7	7.26
14	15 The number of functional departments is accredited.	138	9	7	7	7	7.26
15	17 Reporting the proportion of fully deployed action plans / activities provided to service communities.	136	9	7	7	7	7.16
16	16 Evidence that leader promptly solves program complaints.	135	8	7	7	7	7.11

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Rank	Items	Usability					
		Sum	Q4	Q3	Q2 Median	Q1	Mean
17	18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	135	9	7	7	7	7.11
18	19 Obtain an annual increase in the number of applicants.	135	8	7	7	7	7.11
19	13 Decrease the ratio of resource usage.	132	9	7	7	7	6.95
	2 Learning-centred Education						
	2.1 Input Variables						
1	3 Curriculum structure meets standard criteria.	177	10	10	9	9	9.32
2	2 Curriculum objectives relate to the curriculum's philosophy.	171	10	9	9	9	9.00
3	4 Curriculum structure supports curriculum objectives.	171	10	9	9	9	9.00
4	13 The number of faculty with higher degrees meets the standard criteria.	170	10	9	9	8	8.95
5	1 Curriculum philosophy relates to the program's vision.	169	10	9	9	9	8.89
6	15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	167	10	9	9	8	8.79
7	5 Curriculum objectives relate to public policy.	156	10	8	8	8	8.21
8	17 There is an acceptable system for evaluating student performance.	156	9	9	8	8	8.21
9	8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	155	10	8	8	8	8.16
10	14 Faculty has knowledgeable in student-centred approach for teaching and learning process.	155	10	8	8	8	8.16
11	10 Curriculum is appropriately designed to develop students' research competencies.	154	10	8	8	8	8.11
12	11 Curriculum is well-designed for developing students having competencies for profession.	154	9	8	8	8	8.11
13	12 There are sufficient elective subjects provided to meet students' needs.	153	10	8	8	8	8.05
14	7 Curriculum goals balance students' needs.	152	10	8	8	8	8.00
15	9 Curriculum is appropriately designed to develop students to be excellent academic leaders.	152	10	8	8	8	8.00
16	16 There is an advisory system that is practicable in promoting all dimensions of student development.	152	10	8	8	8	8.00
17	19 There is a sufficient amount of appropriate physical resources.	152	9	8	8	8	8.00
18	6 Curriculum goals are problem-solving oriented.	145	10	8	7	7	7.63

Rank	Items	Usability					
		Sum	Q_4	Q_3	Q_2 Median	Q_1	Mean
19	20 There is an acceptable system for monitoring student progress.	145	9	8	8	7	7.63
20	18 Curriculum goals focus on a various assessment approach.	142	10	8	7	7	7.47
21	21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	138	8	8	7	7	7.26
	2.2 Process Variables						
1	2 Faculties teach in areas that are directly related to their field of specialisation.	158	9	9	8	8	8.32
2	4 Encourage good interactions with students.	155	9	8	8	8	8.16
3	3 Teaching and learning process is research-oriented in its focus.	152	10	8	8	8	8.00
4	6 Use systematically authentic evaluation approaches.	147	9	8	8	7	7.74
5	1 Provide opportunities for all concerns about curriculum content development to be heard.	140	9	8	7	7	7.37
6	5 Provide student with opportunities to select their subjects based on their interests.	140	9	8	7	7	7.37
7	7 Set high expectations for all students.	138	9	8	7	7	7.26
8	8 Set appropriate criteria and standards for all students.	138	9	7	7	7	7.26
	2.3 Output Variables						
1	5 Students report that they are satisfied with the faculties' teaching and learning process.	155	9	8	8	8	8.16
2	8 Curriculum content is continuously developed.	153	10	8	8	8	8.05
3	2 Use formative assessment and evaluation approaches in teaching and learning process.	151	9	8	8	8	7.95
4	1 Use appropriate technologies in the teaching and learning process.	149	9	8	8	7	7.84
5	3 Develop a high level of competency in skills of problem-solving amongst the students.	149	9	8	8	7	7.84
6	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	145	10	8	7	7	7.63
7	4 Develop a high level of competency amongst the students in the use of information and computer technology.	143	9	8	7	7	7.53
8	10 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	143	9	8	7	7	7.53

Rank	Items	Usability					
		Sum	Q4	Q3	Q2 Median	Q1	Mean
9	11 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	142	9	8	7	7	7.47
10	7 Per cent of students who graduate within expected time.	141	9	8	7	7	7.42
11	6 The proportions of students' papers, research articles are published in national and international academic journals.	140	9	8	7	7	7.37
	3 Organisational and Personal Learning						
	3.1 Input Variables						
1	1 There is sufficient validated information to indicate whether or not learning is taking place.	142	9	8	7	7	7.47
2	2 There is sufficient resource, technology availability for organisation and personal learning.	140	9	8	7	7	7.37
3	3 There are validated processes designed to track progress on strategic goals.	138	9	8	7	7	7.26
4	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	138	9	8	7	7	7.26
	3.2 Process Variables						
1	3 Reinforce the learning environment for students.	148	8	8	8	8	7.79
2	4 Reinforce the learning environment for faculty members performance improvement.	138	8	8	7	7	7.26
3	6 Provide opportunities to faculty members for continuous performance improvement.	138	8	8	7	7	7.26
4	1 Promoting faculty members to create ideas for organisation performance improvement.	137	8	7	7	7	7.21
5	2 Using education and training needs information in the design of training and further educating.	137	8	8	7	7	7.21
6	5 Reinforce the learning environment for stakeholders.	126	8	7	6	6	6.63
	3.3 Output Variables						
1	1 Evidence that faculty use teaching and learning assessment to improve their competencies.	139	9	8	7	7	7.32
2	2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	137	9	8	7	7	7.21

Rank	Items	Usability					
		Sum	Q4	Q3	Q2 Median	Q1	Mean
3	5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	135	8	7	7	7	7.11
4	11 Evidence that faculty use teaching and learning assessment to improve students' performance.	135	8	8	7	7	7.11
5	3 Faculty members improve their performance as a result of their working experiences.	134	8	7	7	7	7.05
6	7 The nature and type, and the amount of researches in teaching and learning development are undertaken.	133	8	7	7	7	7.00
7	4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	132	9	7	7	6	6.95
8	6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	132	8	7	7	7	6.95
9	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	124	8	7	7	6	6.53
10	9 The proportion of innovation finding that affected a major change in the program.	119	8	7	6	6	6.26
11	10 The proportion of research finding that affected a major change in the program.	118	8	6	6	6	6.21
12	12 Evidence of there is strong alumni support.	118	8	7	6	6	6.21
13	13 Evidence of there is strong stakeholder support.	117	8	7	6	6	6.16
14	14 Evidence that learning driven by opportunities to effect significant and meaningful change.	115	8	6	6	6	6.05
	4 Valuing Faculty, Staff, and Partners						
	4.1 Input Variables						
1	1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	150	9	8	8	8	7.89
2	2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	149	8	8	8	8	7.84

Rank	Items	Usability					
		Sum	Q4	Q3	Q2 Median	Q1	Mean
3	3 There is a validated faculty members performance evaluation approach.	140	9	8	7	7	7.37
4	4 There is adequate funding for supporting the research.	139	9	8	7	7	7.32
5	5 There is adequate funding for supporting the innovation project.	130	9	8	6	6	6.84
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	124	9	7	6	6	6.53
	4.2 Process Variables						
1	1 Use faculty members performance evaluation as measures of their performance.	152	9	8	8	8	8.00
2	3 Use decentralisation and empowerment to assist in the overcoming of problems.	131	9	7	7	6	6.89
3	7 Work to identify high-potential individuals to fill key positions in the future.	131	8	7	7	7	6.89
4	2 Implement human resources plan.	124	9	7	6	6	6.53
5	4 Use needs assessment to create a learning culture.	123	9	7	6	6	6.47
6	5 Use faculty members satisfactions to continuous improve their performance.	121	8	7	6	6	6.37
7	6 Promptly solve faculty members dissatisfaction.	116	8	6	6	6	6.11
	4.3 Output Variables						
1	1 Research innovation supported by internal grants.	148	9	8	8	7	7.79
2	2 Research innovation supported by external grants.	136	9	8	7	7	7.16
3	2 Strategic plans are developed by all concerned.	136	9	7	7	7	7.16
4	16 The proportion of faculty members is invited to be self-studied / thesis advisors.	135	8	7	7	7	7.11
5	14 The number of faculty members is other organisation consultant.	134	9	7	7	7	7.05
6	15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	134	8	7	7	7	7.05
7	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	134	8	8	7	7	7.05
8	12 The number of books produces by faculty.	132	8	7	7	7	6.95
9	20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	131	8	7	7	7	6.89

Rank	Items	Usability					
		Sum	Q$_4$	Q$_3$	Q$_2$ Median	Q$_1$	Mean
10	7 Evidence of responding to program's improving performance in a timely manner.	130	8	7	7	6	6.84
11	11 There is faculty members development activities organised for research embarking.	130	8	7	7	6	6.84
12	19 The proportion of faculty members formally presents academic output in the area of educational administration.	128	8	7	7	7	6.74
13	18 The proportion of faculty members is co-researchers with external organisations.	126	8	7	7	6	6.63
14	13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	125	8	7	7	6	6.58
15	9 Evidence that program leaders make efforts to conduct performance excellences.	123	8	7	6	6	6.47
16	10 There is faculty members development activities organised for innovation creating.	123	8	7	6	6	6.47
17	21 The proportion of the joint ventures with stakeholders and potential contributors is success.	123	8	7	7	6	6.47
18	4 Evidence of responding to improve students' educational needs in a timely manner.	122	9	7	6	6	6.42
19	5 Evidence of responding to program's process improves in a timely manner.	121	8	7	6	6	6.37
20	6 Evidence of faculty response to improve students' learning performance in a timely manner.	121	8	7	6	6	6.37
21	8 Evidence that program leaders motivate faculty members developing and utilising their full potential.	121	8	7	6	6	6.37

TABLE A6   DELPHI SURVEY FINDINDS FOR *BEST* COMPOSITE INDICATORS AND THEIR VARIABLES: THE UTILITY ASPECT

Each item is ordered by the mean score.

Items with means of 8.20 or above are shaded Grey (15%).

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
	1 VISIONARY LEADERSHIP				**25.85**
	1.1 Input Variables				**4.76**
1	2 There is sufficient program resources information available.	174	9	9.16	0.65
2	1 There is sufficient appropriate students' needs information available.	172	9	9.05	0.64
3	6 There is sufficient faculty members competency data available.	157	8	8.26	0.59
4	4 There is sufficient stakeholders' needs information available.	156	8	8.21	0.58
5	3 There is sufficient market needs information available.	155	8	8.16	0.58
6	5 There is sufficient educational market research information available.	155	8	8.16	0.58
7	7 There is faculty members competency expectation information available.	155	8	8.16	0.58
8	8 There is sufficient servicing community information available.	153	8	8.05	0.57
	1.2 Process Variables				**9.44**
1	1 Use quality assurance information for continuous performance improvement.	184	10	9.68	0.69
2	4 Student and stakeholder satisfaction is used for continuous performance improvement.	173	9	9.11	0.65
3	7 Use qualified systematic performance evaluation approach.	173	9	9.11	0.65
4	5 Set strategic plans in order to achieve the aims set.	171	9	9.00	0.64
5	6 Reform organisation using qualified management approaches.	171	9	9.00	0.64
6	9 Encourage faculty members to develop and learn.	171	9	9.00	0.64
7	2 All concerned are involved in vision development.	170	9	8.95	0.63
8	8 Focus on participative management.	170	9	8.95	0.63
9	13 Use program performance review for continuous improvement.	170	9	8.95	0.63
10	11 Encourage faculty members to be creative.	169	9	8.89	0.63
11	3 All concerned contribute to reach the vision.	168	9	8.84	0.63
12	12 Share knowledge between team members.	167	9	8.79	0.62
13	10 Encourage faculty members to be innovators.	166	9	8.74	0.62
14	14 Student and stakeholder dissatisfaction is promptly solved.	156	8	8.21	0.58
15	15 Encourage communities to develop program's values.	152	8	8.00	0.57
	1.3 Output Variables				**11.65**

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
1	1 Teaching and learning plans relate to the curriculum.	186	10	9.79	0.69
2	10 Program leaders serve as role models through their competencies.	172	9	9.05	0.64
3	11 Program leaders serve as role models through their ethical behaviour.	172	9	9.05	0.64
4	6 The goals for producing graduates emphasize the excellence of the program academic.	171	9	9.00	0.64
5	2 Qualified human resource plans are developed.	170	9	8.95	0.63
6	3 Resources plans for strategic deployment are developed.	170	9	8.95	0.63
7	4 The goals for producing graduates are practical.	170	9	8.95	0.63
8	5 The goals for producing graduates keep faith with the stakeholders' expectations.	170	9	8.95	0.63
9	8 The teaching and learning plans balance market needs.	170	9	8.95	0.63
10	7 The goals for producing graduates balance the needs of stakeholders.	169	9	8.89	0.63
11	9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	169	9	8.89	0.63
12	12 Teaching and learning plans are relevant to educational business conditions.	160	8	8.42	0.60
13	14 The number of functional departments is assessed.	157	8	8.26	0.59
14	15 The number of functional departments is accredited.	156	8	8.21	0.58
15	19 Obtain an annual increase in the number of applicants.	154	8	8.11	0.57
16	13 Decrease the ratio of resource usage.	153	8	8.05	0.57
17	16 Evidence that leader promptly solves program complaints.	153	8	8.05	0.57
18	17 Reporting the proportion of fully deployed action plans / activities provided to service communities.	151	8	7.95	0.56
19	18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	150	8	7.89	0.56
	2 Learning-centred Education				**25.28**
	2.1 Input Variables				**13.41**
1	2 Curriculum objectives relate to the curriculum's philosophy.	187	10	9.84	0.70
2	3 Curriculum structure meets standard criteria.	187	10	9.84	0.70
3	1 Curriculum philosophy relates to the program's vision.	186	10	9.79	0.69
4	4 Curriculum structure supports curriculum objectives.	177	9	9.32	0.66
5	10 Curriculum is appropriately designed to develop students' research competencies.	173	9	9.11	0.64
6	13 The number of faculty with higher degrees meets the standard criteria.	173	9	9.11	0.64

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
7	17 There is an acceptable system for evaluating student performance.	173	9	9.11	0.64
8	6 Curriculum goals are problem-solving oriented.	172	9	9.05	0.64
9	14 Faculty has knowledgeable in student-centred approach for teaching and learning process.	172	9	9.05	0.64
10	16 There is an advisory system that is practicable in promoting all dimensions of student development.	172	9	9.05	0.64
11	9 Curriculum is appropriately designed to develop students to be excellent academic leaders.	171	9	9.00	0.64
12	11 Curriculum is well-designed for developing students having competencies for profession.	171	9	9.00	0.64
13	8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	170	9	8.95	0.63
14	15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	170	9	8.95	0.63
15	7 Curriculum goals balance students' needs.	169	9	8.89	0.63
16	12 There are sufficient elective subjects provided to meet students' needs.	169	9	8.89	0.63
17	5 Curriculum objectives relate to public policy.	168	9	8.84	0.63
18	18 Curriculum goals focus on a various assessment approach.	161	8	8.47	0.60
19	20 There is an acceptable system for monitoring student progress.	160	8	8.42	0.60
20	21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	159	8	8.37	0.59
21	19 There is a sufficient amount of appropriate physical resources.	158	8	8.32	0.59
	2.2 Process Variables				**4.99**
1	2 Faculties teach in areas that are directly related to their field of specialisation.	172	9	9.05	0.64
2	3 Teaching and learning process is research-oriented in its focus.	172	9	9.05	0.64
3	4 Encourage good interactions with students.	172	9	9.05	0.64
4	1 Provide opportunities for all concerns about curriculum content development to be heard.	171	9	9.00	0.64
5	6 Use systematically authentic evaluation approaches.	169	9	8.89	0.63
6	5 Provide student with opportunities to select their subjects based on their interests.	168	9	8.84	0.63
7	7 Set high expectations for all students.	158	8	8.32	0.59
8	8 Set appropriate criteria and standards for all students.	158	8	8.32	0.59
	2.3 Output Variables				**6.88**
1	5 Students report that they are satisfied with the faculties' teaching and learning process.	172	9	9.05	0.64

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
2	3 Develop a high level of competency in skills of problem-solving amongst the students.	171	9	9.00	0.64
3	4 Develop a high level of competency amongst the students in the use of information and computer technology.	171	9	9.00	0.64
4	1 Use appropriate technologies in the teaching and learning process.	170	9	8.95	0.63
5	2 Use formative assessment and evaluation approaches in teaching and learning process.	170	9	8.95	0.63
6	8 Curriculum content is continuously developed.	170	9	8.95	0.63
7	6 The proportions of students' papers, research articles are published in national and international academic journals.	169	9	8.89	0.63
8	7 Per cent of students who graduate within expected time.	169	9	8.89	0.63
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	168	8	8.42	0.63
10	11 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	159	8	8.37	0.59
11	10 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	157	8	8.26	0.59
	3 Organisational and Personal Learning				**24.72**
	3.1 Input Variables				**4.32**
1	2 There is sufficient resource, technology availability for organisation and personal learning.	169	9	8.89	1.12
2	1 There is sufficient validated information to indicate whether or not learning is taking place.	168	9	8.84	1.11
3	3 There are validated processes designed to track progress on strategic goals.	159	8	8.37	1.05
4	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	158	8	8.32	1.04
	3.2 Process Variables				**6.20**
1	1 Promoting faculty members to create ideas for organisation performance improvement.	159	8	8.37	1.05
2	6 Provide opportunities to faculty members for continuous performance improvement.	159	8	8.37	1.05
3	3 Reinforce the learning environment for students.	158	8	8.32	1.04
4	4 Reinforce the learning environment for faculty members performance improvement.	156	8	8.21	1.03
5	2 Using education and training needs information in the design of training and further educating.	155	8	8.16	1.02
6	5 Reinforce the learning environment for stakeholders.	150	8	7.89	0.99
	3.3 Output Variable				**14.20**

Rank	Items	Sum	Q$_2$ Median	Mean	Weighted Scores (%)
1	2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	169	9	8.89	1.12
2	1 Evidence that faculty use teaching and learning assessment to improve their competencies.	167	9	8.79	1.10
3	6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	157	8	8.26	1.04
4	4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	154	8	8.11	1.02
5	11 Evidence that faculty use teaching and learning assessment to improve students' performance.	154	8	8.11	1.02
6	3 Faculty members improve their performance as a result of their working experiences.	153	8	8.05	1.01
7	5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	153	8	8.05	1.01
8	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	153	8	8.05	1.01
9	7 The nature and type, and the amount of researches in teaching and learning development are undertaken.	152	8	8.00	1.01
10	10 The proportion of research finding that affected a major change in the program.	151	8	7.95	1.00
11	9 The proportion of innovation finding that affected a major change in the program.	150	8	7.89	0.99
12	12 Evidence of there is strong alumni support.	149	8	7.84	0.99
13	13 Evidence of there is strong stakeholder support.	146	8	7.68	0.97
14	14 Evidence that learning driven by opportunities to effect significant and meaningful change.	139	7	7.32	0.92
	4 Valuing Faculty, Staff, and Partners				**24.15**
	4.1 Input Variables				**4.45**
1	4 There is adequate funding for supporting the research.	171	9	9.00	0.77
2	3 There is a validated faculty members performance evaluation approach.	170	9	8.95	0.76
3	2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	169	9	8.89	0.76
4	1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	168	9	8.84	0.75
5	5 There is adequate funding for supporting the innovation project.	159	8	8.37	0.71
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	156	8	8.21	0.70
	4.2 Process Variables				**4.95**

Rank	Items	Sum	Q$_2$ Median	Mean	Weighted Scores (%)
1	1 Use faculty members performance evaluation as measures of their performance.	172	9	9.05	0.77
2	2 Implement human resources plan.	159	8	8.37	0.71
3	3 Use decentralisation and empowerment to assist in the overcoming of problems.	157	8	8.26	0.70
4	4 Use needs assessment to create a learning culture.	155	8	8.16	0.69
5	5 Use faculty members satisfactions to continuous improve their performance.	155	8	8.16	0.69
6	7 Work to identify high-potential individuals to fill key positions in the future.	155	8	8.16	0.69
7	6 Promptly solve faculty members dissatisfaction.	153	8	8.05	0.69
	4.3 Output Variables				**14.75**
1	1 Research innovation supported by internal grants.	168	9	8.84	0.75
2	2 Research innovation supported by external grants.	167	9	8.79	0.75
3	3 Strategic plans are developed by all concerned.	163	9	8.58	0.73
4	8 Evidence that program leaders motivate faculty members developing and utilising their full potential.	159	8	8.37	0.71
5	11 There is faculty members development activities organised for research embarking.	158	8	8.32	0.71
6	13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	158	8	8.32	0.71
7	4 Evidence of responding to improve students' educational needs in a timely manner.	157	8	8.26	0.70
8	9 Evidence that program leaders make efforts to conduct performance excellences.	157	8	8.26	0.70
9	6 Evidence of faculty response to improve students' learning performance in a timely manner.	156	8	8.21	0.70
10	7 Evidence of responding to program's improving performance in a timely manner.	156	8	8.21	0.70
11	20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	156	8	8.21	0.70
12	10 There is faculty members development activities organised for innovation creating.	155	8	8.16	0.69
13	14 The number of faculty members is other organisation consultant.	155	8	8.16	0.69
14	16 The proportion of faculty members is invited to be self-studied / thesis advisors.	155	8	8.16	0.69
15	5 Evidence of responding to program's process improves in a timely manner.	154	8	8.11	0.69
16	12 The number of books produces by faculty.	154	8	8.11	0.69
17	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	154	8	8.11	0.69
18	15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	153	8	8.05	0.69

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
19	18 The proportion of faculty members is co-researchers with external organisations.	153	8	8.05	0.69
20	19 The proportion of faculty members formally presents academic output in the area of educational administration.	152	8	8.00	0.68
21	21 The proportion of the joint ventures with stakeholders and potential contributors is success.	152	8	8.00	0.68

TABLE A7   DELPHI SURVEY FINDINGS FOR *BEST* COMPOSITE INDICATORS AND THEIR VARIABLES: THE USABILITY ASPECT

Each item is ordered by the mean score.

Items with means of 8.20 or above are shaded Grey (15%).

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores
	1 VISIONARY LEADERSHIP				**26.14**
	1.1 Input Variables				**5.02**
1	2 There is sufficient program resources information available.	157	8	8.26	0.68
2	1 There is sufficient appropriate students' needs information available.	155	8	8.16	0.68
3	6 There is sufficient faculty members competency data available.	144	7	7.58	0.63
4	8 There is sufficient servicing community information available.	141	7	7.42	0.61
5	3 There is sufficient market needs information available.	140	7	7.37	0.61
6	7 There is faculty members competency expectation information available.	140	7	7.37	0.61
7	5 There is sufficient educational market research information available.	139	7	7.32	0.61
8	4 There is sufficient stakeholders' needs information available.	136	7	7.16	0.59
	1.2 Process Variables				**9.41**
1	7 Use qualified systematic performance evaluation approach.	163	9	8.58	0.71
2	1 Use quality assurance information for continuous performance improvement.	156	8	8.21	0.68
3	5 Set strategic plans in order to achieve the aims set.	154	8	8.11	0.67
4	9 Encourage faculty members to develop and learn.	153	8	8.05	0.67
5	2 All concerned are involved in vision development.	145	7	7.63	0.63
6	8 Focus on participative management.	144	7	7.58	0.63
7	6 Reform organisation using qualified management approaches.	143	7	7.53	0.62
8	4 Student and stakeholder satisfaction is used for continuous performance improvement.	141	7	7.42	0.61
9	13 Use program performance review for continuous improvement.	141	7	7.42	0.61
10	3 All concerned contribute to reach the vision.	140	7	7.37	0.61
11	11 Encourage faculty members to be creative.	138	7	7.26	0.60
12	12 Share knowledge between team members.	138	7	7.26	0.60
13	14 Student and stakeholder dissatisfaction is promptly solved.	137	7	7.21	0.60
14	10 Encourage faculty members to be innovators.	136	7	7.16	0.59
15	15 Encourage communities to develop program's values.	128	7	6.74	0.56

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores
	1.3 Output Variables				**11.71**
1	1 Teaching and learning plans relate to the curriculum.	160	8	8.42	0.70
2	10 Program leaders serve as role models through their competencies.	154	8	8.11	0.67
3	11 Program leaders serve as role models through their ethical behaviour.	154	8	8.11	0.67
4	3 Resources plans for strategic deployment are developed.	142	7	7.47	0.62
5	4 The goals for producing graduates are practical.	142	7	7.47	0.62
6	9 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	142	7	7.47	0.62
7	2 Qualified human resource plans are developed.	141	7	7.42	0.61
8	6 The goals for producing graduates emphasize the excellence of the program academic.	141	7	7.42	0.61
9	8 The teaching and learning plans balance market needs.	141	7	7.42	0.61
10	7 The goals for producing graduates balance the needs of stakeholders.	140	7	7.37	0.61
11	12 Teaching and learning plans are relevant to educational business conditions.	140	7	7.37	0.61
12	14 The number of functional departments is assessed.	140	7	7.37	0.61
13	5 The goals for producing graduates keep faith with the stakeholders' expectations.	138	7	7.26	0.60
14	15 The number of functional departments is accredited.	138	7	7.26	0.60
15	17 Reporting the proportion of fully deployed action plans / activities provided to service communities.	136	7	7.16	0.59
16	16 Evidence that leader promptly solves program complaints.	135	7	7.11	0.59
17	18 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	135	7	7.11	0.59
18	19 Obtain an annual increase in the number of applicants.	135	7	7.11	0.59
19	13 Decrease the ratio of resource usage.	132	7	6.95	0.58
	2 Learning-centred Education				**25.82**
	2.1 Input Variables				**13.99**
1	3 Curriculum structure meets standard criteria.	177	9	9.32	0.75
2	2 Curriculum objectives relate to the curriculum's philosophy.	171	9	9.00	0.73
3	4 Curriculum structure supports curriculum objectives.	171	9	9.00	0.73
4	13 The number of faculty with higher degrees meets the standard criteria.	170	9	8.95	0.72

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores
5	1 Curriculum philosophy relates to the program's vision.	169	9	8.89	0.72
6	15 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	167	9	8.79	0.71
7	5 Curriculum objectives relate to public policy.	156	8	8.21	0.66
8	17 There is an acceptable system for evaluating student performance.	156	8	8.21	0.66
9	8 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	155	8	8.16	0.66
10	14 Faculty has knowledgeable in student-centred approach for teaching and learning process.	155	8	8.16	0.66
11	10 Curriculum is appropriately designed to develop students' research competencies.	154	8	8.11	0.66
12	11 Curriculum is well-designed for developing students having competencies for profession.	154	8	8.11	0.66
13	12 There are sufficient elective subjects provided to meet students' needs.	153	8	8.05	0.65
14	7 Curriculum goals balance students' needs.	152	8	8.00	0.65
15	9 Curriculum is appropriately designed to develop students to be excellent academic leaders.	152	8	8.00	0.65
16	16 There is an advisory system that is practicable in promoting all dimensions of student development.	152	8	8.00	0.65
17	19 There is a sufficient amount of appropriate physical resources.	152	8	8.00	0.65
18	6 Curriculum goals are problem-solving oriented.	145	7	7.63	0.62
19	20 There is an acceptable system for monitoring student progress.	145	8	7.63	0.62
20	18 Curriculum goals focus on a various assessment approach.	142	7	7.47	0.60
21	21 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	138	7	7.26	0.59
	2.2 Process Variables				**4.97**
1	2 Faculties teach in areas that are directly related to their field of specialisation.	158	8	8.32	0.67
2	4 Encourage good interactions with students.	155	8	8.16	0.66
3	3 Teaching and learning process is research-oriented in its focus.	152	8	8.00	0.65
4	6 Use systematically authentic evaluation approaches.	147	8	7.74	0.63
5	1 Provide opportunities for all concerns about curriculum content development to be heard.	140	7	7.37	0.60

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores
6	5 Provide student with opportunities to select their subjects based on their interests.	140	7	7.37	0.60
7	7 Set high expectations for all students.	138	7	7.26	0.59
8	8 Set appropriate criteria and standards for all students.	138	7	7.26	0.59
	2.3 Output Variables				**6.86**
1	5 Students report that they are satisfied with the faculties' teaching and learning process.	155	8	8.16	0.66
2	8 Curriculum content is continuously developed.	153	8	8.05	0.65
3	2 Use formative assessment and evaluation approaches in teaching and learning process.	151	8	7.95	0.64
4	1 Use appropriate technologies in the teaching and learning process.	149	8	7.84	0.63
5	3 Develop a high level of competency in skills of problem-solving amongst the students.	149	8	7.84	0.63
6	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	145	7	7.63	0.62
7	4 Develop a high level of competency amongst the students in the use of information and computer technology.	143	7	7.53	0.61
8	10 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	143	7	7.53	0.61
9	11 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	142	7	7.47	0.60
10	7 Per cent of students who graduate within expected time.	141	7	7.42	0.60
11	6 The proportions of students' papers, research articles are published in national and international academic journals.	140	7	7.37	0.60
	3 Organisational and Personal Learning				**23.20**
	3.1 Input Variables				**5.01**
1	1 There is sufficient validated information to indicate whether or not learning is taking place.	142	7	7.47	1.24
2	2 There is sufficient resource, technology availability for organisation and personal learning.	140	7	7.37	1.24
3	3 There are validated processes designed to track progress on strategic goals.	138	7	7.26	1.24
4	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	138	7	7.26	1.24

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores
	3.2 Process Variables				**7.40**
1	3 Reinforce the learning environment for students.	148	8	7.79	1.33
2	4 Reinforce the learning environment for faculty members performance improvement.	138	7	7.26	1.24
3	6 Provide opportunities to faculty members for continuous performance improvement.	138	7	7.26	1.24
4	1 Promoting faculty members to create ideas for organisation performance improvement.	137	7	7.21	1.23
5	2 Using education and training needs information in the design of training and further educating.	137	7	7.21	1.23
6	5 Reinforce the learning environment for stakeholders.	126	6	6.63	1.13
	3.3 Output Variables				**10.79**
1	1 Evidence that faculty use teaching and learning assessment to improve their competencies.	139	7	7.32	1.25
2	2 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	137	7	7.21	1.23
3	5 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	135	7	7.11	1.21
4	11 Evidence that faculty use teaching and learning assessment to improve students' performance.	135	7	7.11	1.21
5	3 Faculty members improve their performance as a result of their working experiences.	134	7	7.05	1.20
6	7 The nature and type, and the amount of researches in teaching and learning development are undertaken.	133	7	7.00	1.19
7	4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	132	7	6.95	1.19
8	6 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	132	7	6.95	1.19
9	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	124	7	6.53	1.11
	4 Valuing Faculty, Staff, and Partners				**24.84**
	4.1 Input Variables				**5.38**
1	1 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	150	8	7.89	0.97

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores
2	2 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	149	8	7.84	0.96
3	3 There is a validated faculty members performance evaluation approach.	140	7	7.37	0.90
4	4 There is adequate funding for supporting the research.	139	7	7.32	0.90
5	5 There is adequate funding for supporting the innovation project.	130	6	6.84	0.84
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	124	6	6.53	0.80
	4.2 Process Variables				**4.27**
1	1 Use faculty members performance evaluation as measures of their performance.	152	8	8.00	0.98
2	3 Use decentralisation and empowerment to assist in the overcoming of problems.	131	7	6.89	0.85
3	7 Work to identify high-potential individuals to fill key positions in the future.	131	7	6.89	0.85
4	2 Implement human resources plan.	124	6	6.53	0.80
5	4 Use needs assessment to create a learning culture.	123	6	6.47	0.79
	4.3 Output Variables				**15.19**
1	1 Research innovation supported by internal grants.	148	8	7.79	0.96
2	2 Research innovation supported by external grants.	136	7	7.16	0.88
3	3 Strategic plans are developed by all concerned.	136	7	7.16	0.88
4	16 The proportion of faculty members is invited to be self-studied / thesis advisors.	135	7	7.11	0.87
5	14 The number of faculty members is other organisation consultant.	134	7	7.05	0.87
6	15 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	134	7	7.05	0.87
7	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	134	7	7.05	0.87
8	12 The number of books produces by faculty.	132	7	6.95	0.85
9	20 The proportion of the cooperation among senior leaders, faculty, and staff is success.	131	7	6.89	0.85
10	7 Evidence of responding to program's improving performance in a timely manner.	130	7	6.84	0.84
11	11 There is faculty members development activities organised for research embarking.	130	7	6.84	0.84

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores
12	19 The proportion of faculty members formally presents academic output in the area of educational administration.	128	7	6.74	0.83
13	18 The proportion of faculty members is co-researchers with external organisations.	126	7	6.63	0.81
14	13 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	125	7	6.58	0.81
15	9 Evidence that program leaders make efforts to conduct performance excellences.	123	6	6.47	0.79
16	10 There is faculty members development activities organised for innovation creating.	123	6	6.47	0.79
17	21 The proportion of the joint ventures with stakeholders and potential contributors is success.	123	7	6.47	0.79
18	4 Evidence of responding to improve students' educational needs in a timely manner.	122	6	6.42	0.79

**TABLE A8   THE SINGLE-ROUND SURVEY– THE EXPERT PANEL
QUESTIONNAIRE RESULTS:THE UTILITY ASPECT**

Each item is ordered by the mean score.

Items with means of 8.20 or above are shaded Grey (15%).

Rank	Composite Indicators	Sum	Q4	Q3	Q2 Median	Q1	Mean
1	4 Valuing Faculty, Staff, and Partners	267	10	10	9	8	8.90
2	1 Visionary Leadership	263	10	10	9	9	8.77
3	2 Learning-centred Education	262	10	10	9	8	8.73
4	3 Organisational and Personal Learning	260	10	9.25	9	8	8.67

Items with means of 8.20 or above are shaded Grey (15%).

Rank	Items	Sum	Q4	Q3	Q2 Median	Q1	Mean
	1 Visionary Leadership						
	1.1 Input Variables						
1	1 There is sufficient program resources information available.	288	10	9.25	9	8	8.47
2	3 There is sufficient faculty members competency data available.	280	10	9.25	8.5	8	8.24
3	2 There is sufficient appropriate students' needs information available.	277	10	9	8	8	8.15
4	5 There is sufficient market needs information available.	274	10	9	8	8	8.06
5	4 There is sufficient stakeholders' needs information available.	265	10	9	8	7	7.79
6	7 There is faculty members competency expectation information available.	262	10	9	8	7	7.71
7	6 There is sufficient educational market research information available.	261	10	9	8	7	7.68
8	8 There is sufficient servicing community information available.	257	10	9	8	7	7.56
	1.2 Process Variables						
1	3 Use qualified systematic performance evaluation approach.	290	10	10	9	8	8.53
2	4 Set strategic plans in order to the aims set.	287	10	10	9	8	8.44
3	1 Use quality assurance information for continuous performance improvement.	282	10	10	8.5	7.75	8.29
4	2 Student and stakeholder satisfaction is used for continuous performance improvement.	282	10	10	9	7.75	8.29
5	6 Encourage faculty members to develop and learn.	278	10	9.25	9	7.75	8.18

Rank	Items	Sum	Q₄	Q₃	Q₂ Median	Q₁	Mean
6	8 Focus on participative management.	278	10	10	8.5	8	8.18
7	5 Reform organisation using qualified management approaches.	267	10	9	8	7	8.09
8	9 Use program performance review for continuous improvement.	274	10	9	8	7.75	8.06
9	10 Encourage faculty members to be creative.	274	10	9.25	9	7.75	8.06
10	12 Share knowledge between team members.	274	10	10	8.5	7.75	8.06
11	7 All concerned are involved in vision development.	273	10	9	9	8	8.03
12	11 All concerned contribute to reach the vision.	273	10	9	9	8	8.03
13	13 Encourage faculty members to be innovators.	268	10	10	8	7	7.88
14	14 Student and stakeholder dissatisfaction is promptly solved.	259	10	9	8	6.75	7.62
15	15 Encourage communities to develop program's values.	244	10	9	8	6.75	7.18
	1.3 Output Variables						
1	3 Program leaders serve as role models through their ethical behaviour.	303	10	10	9	8	8.91
2	2 Program leaders serve as role models through their competencies.	290	10	10	9	8	8.79
3	4 The goals for producing graduates emphasize the excellence of the program academic.	297	10	10	9	8	8.74
4	1 Teaching and learning plans relate to the curriculum.	296	10	10	9	8	8.70
5	6 Resources plans for strategic deployment are developed.	286	10	10	9	7	8.41
6	9 The teaching and learning plans balance market needs.	286	10	9.25	9	8	8.41
7	5 Qualified human resource plans are developed.	285	10	10	9	7	8.38
8	11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	281	10	9	9	7.75	8.26
9	7 The goals for producing graduates are practical.	279	10	9	8.5	8	8.21
10	10 The goals for producing graduates balance the needs of stakeholders.	276	10	9	8	7.75	8.12
11	13 The number of functional departments is assessed.	260	10	9	8	7	8.12
12	14 The number of functional departments is accredited.	266	10	9	8	7	8.06
13	12 Teaching and learning plans are relevant to educational business conditions.	271	10	9	8	7	7.97

Rank	Items	Sum	Q₄	Q₃	Q₂ Median	Q₁	Mean
14	8 The goals for producing graduates keep faith with the stakeholders' expectations.	268	10	9	8	7	7.88
15	18 Reporting the proportion of fully deployed action plans / activities provided to service communities.	259	10	9	8	7	7.85
16	17 Evidence that leader promptly solves program complaints.	259	10	9	8	6.75	7.62
17	19 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	249	10	9	8	7	7.54
18	15 Obtain an annual increase in the number of applicants.	253	10	9	8	6	7.44
19	16 Decrease the ratio of resource usage.	224	10	8	8	6	7.22
	2 Learning-Centred Education						
	2.1 Input Variable						
1	1 Curriculum objectives relate to the curriculum's philosophy.	307	10	10	10	9	9.30
2	5 Curriculum is appropriately designed to develop students' research competencies.	307	10	10	9	9	9.03
3	3 Curriculum philosophy relates to the program's vision.	297	10	10	9	8	9.00
4	4 Curriculum structure supports curriculum objectives.	306	10	10	9	9	9.00
5	8 Curriculum goals are problem-solving oriented.	300	10	10	9	9	8.82
6	6 The number of faculty with higher degrees meets the standard criteria.	299	10	10	9	8	8.79
7	2 Curriculum structure meets standard criteria.	298	10	10	9	8	8.76
8	10 There is an advisory system that is practicable in promoting all dimensions of student development.	296	10	10	9	8	8.70
9	12 Curriculum is well-designed for developing students having competencies for profession.	294	10	9	9	8	8.65
10	13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	294	10	9.25	9	8	8.65
11	14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	284	10	9.5	9	8	8.61
12	11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	290	10	9	9	8	8.53
13	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	286	10	10	9	8	8.41

Rank	Items	Sum	Q$_4$	Q$_3$	Q$_2$ Median	Q$_1$	Mean
14	7 There is an acceptable system for evaluating student performance.	284	10	9.25	9	8	8.35
15	16 There are sufficient elective subjects provided to meet students' needs.	283	10	9	8.5	8	8.32
16	15 Curriculum goals balance students' needs.	273	10	9	9	8	8.27
17	17 Curriculum objectives relate to public policy.	279	10	9	8	8	8.21
18	20 There are sufficient local and foreign Masters' degree programs in educational administration information to ensure qualified management approaches.	275	10	9	8	7	8.09
19	19 There is an acceptable system for monitoring student progress.	263	10	9	8	7.5	7.97
20	18 Curriculum goals focus on a various assessment approach.	261	10	9	8	7	7.91
21	21 There is a sufficient amount of appropriate physical resources.	232	10	9	7	5.5	7.03
	2.2 Process Variables						
1	1 Faculties teach in areas that are directly related to their field of specialisation.	304	10	10	9	8	8.94
2	3 Encourage good interactions with students.	295	10	10	9	8	8.68
3	8 Set appropriate criteria and standards for all students.	281	10	10	9	8	8.52
4	4 Provide opportunities for all concerns about curriculum content development to be heard.	287	10	9.25	9	8	8.44
5	5 Use systematically authentic evaluation approaches.	287	10	10	9	8	8.44
6	2 Teaching and learning process is research-oriented in its focus.	285	10	9.25	9	8	8.38
7	7 Set high expectations for all students.	275	10	9.25	8.5	7.75	8.09
8	6 Provide student with opportunities to select their subjects based on their interests.	268	10	9	8	7	7.88
	2.3 Output Variables						
1	3 Develop a high level of competency amongst the students in the use of information and computer technology.	297	10	10	9	8	8.74
2	6 Curriculum content is continuously developed.	297	10	10	9	8	8.74
3	5 Use formative assessment and evaluation approaches in teaching and learning process.	287	10	10	9	8	8.44
4	4 Use appropriate technologies in the teaching and learning process.	286	10	9.25	8	8	8.41

Rank	Items	Sum	Q4	Q3	Q2 Median	Q1	Mean
5	2 Develop a high level of competency in skills of problem-solving amongst the students.	277	10	9	9	8	8.39
6	10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	285	10	10	8	8	8.38
7	8 Per cent of students who graduate within expected time.	283	10	9	9	8	8.32
8	1 Students report that they are satisfied with the faculties' teaching and learning process.	282	10	10	8	7	8.29
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	281	10	9.25	8	8	8.26
10	11 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	262	10	9	8	7.25	8.19
11	7 The proportions of students' papers, research articles are published in national and international academic journals.	258	10	9	8	7	7.59
	3 Organisational and Personal Learning						
	3.1 Input Variables						
1	1 There is sufficient resource, technology availability for organisation and personal learning.	273	10	9	8	8	8.27
2	3 There are validated processes designed to track progress on strategic goals.	273	10	9	8	7.5	8.27
3	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	268	10	9	8	7.5	8.12
4	2 There is sufficient validated information to indicate whether or not learning is taking place.	257	10	9	8	8	8.03
	3.2 Process Variables						
1	3 Reinforce the learning environment for students.	290	10	9.25	8.5	8	8.53
2	4 Reinforce the learning environment for faculty members performance improvement.	284	10	9	8.5	8	8.35
3	1 Promoting faculty members to create ideas for organisation performance improvement.	274	10	9	9	8	8.30
4	2 Provide opportunities to faculty members for continuous performance improvement.	264	10	9	8.5	8	8.25

Rank	Items	Sum	Q₄	Q₃	Q₂ Median	Q₁	Mean
5	5 Using education and training needs information in the design of training and further educating.	267	10	9	8	7.5	8.09
6	6 Reinforce the learning environment for stakeholders.	242	10	9	8	7	7.81
	3.3 Output Variables						
1	2 Evidence that faculty use teaching and learning assessment to improve their competencies.	281	10	9	9	7.75	8.26
2	5 Evidence that faculty use teaching and learning assessment to improve students' performance.	280	10	9	8	8	8.24
3	1 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	279	10	9	8.5	7	8.21
4	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	255	10	9	8	7.25	7.97
5	4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	270	10	9	8	7	7.94
6	6 Faculty members improve their performance as a result of their working experiences.	261	10	9	8	7	7.91
7	9 The nature and type, and the amount of researches in teaching and learning development are undertaken.	261	10	9	8	7	7.91
8	3 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	268	10	9	8	7	7.88
9	7 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	257	10	9	8	7	7.79
10	11 The proportion of innovation finding that affected a major change in the program.	252	10	9	8	6.5	7.64
11	12 Evidence of there is strong alumni support.	243	10	9	8	6	7.59
12	10 The proportion of research finding that affected a major change in the program.	248	10	9	8	6.5	7.52
13	13 Evidence of there is strong stakeholder support.	238	10	9	8	6.25	7.44
14	14 Evidence that learning driven by opportunities to effect significant and meaningful change.	230	10	8	8	6	7.19

Rank	Items	Sum	Q$_4$	Q$_3$	Q$_2$ Median	Q$_1$	Mean
	4 Valuing Faculty, Staff and Partners						
	4.1 Input Variables						
1	1 There is adequate funding for supporting the research.	284	10	10	9	7.75	8.35
2	4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	280	10	9	9	8	8.24
3	2 There is a validated faculty members performance evaluation approach.	277	10	9	9	8	8.15
4	3 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	277	10	9	8	8	8.15
5	5 There is adequate funding for supporting the innovation project.	256	10	9	8	7	7.76
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	252	10	9	8	7	7.64
	4.2 Process Variables						
1	1 Use faculty members performance evaluation as measures of their performance.	283	10	10	9	8	8.58
2	2 Implement human resources plan.	277	10	9	8	8	8.15
3	3 Use decentralisation and empowerment to assist in the overcoming of problems.	266	10	9	8	7.5	8.06
4	7 Promptly solve faculty members dissatisfaction.	262	10	9	8	7	7.94
5	5 Use faculty members satisfactions to continuous improve their performance.	268	10	9	9	7	7.88
6	6 Work to identify high-potential individuals to fill key positions in the future.	259	10	9	8	6.5	7.85
7	4 Use needs assessment to create a learning culture.	262	10	9	8	7	7.70
	4.3 Output Variables						
1	8 Evidence that program leaders make efforts to conduct performance excellences.	275	10	9	8	8	8.09
2	3 Strategic plans are developed by all concerned.	272	10	9	8	8	8.00
3	5 There is faculty members development activities organised for research embarking.	271	10	9	8	7.75	7.97

Rank	Items	Sum	Q₄	Q₃	Q₂ Median	Q₁	Mean
4	14 The proportion of faculty members is invited to be self-studied / thesis advisors.	262	10	9	8	7	7.94
5	4 Evidence that program leaders motivate faculty members developing and utilising their full potential.	259	10	9	8	7	7.85
6	9 Evidence of faculty response to improve students' learning performance in a timely manner.	250	10	9	8	7	7.81
7	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	264	10	9	8	7	7.76
8	2 Research innovation supported by external grants.	248	10	9	8	7.25	7.75
9	7 Evidence of responding to improve students' educational needs in a timely manner.	255	10	9	8	7	7.73
10	15 Evidence of responding to program's process improves in a timely manner.	247	10	9	8	7	7.72
11	11 The proportion of the cooperation among senior leaders, faculty, and staff is success.	254	10	9	8	7	7.70
12	18 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	254	10	9	8	6.5	7.70
13	12 There is faculty members development activities organised for innovation creating.	253	10	9	8	7	7.67
14	10 Evidence of responding to program's improving performance in a timely manner.	245	10	9	8	7	7.66
15	1 Research innovation supported by internal grants.	237	10	9	8	6	7.64
16	6 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	244	10	9.75	8	6.25	7.62
17	16 The number of books produces by faculty.	248	10	9	8	6.5	7.52
18	19 The proportion of faculty members is co-researchers with external organisations.	248	10	9	8	6.5	7.52
19	20 The proportion of faculty members formally presents academic output in the area of educational administration.	255	10	9	8	6	7.50
20	13 The number of faculty members is other organisation consultant.	251	10	8.25	8	6	7.38
21	21 The proportion of the joint ventures with stakeholders and potential contributors is success.	227	10	8	8	6	7.09

Each item is ordered by the mean score.

Rank	Composite Indicators	Sum	Q4	Q3	Q2 Media	Q1	Mean
1	2 Learning-centred Education	229	10	9	8	6	7.63
2	1 Visionary Leadership	227	10	9	8	6.75	7.57
3	4 Valuing Faculty, Staff, and Partners	220	10	9	7	6.75	7.33
4	3 Organisational and Personal Learning	219	10	9	7	6	7.30

Items with means of 8.20 or above are shaded Grey (15%).

Rank	Items	Sum	Q4	Q3	Q2 Median	Q1	Mean
	1 Visionary Leadership						
	1.1 Input Variables						
1	3 There is sufficient faculty members competency data available.	253	10	9	7.5	6	7.44
2	1 There is sufficient program resources information available.	250	10	9	8	6	7.35
3	5 There is sufficient market needs information available.	245	10	9	8	5.75	7.20
4	2 There is sufficient appropriate students' needs information available.	241	10	9	7	6	7.09
5	6 There is sufficient educational market research information available.	232	10	8	7	5	6.82
6	7 There is faculty members competency expectation information available.	232	10	8	7	5	6.82
7	8 There is sufficient servicing community information available.	230	10	9	7.5	5	6.76
8	4 There is sufficient stakeholders' needs information available.	216	10	8	6	5	6.35
	1.2 Process Variables						
1	3 Use qualified systematic performance evaluation approach.	261	10	9.25	8	6	7.68
2	2 Student and stakeholder satisfaction is used for continuous performance improvement.	254	10	9	8	5	7.47
3	4 Set strategic plans in order to the aims set.	252	10	9	8	6	7.41
4	6 Encourage faculty members to develop and learn.	251	10	9	8	6	7.38
5	1 Use quality assurance information for continuous performance improvement.	249	10	9	8	6	7.32

Rank	Items	Sum	Q4	Q₃	Q₂ Median	Q₁	Mean
6	9 Use program performance review for continuous improvement.	247	10	9	8	6	7.26
7	12 Share knowledge between team members.	246	10	9	8	6	7.24
8	8 Focus on participative management.	241	10	9	7.5	5.75	7.09
9	13 Encourage faculty members to be innovators.	240	10	9	7	6	7.06
10	5 Reform organisation using qualified management approaches.	232	10	8	8	5.5	7.03
11	10 Encourage faculty members to be creative.	236	10	9	7	6	6.94
12	11 All concerned contribute to reach the vision.	235	10	9	8	5	6.91
13	7 All concerned are involved in vision development.	233	10	9	7.5	5	6.85
14	14 Student and stakeholder dissatisfaction is promptly solved.	227	10	9	7	5	6.68
15	15 Encourage communities to develop program's values.	218	10	8	7	8	6.41
	1.3 Output Variables						
1	3 Program leaders serve as role models through their ethical behaviour.	282	10	9.25	8	7.75	8.29
2	1 Teaching and learning plans relate to the curriculum.	276	10	9	8	7	8.12
3	2 Program leaders serve as role models through their competencies.	263	10	9	8	7	7.97
4	4 The goals for producing graduates emphasize the excellence of the program academic.	271	10	9	8	7	7.97
5	13 The number of functional departments is assessed.	245	10	9	8	7	7.66
6	9 The teaching and learning plans balance market needs.	258	10	9	7.5	7	7.59
7	5 Qualified human resource plans are developed.	257	10	9	8	6.75	7.56
8	6 Resources plans for strategic deployment are developed.	257	10	9	8	7	7.56
9	17 Evidence that leader promptly solves program complaints.	240	10	8	7	5	7.51
10	7 The goals for producing graduates are practical.	254	10	9	8	6.75	7.47
11	11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	250	10	9	8	6	7.44
12	14 The number of functional departments is accredited.	245	10	8.5	7	6.5	7.42
13	18 Reporting the proportion of fully deployed action plans / activities provided to service communities.	244	10	9	8	6	7.39

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Rank	Items	Sum	Q4	Q₃	Q₂ Median	Q₁	Mean
14	8 The goals for producing graduates keep faith with the stakeholders' expectations.	250	10	9	8	6	7.35
15	10 The goals for producing graduates balance the needs of stakeholders.	250	10	9	7	6	7.35
16	12 Teaching and learning plans are relevant to educational business conditions.	246	10	9	8	6	7.24
17	19 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	236	10	8.5	8	6	7.15
18	15 Obtain an annual increase in the number of applicants.	236	10	8	7	5.75	6.94
19	16 Decrease the ratio of resource usage.	204	10	8	7	5	6.80
	2 Learning-Centred Education						
	2.1 Input Variables						
1	2 Curriculum structure meets standard criteria.	290	10	10	9	8	8.79
2	6 The number of faculty with higher degrees meets the standard criteria.	293	10	10	9	8	8.62
3	4 Curriculum structure supports curriculum objectives.	291	10	9.25	9	8	8.56
4	3 Curriculum philosophy relates to the program's vision.	289	10	10	9	7.75	8.50
5	7 There is an acceptable system for evaluating student performance.	286	10	9	9	8	8.41
6	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	285	10	9	9	7.75	8.38
7	14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	278	10	9	8	7	8.18
8	12 Curriculum is well-designed for developing students having competencies for profession.	270	10	9	8	8	8.12
9	15 Curriculum goals balance students' needs.	275	10	9	8	7	8.09
10	13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	271	10	9	9	6	7.97
11	1 Curriculum objectives relate to the curriculum's philosophy.	269	10	9	8.5	7	7.91
12	10 There is an advisory system that is practicable in promoting all dimensions of student development.	266	10	9	8	6.75	7.82
13	16 There are sufficient elective subjects provided to meet students' needs.	262	10	10	8	6.75	7.70

Rank	Items	Sum	Q4	Q$_3$	Q$_2$ Median	Q$_1$	Mean
14	21 There is a sufficient amount of appropriate physical resources.	262	10	9	8	7	7.70
15	20 There are sufficient local and foreign Masters' degree programs in educational administration information to ensure qualified management approaches.	252	10	9	8	6	7.64
16	8 Curriculum goals are problem-solving oriented.	270	10	9	8	6.75	7.49
17	5 Curriculum is appropriately designed to develop students' research competencies.	247	10	9	8	6	7.48
18	19 There is an acceptable system for monitoring student progress.	252	10	9	8	6	7.41
19	11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	251	10	9	8	6	7.38
20	18 Curriculum goals focus on a various assessment approach.	249	10	9	8	5.75	7.35
21	17 Curriculum objectives relate to public policy.	241	10	9	8	6	7.30
	2.2 Process Variables						
1	3 Encourage good interactions with students.	279	10	9	8	7.75	8.21
2	1 Faculties teach in areas that are directly related to their field of specialisation.	278	10	10	8.5	8	8.18
3	2 Teaching and learning process is research-oriented in its focus.	267	10	9	8	7	7.85
4	5 Use systematically authentic evaluation approaches.	267	10	9	8	6.75	7.85
5	8 Set appropriate criteria and standards for all students.	255	10	9	8	6	7.73
6	4 Provide opportunities for all concerns about curriculum content development to be heard.	261	10	9	8	6	7.68
7	6 Provide student with opportunities to select their subjects based on their interests.	234	10	8.5	8	5	7.09
8	7 Set high expectations for all students.	227	10	8	7	6	6.88
	2.3 Output Variables						
1	6 Curriculum content is continuously developed.	265	10	9	8	7	7.79
2	8 Per cent of students who graduate within expected time.	261	10	9	8	6.75	7.68
3	3 Develop a high level of competency amongst the students in the use of information and computer technology.	251	10	9	8	6.5	7.61
4	1 Students report that they are satisfied with the faculties' teaching and learning process.	258	10	9	7.5	6	7.59

Rank	Items	Sum	Q4	Q₃	Q₂ Median	Q₁	Mean
5	2 Develop a high level of competency in skills of problem-solving amongst the students.	250	10	9	8	6.5	7.58
6	4 Use appropriate technologies in the teaching and learning process.	256	10	8.25	8	7	7.53
7	10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	256	10	9	8	6	7.53
8	5 Use formative assessment and evaluation approaches in teaching and learning process.	253	10	9	8	6	7.44
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	252	10	8	8	6	7.41
10	11 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	237	10	9	8	6	7.41
11	7 The proportions of students' papers, research articles are published in national and international academic journals.	216	10	9	7	4	6.35
	3 Organisational and Personal Learning						
	3.1 Input Variables						
1	1 There is sufficient resource, technology availability for organisation and personal learning.	238	10	8.5	8	6	7.21
2	3 There are validated processes designed to track progress on strategic goals.	230	10	8	7.5	6.25	7.19
3	2 There is sufficient validated information to indicate whether or not learning is taking place.	237	10	8	8	6	7.18
4	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	216	9	8	7	5.25	6.75
	3.2 Process Variables						
1	3 Reinforce the learning environment for students.	264	10	9	8	7	7.76
2	4 Reinforce the learning environment for faculty members performance improvement.	254	10	9	8	6	7.47
3	2 Provide opportunities to faculty members for continuous performance improvement.	234	10	8	8	6.25	7.31

Rank	Items	Sum	Q4	Q₃	Q₂ Median	Q₁	Mean
4	1 Promoting faculty members to create ideas for organisation performance improvement.	232	10	9	8	6	7.25
5	5 Using education and training needs information in the design of training and further educating.	236	10	8.5	8	6	7.15
6	6 Reinforce the learning environment for stakeholders.	215	10	8	7	6	6.94
	3.3 Output Variables						
1	1 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	243	10	8.5	8	6	7.36
2	5 Evidence that faculty use teaching and learning assessment to improve students' performance.	250	10	9	8	6	7.35
3	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	225	10	8	8	6	7.26
4	2 Evidence that faculty use teaching and learning assessment to improve their competencies.	238	10	8.5	8	6	7.21
5	9 The nature and type, and the amount of researches in teaching and learning development are undertaken.	228	10	9	7.5	6	7.12
6	3 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	234	10	8.5	8	5	7.09
7	6 Faculty members improve their performance as a result of their working experiences.	233	10	8	8	6	7.06
8	7 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	232	10	8	8	6	7.03
9	3 Evidence that there is program leaders focuses on solving faculty members problems at their source.	225	10	8	7	5.5	6.82
10	12 Evidence of there is strong alumni support.	216	10	9	7	4.25	6.75
11	11 The proportion of innovation finding that affected a major change in the program.	219	10	8	7	5	6.64
12	14 Evidence that learning driven by opportunities to effect significant and meaningful change.	209	10	8	7.5	5	6.53
13	10 The proportion of research finding that affected a major change in the program.	214	10	8	7	5	6.48

Rank	Items	Sum	Q4	Q₃	Q₂ Median	Q₁	Mean
14	13 Evidence of there is strong stakeholder support.	207	10	8	7	4.25	6.47
	4 Valuing Faculty, Staff and Partners						
	4.1 Input Variables						
1	4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	254	10	9	8	6.75	7.47
2	3 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	251	10	8.25	8	6	7.38
3	2 There is a validated faculty members performance evaluation approach.	250	10	9	8	6	7.35
4	1 There is adequate funding for supporting the research.	248	10	9	8	6	7.29
5	5 There is adequate funding for supporting the innovation project.	229	10	8.5	8	6	6.94
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	224	10	8	7	6	6.79
	4.2 Process Variables						
1	1 Use faculty members performance evaluation as measures of their performance.	253	10	9	8	7	7.91
2	2 Implement human resources plan.	244	10	8.25	8	6	7.18
3	3 Use decentralisation and empowerment to assist in the overcoming of problems.	229	10	8	7	6	6.94
4	6 Work to identify high-potential individuals to fill key positions in the future.	228	10	8	7	6	6.91
5	5 Use faculty members satisfactions to continuous improve their performance.	233	10	8	7.5	5.75	6.85
6	7 Promptly solve faculty members dissatisfaction.	225	10	8	7	6	6.82
7	4 Use needs assessment to create a learning culture.	230	9	8	7	5.75	6.76
	4.3 Output Variables						
1	3 Strategic plans are developed by all concerned.	249	10	9	8	6	7.32

Rank	Items	Sum	Q4	Q₃	Q₂ Median	Q₁	Mean
2	8 Evidence that program leaders make efforts to conduct performance excellences.	240	9	8	8	6.5	7.27
3	14 The proportion of faculty members is invited to be self-studied / thesis advisors.	240	10	8	8	6	7.27
4	2 Research innovation supported by external grants.	225	10	9	8	5	7.03
5	4 Evidence that program leaders motivate faculty members developing and utilising their full potential.	232	10	8	7	6	7.03
6	5 There is faculty members development activities organised for research embarking.	237	10	8	8	5.75	6.97
7	9 Evidence of faculty response to improve students' learning performance in a timely manner.	223	10	8	7	6	6.97
8	15 Evidence of responding to program's process improves in a timely manner.	222	10	8	7	6	6.94
9	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	235	10	9	8	5	6.91
10	10 Evidence of responding to program's improving performance in a timely manner.	220	10	8	7	6	6.88
11	1 Research innovation supported by internal grants.	212	10	8	8	5	6.84
12	18 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	224	10	8.5	8	5	6.79
13	11 The proportion of the cooperation among senior leaders, faculty, and staff is success.	223	10	8	7	5	6.76
14	16 The number of books produces by faculty.	220	10	8	7	5.5	6.67
15	7 Evidence of responding to improve students' educational needs in a timely manner.	219	10	8	7	5	6.64
16	12 There is faculty members development activities organised for innovation creating.	214	10	8	7	5	6.48
17	13 The number of faculty members is other organisation consultant.	220	9	8	8	5	6.47
18	20 The proportion of faculty members formally presents academic output in the area of educational administration.	219	10	8	7.5	5	6.44
19	19 The proportion of faculty members is co-researchers with external organisations.	212	10	8	8	5	6.42

Rank	Items	Sum	Q4	Q₃	Q₂ Median	Q₁	Mean
20	6 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	205	10	8	7	5	6.41
21	21 The proportion of the joint ventures with stakeholders and potential contributors is success.	198	9	8	7	5	6.19

**TABLE A10   THE SINGLE-ROUND SURVEY– THE SECOND EXPERT PANEL
QUESTIONNAIRE RESULTS – GOOD COMPOSITE INDICATORS AND
THEIR VARIABLES: THE UTILITY ASPECT**

Each item is ordered by the mean score.

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
	1 Visionary Leadership				**25.00**
	1.1 Input Variables				**4.72**
1	1 There is sufficient program resources information available.	288	9	8.47	0.63
2	3 There is sufficient faculty members competency data available.	280	8.5	8.24	0.61
3	2 There is sufficient appropriate students' needs information available.	277	8	8.15	0.60
4	5 There is sufficient market needs information available.	274	8	8.06	0.60
5	4 There is sufficient stakeholders' needs information available.	265	8	7.79	0.58
6	7 There is faculty members competency expectation information available.	262	8	7.71	0.57
7	6 There is sufficient educational market research information available.	261	8	7.68	0.57
8	8 There is sufficient servicing community information available.	257	8	7.56	0.56
	1.2 Process Variables				**8.95**
1	3 Use qualified systematic performance evaluation approach.	290	9	8.53	0.63
2	4 Set strategic plans in order to the aims set.	287	9	8.44	0.63
3	1 Use quality assurance information for continuous performance improvement.	282	8.5	8.29	0.62
4	2 Student and stakeholder satisfaction is used for continuous performance improvement.	282	9	8.29	0.62
5	6 Encourage faculty members to develop and learn.	278	9	8.18	0.61
6	8 Focus on participative management.	278	8.5	8.18	0.61
7	5 Reform organisation using qualified management approaches.	267	8	8.09	0.58
8	9 Use program performance review for continuous improvement.	274	8	8.06	0.60
9	10 Encourage faculty members to be creative.	274	9	8.06	0.60
10	12 Share knowledge between team members.	274	8.5	8.06	0.60
11	7 All concerned are involved in vision development.	273	9	8.03	0.60
12	11 All concerned contribute to reach the vision.	273	9	8.03	0.60
13	13 Encourage faculty members to be innovators.	268	8	7.88	0.58
14	14 Student and stakeholder dissatisfaction is promptly solved.	259	8	7.62	0.57
15	15 Encourage communities to develop program's values.	244	8	7.18	0.53

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
	1.3 Output Variables				**11.32**
1	3 Program leaders serve as role models through their ethical behaviour.	303	9	8.91	0.66
2	2 Program leaders serve as role models through their competencies.	290	9	8.79	0.63
3	4 The goals for producing graduates emphasize the excellence of the program academic.	297	9	8.74	0.65
4	1 Teaching and learning plans relate to the curriculum.	296	9	8.70	0.65
5	6 Resources plans for strategic deployment are developed.	286	9	8.41	0.62
6	9 The teaching and learning plans balance market needs.	286	9	8.41	0.62
7	5 Qualified human resource plans are developed.	285	9	8.38	0.62
8	11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	281	9	8.26	0.61
9	7 The goals for producing graduates are practical.	279	8.5	8.21	0.61
10	10 The goals for producing graduates balance the needs of stakeholders.	276	8	8.12	0.60
11	13 The number of functional departments is assessed.	260	8	8.12	0.57
12	14 The number of functional departments is accredited.	266	8	8.06	0.58
13	12 Teaching and learning plans are relevant to educational business conditions.	271	8	7.97	0.59
14	8 The goals for producing graduates keep faith with the stakeholders' expectations.	268	8	7.88	0.58
15	18 Reporting the proportion of fully deployed action plans / activities provided to service communities.	259	8	7.85	0.57
16	17 Evidence that leader promptly solves program complaints.	259	8	7.62	0.57
17	19 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	249	8	7.54	0.54
18	15 Obtain an annual increase in the number of applicants.	253	8	7.44	0.55
19	16 Decrease the ratio of resource usage.	224	8	7.22	0.49
	2 Learning-Centred Education				**24.90**
	2.1 Input Variables				**13.14**
1	1 Curriculum objectives relate to the curriculum's philosophy.	307	10	9.30	0.67
2	5 Curriculum is appropriately designed to develop students' research competencies.	307	9	9.03	0.67
3	3 Curriculum philosophy relates to the program's vision.	297	9	9.00	0.65
4	4 Curriculum structure supports curriculum objectives.	306	9	9.00	0.67

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
5	8 Curriculum goals are problem-solving oriented.	300	9	8.82	0.66
6	6 The number of faculty with higher degrees meets the standard criteria.	299	9	8.79	0.65
7	2 Curriculum structure meets standard criteria.	298	9	8.76	0.65
8	10 There is an advisory system that is practicable in promoting all dimensions of student development.	296	9	8.70	0.65
9	12 Curriculum is well-designed for developing students having competencies for profession.	294	9	8.65	0.64
10	13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	294	9	8.65	0.64
11	14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	284	9	8.61	0.62
12	11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	290	9	8.53	0.63
13	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	286	9	8.41	0.63
14	7 There is an acceptable system for evaluating student performance.	284	9	8.35	0.62
15	16 There are sufficient elective subjects provided to meet students' needs.	283	8.5	8.32	0.62
16	15 Curriculum goals balance students' needs.	273	9	8.27	0.60
17	17 Curriculum objectives relate to public policy.	279	8	8.21	0.61
18	20 There are sufficient local and foreign Masters' degree programs in educational administration information to ensure qualified management approaches.	275	8	8.09	0.60
19	19 There is an acceptable system for monitoring student progress.	263	8	7.97	0.58
20	18 Curriculum goals focus on a various assessment approach.	261	8	7.91	0.57
21	21 There is a sufficient amount of appropriate physical resources.	232	7	7.03	0.51
	2.2 Process Variables				**4.99**
1	1 Faculties teach in areas that are directly related to their field of specialisation.	304	9	8.94	0.67
2	3 Encourage good interactions with students.	295	9	8.68	0.65
3	8 Set appropriate criteria and standards for all students.	281	9	8.52	0.61
4	4 Provide opportunities for all concerns about curriculum content development to be heard.	287	9	8.44	0.63
5	5 Use systematically authentic evaluation approaches.	287	9	8.44	0.63
6	2 Teaching and learning process is research-oriented in its focus.	285	9	8.38	0.62

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
7	7 Set high expectations for all students.	275	8.5	8.09	0.60
8	6 Provide student with opportunities to select their subjects based on their interests.	268	8	7.88	0.59
	2.3 Output Variables				**6.77**
1	3 Develop a high level of competency amongst the students in the use of information and computer technology.	297	9	8.74	0.65
2	6 Curriculum content is continuously developed.	297	9	8.74	0.65
3	5 Use formative assessment and evaluation approaches in teaching and learning process.	287	9	8.44	0.63
4	4 Use appropriate technologies in the teaching and learning process.	286	8	8.41	0.63
5	2 Develop a high level of competency in skills of problem-solving amongst the students.	277	9	8.39	0.61
6	10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	285	8	8.38	0.62
7	8 Per cent of students who graduate within expected time.	283	9	8.32	0.62
8	1 Students report that they are satisfied with the faculties' teaching and learning process.	282	8	8.29	0.62
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	281	8	8.26	0.61
10	11 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	262	8	8.19	0.57
11	7 The proportions of students' papers, research articles are published in national and international academic journals.	258	8	7.59	0.56
	3 Organisational and Personal Learning				**24.71**
	3.1 Input Variables				**4.19**
1	1 There is sufficient resource, technology availability for organisation and personal learning.	273	8	8.27	1.07
2	3 There are validated processes designed to track progress on strategic goals.	273	8	8.27	1.07
3	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	268	8	8.12	1.05
4	2 There is sufficient validated information to indicate whether or not learning is taking place.	257	8	8.03	1.01
	3.2 Process Variables				**6.34**

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
1	3 Reinforce the learning environment for students.	290	8.5	8.53	1.13
2	4 Reinforce the learning environment for faculty members performance improvement.	284	8.5	8.35	1.11
3	1 Promoting faculty members to create ideas for organisation performance improvement.	274	9	8.30	1.07
4	2 Provide opportunities to faculty members for continuous performance improvement.	264	8.5	8.25	1.03
5	5 Using education and training needs information in the design of training and further educating.	267	8	8.09	1.04
6	6 Reinforce the learning environment for stakeholders.	242	8	7.81	0.95
	3.3 Output Variables				**14.18**
1	2 Evidence that faculty use teaching and learning assessment to improve their competencies.	281	9	8.26	1.10
2	5 Evidence that faculty use teaching and learning assessment to improve students' performance.	280	8	8.24	1.10
3	1 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	279	8.5	8.21	1.09
4	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	255	8	7.97	1.00
5	4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	270	8	7.94	1.06
6	6 Faculty members improve their performance as a result of their working experiences.	261	8	7.91	1.02
7	9 The nature and type, and the amount of researches in teaching and learning development are undertaken.	261	8	7.91	1.02
8	3 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	268	8	7.88	1.05
9	7 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	257	8	7.79	1.01
10	11 The proportion of innovation finding that affected a major change in the program.	252	8	7.64	0.99
11	12 Evidence of there is strong alumni support.	243	8	7.59	0.95
12	10 The proportion of research finding that affected a major change in the program.	248	8	7.52	0.97
13	13 Evidence of there is strong stakeholder support.	238	8	7.44	0.93
14	14 Evidence that learning driven by opportunities to effect significant and meaningful change.	230	8	7.19	0.90

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
	4 Valuing Faculty, Staff and Partners				**25.38**
	4.1 Input Variables				**4.68**
1	1 There is adequate funding for supporting the research.	284	9	8.35	0.82
2	4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	280	9	8.24	0.81
3	2 There is a validated faculty members performance evaluation approach.	277	9	8.15	0.80
4	3 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	277	8	8.15	0.80
5	5 There is adequate funding for supporting the innovation project.	256	8	7.76	0.74
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	252	8	7.64	0.72
	4.2 Process Variables				**5.40**
1	1 Use faculty members performance evaluation as measures of their performance.	283	9	8.58	0.81
2	2 Implement human resources plan.	277	8	8.15	0.80
3	3 Use decentralisation and empowerment to assist in the overcoming of problems.	266	8	8.06	0.77
4	7 Promptly solve faculty members dissatisfaction.	262	8	7.94	0.75
5	5 Use faculty members satisfactions to continuous improve their performance.	268	9	7.88	0.77
6	6 Work to identify high-potential individuals to fill key positions in the future.	259	8	7.85	0.75
7	4 Use needs assessment to create a learning culture.	262	8	7.70	0.75
	4.3 Output Variables				**15.30**
1	8 Evidence that program leaders make efforts to conduct performance excellences.	275	8	8.09	0.79
2	3 Strategic plans are developed by all concerned.	272	8	8.00	0.78
3	5 There is faculty members development activities organised for research embarking.	271	8	7.97	0.78
4	14 The proportion of faculty members is invited to be self-studied / thesis advisors.	262	8	7.94	0.75
5	4 Evidence that program leaders motivate faculty members developing and utilising their full potential.	259	8	7.85	0.75
6	9 Evidence of faculty response to improve students' learning performance in a timely manner.	250	8	7.81	0.72

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
7	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	264	8	7.76	0.76
8	2 Research innovation supported by external grants.	248	8	7.75	0.71
9	7 Evidence of responding to improve students' educational needs in a timely manner.	255	8	7.73	0.73
10	15 Evidence of responding to program's process improves in a timely manner.	247	8	7.72	0.71
11	11 The proportion of the cooperation among senior leaders, faculty, and staff is success.	254	8	7.70	0.73
12	18 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	254	8	7.70	0.73
13	12 There is faculty members development activities organised for innovation creating.	253	8	7.67	0.73
14	10 Evidence of responding to program's improving performance in a timely manner.	245	8	7.66	0.70
15	1 Research innovation supported by internal grants.	237	8	7.64	0.68
16	6 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	244	8	7.62	0.70
17	16 The number of books produces by faculty.	248	8	7.52	0.71
18	19 The proportion of faculty members is co-researchers with external organisations.	248	8	7.52	0.71
19	20 The proportion of faculty members formally presents academic output in the area of educational administration.	255	8	7.50	0.73
20	13 The number of faculty members is other organisation consultant.	251	8	7.38	0.72
21	21 The proportion of the joint ventures with stakeholders and potential contributors is success.	227	8	7.09	0.65

Each item is ordered by the mean score.

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
	1 Visionary Leadership				**25.36**
	1.1 Input Variables				**4.24**
1	3 There is sufficient faculty members competency data available.	253	7.5	7.44	0.64
2	1 There is sufficient program resources information available.	250	8	7.35	0.63
3	5 There is sufficient market needs information available.	245	8	7.20	0.62
4	2 There is sufficient appropriate students' needs information available.	241	7	7.09	0.61
5	6 There is sufficient educational market research information available.	232	7	6.82	0.58
6	7 There is faculty members competency expectation information available.	232	7	6.82	0.58
7	8 There is sufficient servicing community information available.	230	7.5	6.76	0.58
	1.2 Process Variables				**9.12**
1	3 Use qualified systematic performance evaluation approach.	261	8	7.68	0.66
2	2 Student and stakeholder satisfaction is used for continuous performance improvement.	254	8	7.47	0.64
3	4 Set strategic plans in order to the aims set.	252	8	7.41	0.63
4	6 Encourage faculty members to develop and learn.	251	8	7.38	0.63
5	1 Use quality assurance information for continuous performance improvement.	249	8	7.32	0.63
6	9 Use program performance review for continuous improvement.	247	8	7.26	0.62
7	12 Share knowledge between team members.	246	8	7.24	0.62
8	8 Focus on participative management.	241	7.5	7.09	0.61
9	13 Encourage faculty members to be innovators.	240	7	7.06	0.60
10	5 Reform organisation using qualified management approaches.	232	8	7.03	0.58
11	10 Encourage faculty members to be creative.	236	7	6.94	0.59
12	11 All concerned contribute to reach the vision.	235	8	6.91	0.59
13	7 All concerned are involved in vision development.	233	7.5	6.85	0.59

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
14	14 Student and stakeholder dissatisfaction is promptly solved.	227	7	6.68	0.57
15	15 Encourage communities to develop program's values.	218	7	6.41	0.55
	1.3 Output Variables				**12.00**
1	3 Program leaders serve as role models through their ethical behaviour.	282	8	8.29	0.71
2	1 Teaching and learning plans relate to the curriculum.	276	8	8.12	0.70
3	2 Program leaders serve as role models through their competencies.	263	8	7.97	0.66
4	4 The goals for producing graduates emphasize the excellence of the program academic.	271	8	7.97	0.68
5	13 The number of functional departments is assessed.	245	8	7.66	0.62
6	9 The teaching and learning plans balance market needs.	258	7.5	7.59	0.65
7	5 Qualified human resource plans are developed.	257	8	7.56	0.65
8	6 Resources plans for strategic deployment are developed.	257	8	7.56	0.65
9	17 Evidence that leader promptly solves program complaints.	240	7	7.51	0.60
10	7 The goals for producing graduates are practical.	254	8	7.47	0.64
11	11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	250	8	7.44	0.63
12	14 The number of functional departments is accredited.	245	7	7.42	0.62
13	18 Reporting the proportion of fully deployed action plans / activities provided to service communities.	244	8	7.39	0.61
14	8 The goals for producing graduates keep faith with the stakeholders' expectations.	250	8	7.35	0.63
15	10 The goals for producing graduates balance the needs of stakeholders.	250	7	7.35	0.63
16	12 Teaching and learning plans are relevant to educational business conditions.	246	8	7.24	0.62
17	19 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	236	8	7.15	0.59
18	15 Obtain an annual increase in the number of applicants.	236	7	6.94	0.59
19	16 Decrease the ratio of resource usage.	204	7	6.80	0.51
	2 Learning-Centred Education				**25.59**
	2.1 Input Variables				**14.45**
1	2 Curriculum structure meets standard criteria.	290	9	8.79	0.74

Rank	Items	Sum	Q$_2$ Median	Mean	Weighted Scores (%)
2	6 The number of faculty with higher degrees meets the standard criteria.	293	9	8.62	0.75
3	4 Curriculum structure supports curriculum objectives.	291	9	8.56	0.74
4	3 Curriculum philosophy relates to the program's vision.	289	9	8.50	0.74
5	7 There is an acceptable system for evaluating student performance.	286	9	8.41	0.73
6	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	285	9	8.38	0.73
7	14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	278	8	8.18	0.71
8	12 Curriculum is well-designed for developing students having competencies for profession.	270	8	8.12	0.69
9	15 Curriculum goals balance students' needs.	275	8	8.09	0.70
10	13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	271	9	7.97	0.69
11	1 Curriculum objectives relate to the curriculum's philosophy.	269	8.5	7.91	0.69
12	10 There is an advisory system that is practicable in promoting all dimensions of student development.	266	8	7.82	0.68
13	16 There are sufficient elective subjects provided to meet students' needs.	262	8	7.70	0.67
14	21 There is a sufficient amount of appropriate physical resources.	262	8	7.70	0.67
15	20 There are sufficient local and foreign Masters' degree programs in educational administration information to ensure qualified management approaches.	252	8	7.64	0.64
16	8 Curriculum goals are problem-solving oriented.	270	8	7.49	0.69
17	5 Curriculum is appropriately designed to develop students' research competencies.	247	8	7.48	0.63
18	19 There is an acceptable system for monitoring student progress.	252	8	7.41	0.64
19	11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	251	8	7.38	0.64
20	18 Curriculum goals focus on a various assessment approach.	249	8	7.35	0.64
21	17 Curriculum objectives relate to public policy.	241	8	7.30	0.62
	2.2 Process Variables				**5.29**
1	3 Encourage good interactions with students.	279	8	8.21	0.71

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
2	1 Faculties teach in areas that are directly related to their field of specialisation.	278	8.5	8.18	0.71
3	2 Teaching and learning process is research-oriented in its focus.	267	8	7.85	0.68
4	5 Use systematically authentic evaluation approaches.	267	8	7.85	0.68
5	8 Set appropriate criteria and standards for all students.	255	8	7.73	0.65
6	4 Provide opportunities for all concerns about curriculum content development to be heard.	261	8	7.68	0.67
7	6 Provide student with opportunities to select their subjects based on their interests.	234	8	7.09	0.60
8	7 Set high expectations for all students.	227	7	6.88	0.58
	2.3 Output Variables				**5.84**
1	6 Curriculum content is continuously developed.	265	8	7.79	0.68
2	8 Per cent of students who graduate within expected time.	261	8	7.68	0.67
3	3 Develop a high level of competency amongst the students in the use of information and computer technology.	251	8	7.61	0.64
4	1 Students report that they are satisfied with the faculties' teaching and learning process.	258	7.5	7.59	0.66
5	2 Develop a high level of competency in skills of problem-solving amongst the students.	250	8	7.58	0.64
7	10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	256	8	7.53	0.66
8	5 Use formative assessment and evaluation approaches in teaching and learning process.	253	8	7.44	0.65
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	252	8	7.41	0.64
10	11 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	237	8	7.41	0.61
	3 Organisational and Personal Learning				**24.47**
	3.1 Input Variables				**4.08**
1	1 There is sufficient resource, technology availability for organisation and personal learning.	238	8	7.21	1.05

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
2	3 There are validated processes designed to track progress on strategic goals.	230	7.5	7.19	1.02
3	2 There is sufficient validated information to indicate whether or not learning is taking place.	237	8	7.18	1.05
4	4 The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	216	7	6.75	0.96
	3.2 Process Variables				**6.35**
1	3 Reinforce the learning environment for students.	264	8	7.76	1.17
2	4 Reinforce the learning environment for faculty members performance improvement.	254	8	7.47	1.12
3	2 Provide opportunities to faculty members for continuous performance improvement.	234	8	7.31	1.04
4	1 Promoting faculty members to create ideas for organisation performance improvement.	232	8	7.25	1.03
5	5 Using education and training needs information in the design of training and further educating.	236	8	7.15	1.04
6	6 Reinforce the learning environment for stakeholders.	215	7	6.94	0.95
	3.3 Output Variables				**14.04**
1	1 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	243	8	7.36	1.08
2	5 Evidence that faculty use teaching and learning assessment to improve students' performance.	250	8	7.35	1.11
3	8 The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	225	8	7.26	1.00
4	2 Evidence that faculty use teaching and learning assessment to improve their competencies.	238	8	7.21	1.05
5	9 The nature and type, and the amount of researches in teaching and learning development are undertaken.	228	7.5	7.12	1.01
6	3 Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	234	8	7.09	1.04
7	6 Faculty members improve their performance as a result of their working experiences.	233	8	7.06	1.03
8	7 There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	232	8	7.03	1.03

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
9	4 Evidence that there is program leaders focuses on solving faculty members problems at their source.	225	7	6.82	1.00
10	12 Evidence of there is strong alumni support.	216	7	6.75	0.96
11	11 The proportion of innovation finding that affected a major change in the program.	219	7	6.64	0.97
12	14 Evidence that learning driven by opportunities to effect significant and meaningful change.	209	7.5	6.53	0.92
13	10 The proportion of research finding that affected a major change in the program.	214	7	6.48	0.95
14	13 Evidence of there is strong stakeholder support.	207	7	6.47	0.92
	4 Valuing Faculty, Staff and Partners				**24.58**
	4.1 Input Variables				**4.72**
1	4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	254	8	7.47	0.82
2	3 There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	251	8	7.38	0.81
3	2 There is a validated faculty members performance evaluation approach.	250	8	7.35	0.81
4	1 There is adequate funding for supporting the research.	248	8	7.29	0.80
5	5 There is adequate funding for supporting the innovation project.	229	8	6.94	0.74
6	6 There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	224	7	6.79	0.73
	4.2 Process Variables				**5.32**
1	1 Use faculty members performance evaluation as measures of their performance.	253	8	7.91	0.82
2	2 Implement human resources plan.	244	8	7.18	0.79
3	3 Use decentralisation and empowerment to assist in the overcoming of problems.	229	7	6.94	0.74
4	6 Work to identify high-potential individuals to fill key positions in the future.	228	7	6.91	0.74

Rank	Items	Sum	Q₂ Median	Mean	Weighted Scores (%)
5	5 Use faculty members satisfactions to continuous improve their performance.	233	7.5	6.85	0.75
6	7 Promptly solve faculty members dissatisfaction.	225	7	6.82	0.73
7	4 Use needs assessment to create a learning culture.	230	7	6.76	0.74
	4.3 Output Variables				**14.55**
1	3 Strategic plans are developed by all concerned.	249	8	7.32	0.81
2	8 Evidence that program leaders make efforts to conduct performance excellences.	240	8	7.27	0.78
3	14 The proportion of faculty members is invited to be self-studied / thesis advisors.	240	8	7.27	0.78
4	2 Research innovation supported by external grants.	225	8	7.03	0.73
5	4 Evidence that program leaders motivate faculty members developing and utilising their full potential.	232	7	7.03	0.75
6	5 There is faculty members development activities organised for research embarking.	237	8	6.97	0.77
7	9 Evidence of faculty response to improve students' learning performance in a timely manner.	223	7	6.97	0.72
8	15 Evidence of responding to program's process improves in a timely manner.	222	7	6.94	0.72
9	17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	235	8	6.91	0.76
10	10 Evidence of responding to program's improving performance in a timely manner.	220	7	6.88	0.71
11	1 Research innovation supported by internal grants.	212	8	6.84	0.69
12	18 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	224	8	6.79	0.73
13	11 The proportion of the cooperation among senior leaders, faculty, and staff is success.	223	7	6.76	0.72
14	16 The number of books produces by faculty.	220	7	6.67	0.71
15	7 Evidence of responding to improve students' educational needs in a timely manner.	219	7	6.64	0.71
16	12 There is faculty members development activities organised for innovation creating.	214	7	6.48	0.69
17	13 The number of faculty members is other organisation consultant.	220	8	6.47	0.71

Rank	Items	Sum	Q$_2$ Median	Mean	Weighted Scores (%)
18	20 The proportion of faculty members formally presents academic output in the area of educational administration.	219	7.5	6.44	0.71
19	19 The proportion of faculty members is co-researchers with external organisations.	212	8	6.42	0.69
20	6 The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	205	7	6.41	0.66

TABLE A12   THE SINGLE-ROUND SURVEY:
THE SIX PARTICIPANTS QUESTIONNAIRE RESULTS

Composite Indicators	Utility						Usability					
	Sum	Q4	Q3	Q2	Q1	Mean	Sum	Q4	Q3	Q2	Q1	Mean
1 Visionary Leadership	54	10	10	9	8	9.00	49	9	9	8	7.75	8.17
2 Learning-centred Education	52	10	9.25	8.50	8	8.67	50	9	9	8.50	7.75	8.33
3 Organisational and Personal Learning	52	10	10	8.50	7.75	8.67	49	9	9	8	7.75	8.17
4 Valuing Faculty, Staff, and Partners	55	10	10	9.50	8	9.17	52	10	9.25	9	7.75	8.67

Items	Utility						Usability					
	Sum	Q4	Q3	Q2	Q1	Mean	Sum	Q4	Q3	Q2	Q1	Mean
1. VISIONARY LEADERSHIP												
1.1 Input Variables												
1 There is sufficient program resources information available.	52	10	9.25	9	8.25	8.67	52	10	10	9	8.00	8.67
2 There is sufficient appropriate students' needs information available.	52	10	10	9	7.50	8.67	50	10	10	9	6.50	8.33
3 There is sufficient faculty members competency data available.	50	10	10	9	6.50	8.33	47	10	10	7.50	6.50	7.83
4 There is sufficient stakeholders' needs information available.	45	9	9	8.00	5.75	7.50	43	9	8.25	7.00	6.50	7.17
5 There is sufficient market needs information available.	46	9	8.25	8.00	7.25	7.67	47	9	9	8.00	7.25	7.83
6 There is sufficient educational market research information available.	43	9	8.25	7.50	5.75	7.17	43	9	8.25	7.50	5.75	7.17
7 There is faculty members competency expectation information available.	47	10	10	7.50	6.50	7.83	47	10	10.00	7.50	6.50	7.83

Items	Utility						Usability					
	Sum	Q4	Q3	Q2	Q1	Mean	Sum	Q4	Q3	Q2	Q1	Mean
8 There is sufficient servicing community information available.	48	10	10	8.50	5.75	8.00	49	10	10	9	5.75	8.17
1.2 Process Variables												
1 Use quality assurance information for continuous performance improvement.	51	10	10	9.50	6.50	8.50	49	10	10	9	5.75	8.17
2 Student and stakeholder satisfaction is used for continuous performance improvement.	53	10	10	10	7.25	8.83	51	10	10	10	5.75	8.50
3 Use qualified systematic performance evaluation approach.	53	10	10	9.50	7.50	8.83	52	10	10	10	6.00	8.67
4 Set strategic plans in order to achieve the aims set.	53	10	10	9.50	7.50	8.83	50	10	9.25	9	6.75	8.33
5 Reform organisation using qualified management approaches.	40	10	9.50	8.00	6.50	8.00	39	10	9.50	8.00	6.00	7.80
6 Encourage faculty members to develop and learn.	51	10	10	8.50	7.00	8.50	49	10	9.25	8.50	6.75	8.17
7 All concerned are involved in vision development.	50	10	10	8.50	7.25	8.33	48	10	10	8.50	5.75	8.00
8 Focus on participative management.	51	10	10.0	9	7.25	8.50	49	10	10	9	5.75	8.17
9 Use program performance review for continuous improvement.	48	10	9.25	8.50	6.50	8.00	46	9	9	8.00	6.50	7.67
10 Encourage faculty members to be creative.	53	10	10	9	7.75	8.83	47	10	9.25	7.50	6.75	7.83
11 All concerned contribute to reach the vision.	50	10	9.25	9	7.25	8.83	47	9	9	8.50	6.50	7.83
12 Share knowledge between team members.	53	10	10	10	7.25	8.83	50	10	10	9	6.50	8.33

Items	Utility						Usability					
	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean
13 Encourage faculty members to be innovators.	51	10	10	9	7.25	8.50	48	10	9.25	9	5.75	8.00
14 Student and stakeholder dissatisfaction is promptly solved.	49	10	9.25	8.50	7.25	8.17	44	10	9.25	7.50	5.00	7.33
15 Encourage communities to develop program's values.	45	9	9	7.50	6.50	7.50	44	9	9	7.50	5.75	7.33
1.3 Output Variables												
1 Teaching and learning plans relate to the curriculum.	53	10	10	9.50	7.50	8.83	52	10	10	9.50	6.75	8.67
2 Program leaders serve as role models through their competencies.	52	10	10	9	7.50	8.67	47	9	9	8.00	6.75	7.83
3 Program leaders serve as role models through their ethical behaviour.	53	10	10	9.50	7.50	8.83	51	10	10	8.50	7.50	8.50
4 The goals for producing graduates emphasize the excellence of the program academic.	54	10	10	9.50	7.75	9	52	10	10	9	7.00	8.67
5 Qualified human resource plans are developed.	54	10	10	9.50	7.75	9	50	10	10	8.00	7.00	8.33
6 Resources plans for strategic deployment are developed.	52	10	10	9	7.00	8.67	51	10	10	8.50	7.00	8.50
7 The goals for producing graduates are practical.	53	10	9.25	9	8.50	8.83	50	10	9.25	8.50	7.00	8.33
8 The goals for producing graduates keep faith with the stakeholders' expectations.	49	9	9	8.50	7.50	8.17	46	9	9	8.00	6.50	7.67
9 The teaching and learning plans balance market needs.	51	10	9.25	9	7.50	8.50	47	9	9	8.50	6.00	7.83
10 The goals for producing graduates balance the needs of stakeholders.	50	9	9	8.50	7.75	8.33	46	9	9	8.00	6.00	7.67

Items	Utility						Usability					
	Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	52	10	10	9	7.50	8.67	50	10	10	8.50	6.75	8.33
12 Teaching and learning plans are relevant to educational business conditions.	47	10	9.25	8.00	6.00	7.83	46	9	9	8.00	6.00	7.67
13 The number of functional departments is assessed.	49	10	10	8.50	6.50	8.17	46	10	9.25	8.00	5.75	7.67
14 The number of functional departments is accredited.	50	9	9	9	7.50	8.33	47	9	9	8.50	6.00	7.83
15 Obtain an annual increase in the number of applicants.	52	10	9.25	8.50	8.00	8.67	49	10	9.25	8.00	7.50	8.17
16 Decrease the ratio of resource usage.	40	8	8.00	7.50	4.75	6.67	32	8	8.00	6.00	5.00	6.40
17 Evidence that leader promptly solves program complaints.	48	10	9.25	8.50	6.50	8.00	46	10	9.25	8.00	5.75	7.67
18 Reporting the proportion of fully deployed action plans / activities provided to service communities.	49	10	9.25	9	7.00	8.17	48	10	10	9	5.50	8.00
19 Reporting the proportion of fully deployed action plans / activities provided to preserve of art and culture.	53	10	10	9.50	7.50	8.83	54	10	10	9.50	7.75	9
2 Learning-centred Education												
2.1 Input Variables												
1 Curriculum objectives relate to the curriculum's philosophy.	54	10	10	9	8.50	9	53	10	10	9	7.75	8.83
2 Curriculum structure meets standard criteria.	56	10	10	9.50	8.75	9.33	54	10	10	9	8.00	9

Items	Utility						Usability					
	Sum	Q₄	Q₃	Q₂	Q₁	Mean	Sum	Q₄	Q₃	Q₂	Q₁	Mean
3 Curriculum philosophy relates to the program's vision.	53	10	10	8.50	8.00	8.83	52	10	10	8.50	7.75	8.67
4 Curriculum structure supports curriculum objectives.	54	10	10	9	8.50	9	54	10	10	9	8.50	9
5 Curriculum is appropriately designed to develop students' research competencies.	56	10	10	9.50	8.75	9.33	55	10	10	9.50	8.00	9.17
6 The number of faculty with higher degrees meets the standard criteria.	52	10	10	9	8.00	8.67	51	10	9.25	9	8.00	8.50
7 There is an acceptable system for evaluating student performance.	50	10	10	9	6.00	8.33	50	10	10	9	6.00	8.33
8 Curriculum goals are problem-solving oriented.	51	10	10	8.50	7.50	8.50	50	10	10	8.50	6.75	8.33
9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	54	10	10	9.50	8.25	9	52	10	10	9	7.50	8.67
10 There is an advisory system that is practicable in promoting all dimensions of student development.	52	10	10	9.50	7.25	8.67	51	10	10	9.50	6.50	8.50
11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	52	10	10	8.50	7.75	8.67	51	10	10	8.00	7.75	8.50
12 Curriculum is well-designed for developing students having competencies for profession.	54	10	10	9	8.00	9	55	10	10	9.50	8.00	9.17
13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	52	10	10	9	7.50	8.67	50	10	9.25	8.50	7.50	8.33

Items	Utility						Usability					
	Sum	Q₄	Q₃	Q₂	Q₁	Mean	Sum	Q₄	Q₃	Q₂	Q₁	Mean
14 There are appropriate regulations for the masters program in educational administration covering the progression of students from admission to award.	54	10	10	9	8.00	9	53	10	10	8.50	8.00	8.83
15 Curriculum goals balance students' needs.	52	10	10	9	7.50	8.67	52	10	10	9	7.50	8.67
16 There are sufficient elective subjects provided to meet students' needs.	53	10	10	9	7.75	8.83	52	10	10	8.50	7.75	8.67
17 Curriculum objectives relate to public policy.	50	10	10	9	6.00	8.33	51	10	10	9.50	6.00	8.50
18 Curriculum goals focus on a various assessment approach.	49	10	9.25	8.00	7.50	8.17	47	10	8.50	8.00	6.75	7.83
19 There is an acceptable system for monitoring student progress.	49	10	10	8.00	7.25	8.17	47	10	9.25	8.00	6.50	7.83
20 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.	49	10	10	8.50	6.50	8.17	49	10	10	9	5.75	8.17
21 There is a sufficient amount of appropriate physical resources.	53	10	10	9	8.25	8.83	52	10	10	9	7.50	8.67
2.2 Process Variables												
1 Faculties teach in areas that are directly related to their field of specialisation.	55	10	10	9.50	8.50	9.17	55	10	10	10	7.75	9.17
2 Teaching and learning process is research-oriented in its focus.	51	10	10	9	7.25	8.50	51	10	10	9	7.25	8.50
3 Encourage good interactions with students.	54	10	10	9.50	7.75	9	52	10	10	9	7.50	8.67

Items	Utility						Usability					
	Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
4 Provide opportunities for all concerns about curriculum content development to be heard.	53	10	10	9.50	7.50	8.83	52	10	10	9	7.50	8.67
5 Use systematically authentic evaluation approaches.	53	10	10	9.50	8.00	8.83	52	10	10	9.50	7.25	8.67
6 Provide student with opportunities to select their subjects based on their interests.	52	10	10	9	7.50	8.67	51	10	10	9	7.25	8.50
7 Set high expectations for all students.	52	10	10	9	7.50	8.67	49	10	9.25	8.50	7.25	8.17
8 Set appropriate criteria and standards for all students.	54	10	10	9	8.00	9	50	10	9.25	8.50	7.50	8.33
2.3 Output Variables												
1 Students report that they are satisfied with the faculties' teaching and learning process.	52	10	10	9	7.50	8.67	50	10	10	9	6.50	8.33
2 Develop a high level of competency in skills of problem-solving amongst the students.	52	10	10	9	7.50	8.67	51	10	10	9	7.25	8.50
3 Develop a high level of competency amongst the students in the use of information and computer technology.	55	10	10	9	8.75	9.17	51	10	10	9	6.75	8.50
4 Use appropriate technologies in the teaching and learning process.	53	10	10	9	7.75	8.83	52	10	10	9	7.50	8.67
5 Use formative assessment and evaluation approaches in teaching and learning process.	56	10	10	9.50	8.75	9.33	53	10	10	9.50	7.50	8.83
6 Curriculum content is continuously developed.	56	10	10	10	8.50	9.33	53	10	10	9.50	7.50	8.83

Items	Utility						Usability					
	Sum	Q₄	Q₃	Q₂	Q₁	Mean	Sum	Q₄	Q₃	Q₂	Q₁	Mean
7 The proportions of students' papers, research articles are published in national and international academic journals.	49	10	10	8.50	6.50	8.17	46	10	10	8.50	5.25	7.67
8 Per cent of students who graduate within expected time.	54	10	10	9	8.50	9	52	10	10	8.50	7.75	8.67
9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	52	10	10	8.50	7.75	8.67	48	10	10	8.00	6.00	8.00
10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	52	10	10	9	7.50	8.67	49	10	10	8.50	7.00	8.17
11 Per cent of students report that the grading and assessing process allowed them to actually demonstrate what they knew.	52	10	10	9	7.50	8.67	49	10	10	9	5.75	8.17
3 Organisat - ional and Personal Learning												
3.1 Input Variables												
1 There is sufficient resource, technology availability for organisation and personal learning.	53	10	9.25	9	8.00	8.83	50	10	9.25	8.50	7.50	8.33

	Items	Utility						Usability					
		Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
2	There is sufficient validated information to indicate whether or not learning is taking place.	42	10	9.50	9	7.00	8.40	40	9	9	9	6.50	8.00
3	There are validated processes designed to track progress on strategic goals.	52	10	9.25	9	7.75	8.67	48	9	9	8.50	7.25	8.00
4	The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.	43	10	9.50	9	7.50	8.60	38	9	9	8.00	6.00	7.60
3.2	**Process Variables**												
1	Promoting faculty members to create ideas for organisation performance improvement.	51	10	9.25	9	7.50	8.50	51	10	10	9	7.25	8.50
2	Provide opportunities to faculty members for continuous performance improvement.	50	9	9	9	7.50	8.33	47	10	9.25	8.00	6.50	7.83
3	Reinforce the learning environment for students.	54	10	9.25	9	8.75	9	54	10	10	9	8.00	9
4	Reinforce the learning environment for faculty members performance improvement.	50	10	9.25	8.50	7.50	8.33	50	10	9.25	9	6.75	8.33
5	Using education and training needs information in the design of training and further educating.	51	10	9.25	9	8.00	8.50	50	10	9.25	9	7.25	8.33
6	Reinforce the learning environment for stakeholders.	48	10	9.25	8.50	6.50	8.00	47	10	9.25	8.50	5.75	7.83
3.3	**Output Variables**												

	Items	Utility						Usability					
		Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
1	Evidence that leaders use teaching and learning assessment to improve the program's performance results.	51	10	9.25	9	7.51	8.50	48	9	9	8.50	6.75	8.00
2	Evidence that faculty use teaching and learning assessment to improve their competencies.	50	10	9.25	9	6.75	8.33	48	9	9	9	6.00	8.00
3	Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.	49	10	9.25	9	6.50	8.17	48	10	9.25	9	5.75	8.00
4	Evidence that there is program leaders focuses on solving faculty members problems at their source.	50	10	9.25	8.50	7.50	8.33	41	9	8.25	6.50	5.75	6.83
5	Evidence that faculty use teaching and learning assessment to improve students' performance.	50	10	9.25	9	7.25	8.33	47	9	9	8.50	6.50	7.83
6	Faculty members improve their performance as a result of their working experiences.	38	9	8.50	8.00	6.50	7.60	33	8	7.50	7.00	5.50	6.60
7	There are indicators of the proportion of attendance at seminars and discussions aimed at knowledge sharing.	46	9	9	8.00	6.00	7.67	46	9	9	8.50	5.75	7.67

Items		Utility						Usability					
		Sum	Q₄	Q₃	Q₂	Q₁	Mean	Sum	Q₄	Q₃	Q₂	Q₁	Mean
8	The per cent of faculty members reports that they have opportunities for educating, training, continuing growth, or practicing new skills.	39	10	9.50	8.00	6.00	7.80	36	9	8.50	8.00	5.50	7.20
9	The nature and type, and the amount of researches in teaching and learning development are undertaken.	51	10	10	9.50	6.51	8.50	48	10	10	9	5.50	8.00
10	The proportion of research finding that affected a major change in the program.	49	9	9	9	7.25	8.17	42	9	8.25	7.50	5.50	7.00
11	The proportion of innovation finding that affected a major change in the program.	49	10	10	8.50	6.50	8.17	43	10	8.50	7.50	5.50	7.17
12	Evidence of there is strong alumni support.	49	10	9.25	8.50	7.25	8.17	47	10	9.25	8.50	6.25	7.83
13	Evidence of there is strong stakeholder support.	48	10	9.25	8.00	7.25	8.00	44	10	9.25	7.50	5.50	7.33
14	Evidence that learning driven by opportunities to effect significant and meaningful change.	46	10	9.25	8.00	5.75	7.67	45	10	9.25	8.00	5.50	7.50
4	**Valuing Faculty, Staff, and Partners**												
4.1	**Input Variables**												
1	There is adequate funding for supporting the research.	54	10	10	9	8.50	9	48	10	10	8.00	6.50	8.00
2	There is a validated faculty members performance evaluation approach.	52	10	10	9	7.50	8.67	47	10	10	8.50	5.50	7.83

	Items	Utility						Usability					
		Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean
3	There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	52	10	10	9	7.50	8.67	48	10	10	8.50	6.25	8.00
4	There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	53	10	10	9	8.25	8.83	47	10	10	8.00	6.25	7.83
5	There is adequate funding for supporting the innovation project.	52	10	10	9	8.00	8.67	48	10	10	8.50	6.25	8.00
6	There is evidence of the evaluation of the progress of internal and external partnerships deigned to assist in adapting to new conditions.	48	10	9.25	9	5.75	8.00	47	10	10	8.50	5.50	7.83
4.2	**Process Variables**												
1.	Use faculty members performance evaluation as measures of their performance.	50	10	10	9	6.00	8.33	49	10	10	9	5.75	8.17
2.	Implement human resources plan.	51	10	9.25	9	7.50	8.50	45	9	9	8.50	5.50	7.50
3.	Use decentralization and empowerment to assist in the overcoming of problems.	52	10	10	9	8.00	8.67	46	10	9.25	8.50	5.50	7.67
4	Use needs assessment to create a learning culture.	49	9	9	9	7.25	8.17	45	9	9	8.00	6.25	7.50

	Items	Utility						Usability					
		Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean	Sum	Q$_4$	Q$_3$	Q$_2$	Q$_1$	Mean
5	Use faculty members satisfactions to continuous improve their performance.	50	9	9	9	7.50	8.33	44	9	8.25	8.00	5.75	7.33
6	Work to identify high-potential individuals to fill key positions in the future.	46	10	9.25	9	6.00	8.17	45	10	9.25	8.00	5.50	7.50
7	Promptly solve faculty members dissatisfaction.	49	10	9.25	8.50	7.25	8.17	46	10	10	8.00	5.50	7.67
4.3 Output Variables													
1	Research innovation supported by internal grants.	49	10	9.25	9	6.50	8.17	46	10	9.25	8.00	6.25	7.67
2	Research innovation supported by external grants.	51	10	10	9	7.25	8.50	46	10	10	8.00	6.10	7.67
3	Strategic plans are developed by all concerned.	53	10	10	9	8.25	8.83	49	10	10	8.50	6.50	8.17
4	Evidence that program leaders motivate faculty members developing and utilizing their full potential.	51	10	9.25	9	7.50	8.50	48	10	9.25	8.50	6.50	8.00
5	There is faculty members development activities organized for research embarking.	51	10	9.25	9	7.50	8.50	46	10	9.25	8.00	5.75	7.67
6	The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.	49	10	10	9.50	5.50	8.17	45	10	10	8.00	5.25	7.50
7	Evidence of responding to improve students' educational needs in a timely manner.	50	10	9	9	7.50	8.33	47	9	9	8.00	6.75	7.83
8	Evidence that program leaders make efforts to conduct performance excellences.	52	10	9.25	8.50	8.00	8.67	49	9	9	8.00	7.75	8.17

Items	Utility						Usability					
	Sum	Q4	Q3	Q2	Q1	Mean	Sum	Q4	Q3	Q2	Q1	Mean
9 Evidence of faculty response to improve students' learning performance in a timely manner.	49	10	9.25	9	6.50	8.17	47	10	9.25	8.50	6.25	7.83
10 Evidence of responding to program's improving performance in a timely manner.	49	10	9.25	9	6.00	8.17	48	10	9.25	9	5.75	8.00
11 The proportion of the cooperation among senior leaders, faculty, and staff is success.	49	10	9.25	8.50	6.75	8.17	45	10	9.25	7.00	6.00	7.50
12 There is faculty members development activities organized for innovation creating.	48	10	9.25	8.00	6.75	8.00	46	10	8.50	7.50	6.75	7.67
13 The number of faculty members is other organization consultant.	45	10	9.25	8.00	5.00	7.50	42	9	9	8.00	4.00	7.00
14 The proportion of faculty members is invited to be self-studied / thesis advisors.	49	10	8.50	8.00	7.75	8.17	50	10	9.25	8.00	7.75	8.33
15 Evidence of responding to program's process improves in a timely manner.	49	10	9.25	8.50	7.25	8.17	48	10	9.25	8.50	6.50	8.00
16 The number of books produces by faculty.	45	10	9.25	8.00	5.50	7.50	39	9	7.50	6.50	5.50	6.50
17 The proportion of faculty members is invited to be members of examiner committees in other Masters level institutes.	49	10	9.25	8.50	7.25	8.17	48	9	9.25	8.50	6.50	8.00
18 The proportion of faculty members is invited to teach Masters Level class in other Masters Degree institutes.	48	10	9.25	8.50	7.00	8.00	47	10	9.25	8.50	6.75	7.83
19 The proportion of faculty members is co-researchers with external organisations.	49	10	10	8.50	7.00	8.17	43	9	8.25	8.00	6.00	7.17

Items		Utility						Usability					
		Sum	Q_4	Q_3	Q_2	Q_1	Mean	Sum	Q_4	Q_3	Q_2	Q_1	Mean
20	The proportion of faculty members formally presents academic output in the area of educational administration.	49	10	10	8.50	6.50	8.17	44	9	9	7.50	6.25	7.33
21	The proportion of the joint ventures with stakeholders and potential contributors is success.	45	9	9	8.00	5.75	7.50	44	9	9	8.00	5.50	7.33

TABLE A 13   THE SINGLE ROUND SURVEY RESULTS FOR COMPOSITE INDICATORS: UTILITY AND USABILITY ASPECTS

Composite Indicators	Utility					Usability				
	Group Responses			Six Experts Responses		Group Responses			Six Experts Responses	
	Sum	Median	Mean	Median	Mean	Sum	Median	Mean	Median	Mean
1 Visionary Leadership	263	9	8.77	9	9	227	8.00	7.57	8.00	8.17
2 Learning-centred Education	262	9	8.73	8.50	8.67	229	8.00	7.63	8.50	8.33
3 Organisational and Personal Learning	260	9	8.67	8.50	8.67	219	7.00	7.30	8.00	8.17
4 Valuing Faculty, Staff and Partners	267	9	8.90	9.50	9.17	220	7.00	7.33	9	8.67

**TABLE A14   THE SINGLE-ROUND SURVEY – THE SECOND EXPERT PANEL
QUESTIONNAIRE RESULTS – THE BEST COMPOSITE
INDICATORS AND THEIR VARIABLES: UTILITY ASPECT**

Each item is ordered by the mean score.

Rank	Items	Group Responses			Six Experts Responses		Weighted Scores (%)
		Sum	Median	Mean	Median	Mean	
	1 Valuing Faculty, Staff and Partners						**25.38**
	1.1 Input Variables						**16.90**
1	1 There is adequate funding for supporting the research.	284	9	8.35	9	9	8.51
2	4 There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.	280	9	8.24	9	8.83	8.39
	1.2 Process Variables						**8.48**
1	1 Use faculty members performance evaluation as measures of their performance.	283	9	8.58	9	8.33	8.48
	2 Visionary Leadership						**25.00**
	2.1 Input Variables						**3.29**
1	1 There is sufficient program resources information available.	288	9	8.47	9	8.67	1.67
2	3 There is sufficient faculty members competency data available.	280	8.5	8.24	9	8.33	1.62
	2.2 Process Variables						**6.62**
1	3 Use qualified systematic performance evaluation approach.	290	9	8.53	9.50	8.83	1.68
2	4 Set strategic plans in order to the aims set.	287	9	8.44	9.50	8.83	1.66
3	1 Use quality assurance information for continuous performance improvement.	282	8.5	8.29	9.50	8.50	1.63
4	2 Student and stakeholder satisfaction is used for continuous performance improvement.	282	9	8.29	10	8.83	1.63
	2.3 Output Variables						**15.09**
1	3 Program leaders serve as role models through their ethical behaviour.	303	9	8.91	9.50	8.83	1.76

Rank	Items	Group Responses			Six Experts Responses		Weighted Scores (%)
		Sum	Median	Mean	Median	Mean	
2	2 Program leaders serve as role models through their competencies.	290	9	8.79	9	8.67	1.68
3	4 The goals for producing graduates emphasize the excellence of the program academic.	297	9	8.74	9.50	9	1.72
4	1 Teaching and learning plans relate to the curriculum.	296	9	8.70	9.50	8.83	1.72
5	6 Resources plans for strategic deployment are developed.	286	9	8.41	9	8.67	1.66
6	9 The teaching and learning plans balance market needs.	286	9	8.41	9	8.50	1.66
7	5 Qualified human resource plans are developed.	285	9	8.38	9.50	9	1.65
8	11 Teaching and learning plans are updated to change, such as, for changes in technology and in economies.	281	9	8.26	9	8.67	1.63
9	7 The goals for producing graduates are practical.	279	8.5	8.21	9	8.83	1.62
	3 Learning-Centred Education						**24.90**
	3.1 Input Variables						**13.34**
1	1 Curriculum objectives relate to the curriculum's philosophy.	307	10	9.30	9	9	0.82
2	5 Curriculum is appropriately designed to develop students' research competencies.	307	9	9.03	9.50	9.33	0.82
3	3 Curriculum philosophy relates to the program's vision.	297	9	9	8.50	8.83	0.80
4	4 Curriculum structure supports curriculum objectives.	306	9	9	9	9	0.82
5	8 Curriculum goals are problem-solving oriented.	300	9	8.82	8.50	8.50	0.80
6	6 The number of faculty with higher degrees meets the standard criteria.	299	9	8.79	9	8.67	0.80
7	2 Curriculum structure meets standard criteria.	298	9	8.76	9.50	9.33	0.80
8	10 There is an advisory system that is practicable in promoting all dimensions of student development.	296	9	8.70	9.50	8.67	0.79

Rank	Items	Group Responses			Six Experts Responses		Weighted Scores (%)
		Sum	Median	Mean	Median	Mean	
9	12 Curriculum is well-designed for developing students having competencies for profession.	294	9	8.65	9	9	0.79
10	13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.	294	9	8.65	9	8.67	0.79
11	14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.	284	9	8.61	9	9	0.76
12	11 Curriculum is appropriately designed to develop students to be excellent academic leaders.	290	9	8.53	8.50	8.67	0.78
13	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	286	9	8.41	9.50	9	0.77
14	7 There is an acceptable system for evaluating student performance.	284	9	8.35	9	8.33	0.76
15	16 There are sufficient elective subjects provided to meet students' needs.	283	8.5	8.32	9	8.83	0.76
16	15 Curriculum goals balance students' needs.	273	9	8.27	9	8.67	0.73
17	17 Curriculum objectives relate to public policy.	279	8	8.21	9	8.33	0.75
	3.2 Process Variables						**4.66**
1	1 Faculties teach in areas that are directly related to their field of specialisation.	304	9	8.94	9.50	9.17	0.81
2	3 Encourage good interactions with students.	295	9	8.68	9.50	9	0.79
3	8 Set appropriate criteria and standards for all students.	281	9	8.52	9	9	0.75
4	4 Provide opportunities for all concerns about curriculum content development to be heard.	287	9	8.44	9.50	8.83	0.77
5	5 Use systematically authentic evaluation approaches.	287	9	8.44	9.50	8.83	0.77
6	2 Teaching and learning process is research-oriented in its focus.	285	9	8.38	9	8.50	0.76

Rank	Items	Group Responses			Six Experts Responses		Weighted Scores (%)
		Sum	Median	Mean	Median	Mean	
	3.3 Output Variables						**6.90**
1	3 Develop a high level of competency amongst the students in the use of information and computer technology.	297	9	8.74	9	9.17	0.80
2	6 Curriculum content is continuously developed.	297	9	8.74	10	9.33	0.80
3	5 Use formative assessment and evaluation approaches in teaching and learning process.	287	9	8.44	9.50	9.33	0.77
4	4 Use appropriate technologies in the teaching and learning process.	286	8	8.41	9	8.83	0.77
5	2 Develop a high level of competency in skills of problem-solving amongst the students.	277	9	8.39	9	8.67	0.74
6	10 Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and /or in further learning.	285	8	8.38	9	8.67	0.76
7	8 Per cent of students who graduate within expected time.	283	9	8.32	9	9	0.76
8	1 Students report that they are satisfied with the faculties' teaching and learning process.	282	8	8.29	9	8.67	0.76
9	9 Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.	281	8	8.26	8.50	8.67	0.75
	4 Organisational and Personal Learning						**24.71**
	4.1 Input Variables						**5.40**
1	1 There is sufficient resource, technology availability for organisation and personal learning.	273	8	8.27	9	8.83	2.70
2	3 There are validated processes designed to track progress on strategic goals.	273	8	8.27	9	8.67	2.70

Rank	Items	Group Responses			Six Experts Responses		Weighted Scores (%)
		Sum	Median	Mean	Median	Mean	
	4.2 Process Variables						**11.00**
1	3 Reinforce the learning environment for students.	290	8.5	8.53	9	9	2.87
2	4 Reinforce the learning environment for faculty members performance improvement.	284	8.5	8.35	8.50	8.33	2.81
3	1 Promoting faculty members to create ideas for organisation performance improvement.	274	9	8.30	9	8.50	2.71
4	2 Provide opportunities to faculty members for continuous performance improvement.	264	8.5	8.25	9	8.33	2.61
	4.3 Output Variables						**8.31**
1	2 Evidence that faculty use teaching and learning assessment to improve their competencies.	281	9	8.26	9	8.33	2.78
2	5 Evidence that faculty use teaching and learning assessment to improve students' performance.	280	8	8.24	9	8.33	2.77
3	1 Evidence that leaders use teaching and learning assessment to improve the program's performance results.	279	8.5	8.21	9	8.50	2.76

Each item is ordered by the mean score.

Rank	Items	Group Responses			Six Experts Responses		Weighted Scores (%)
		Sum	Median	Mean	Median	Mean	
	1 Visionary Leadership						**49.78**
	1.3 Output Variables						**49.78**
1	3 Program leaders serve as role models through their ethical behaviour.	282	8	8.29	8.50	8.50	49.78
	2 Learning-Centred Education						**50.22**
	2.1 Input Variables						**43.26**
1	2 Curriculum structure meets standard criteria.	290	9	8.79	9	9	7.23
2	6 The number of faculty with higher degrees meets the standard criteria.	293	9	8.62	9	8.50	7.31
3	4 Curriculum structure supports curriculum objectives.	291	9	8.56	9	9	7.26
4	3 Curriculum philosophy relates to the program's vision.	289	9	8.50	8.50	8.67	7.21
5	7 There is an acceptable system for evaluating student performance.	286	9	8.41	9	8.33	7.13
6	9 Faculty has knowledgeable in student-centred approach for teaching and learning process.	285	9	8.38	9.50	8.50	7.11
	2.2 Process Variables						**6.96**
1	3 Encourage good interactions with students.	279	8	8.21	9	8.67	6.96

TABLE A16   SUMMARY OF SIX RESPONSES TO SEMI-STRUCTURED INTERVIEWS

Participants	The Six Participants' Semi-Structured Interview Comments
Mr. A	The program should concern in curriculum development; a well-designed program curriculum with quality internal assessment process would bring quality of graduates and quality management of the program. The program should concern and try to meet all stakeholders and market expectations. The feedbacks information from program alumni could be used to point out how program will be improved and how program curriculum should be developed. Curriculum nowadays should concern the educational profession standards, which consist of standards of professional knowledge and experience, standards of performance, and standard of conduct that have been announced in the Teachers Council of Thailand Regulation on Professional Standards and Ethics B.E. 2548 (2005) that influence content description, their syllabi and sequence of subjects. All subjects which are taught in a Masters Degree program in Educational Administration curriculum have to focus on students for research practicum which can develop students' research knowledge and skills, as well as prepare student capabilities and competencies for future career path according to the law. Program leaders should manage its program focusing on know-what, and know-why aspects of education, as well as having quality process for program personnel selection. Program leaders should have managerial knowledgeable, having the degrees required and have knowledge in educational administrative principles, can do the research and / or be research supervisors, as well as, should understand and know how to make significant change to improve their program; while having effective assessment process throughout the organization.
Mr. B	Effective program has to priority concern the needs of students and try to meet all students' needs and expectations. These concerns will shape program education management process. All stakeholders have their own expectations and program leaders should find out in order to balance education services for all of them. Faculty should be qualified; qualified faculty is a must for an effective for Masters Degree program in Educational Administration in private institutions in Thailand. Program curriculum should also be developed by all concerns in order to ensure that its curriculum is well-designed and met all stakeholders' expectations. Developed curriculum contents should also be separated into three parts; firstly, should be text-based learning; secondly, is work-based learning; and thirdly, is seminar-based learning in order to produce qualified graduates and students could graduate within their expected time. Program faculty should encourage their students in order to use their work-place problem and /or their real interest concerns be their independent study or thesis topics. Visionary leadership should base on leaders' capacities on managing program under changed and dynamic conditions, as well as, always focus primarily on students' expectations.
Mr. C	Program faculty should encourage their students to enhance their research knowledge and skills; important strategy has to be concerned is to encourage faculty do research with their students. These are benefits not only for becoming research well-recognized program, increasing the faculty capacities, and bringing close relationship with their students; but also for increasing research knowledge and skills to students to do their own researches for their workplaces, their theses or independent studies, including are benefits for their further studying for higher degree. The effective curriculum should also be up-dated and be examining it in a timely manner according to all significant changes. The whole process for curriculum management consists of how program leaders understanding of all subjects contents regarding to in what students should know and should be able to do, as well as, who should teach for that subject; all program resources should be available and ready to support at any time according to planned schedule. Authentic assessment should be concerned in order to continuous improve for teaching and learning process and ensure that subject objectives are achieved. Program leaders should provide student opportunities to inform their problems occurred or any responses or feedback that

Participants	The Six Participants' Semi-Structured Interview Comments
	they want to tell program leaders to immediately solve for all their problems, therefore, well –interaction with students are needed. Program leaders should tell the truth to their students and promise in what they can really provide to their students for student royalty and create program well-image. Number of student has to match the capabilities of the program and its faculty to take care and fit for efficient and effective class size. In addition, program should also support all program's faculty to do the research, especially collaborate with their students to do the research which not only improving their teaching capabilities, but also they can increase research capabilities. All subjects are also taught by qualified faculty and have research work each subject. Faculty should always be developed, especially can do the research; an evident indicates the program effectiveness are the feedbacks information from program alumni or feedbacks from students during and after their class in order to improve quality of teaching and learning process, and faculty uses their research findings for their teaching and learning process to add value to students; program leaders should intensively take care of these find-outs. Outstanding alumni should be proclaimed prestige after many years of successful life. The applicants need a program that program personnel always takes care of them, they have happily for campus life, program has qualified faculty with quality management process, students can practicum and have opportunities to apply for their knowledge and skills, and they can graduate within expected time. Therefore, how to create the program to become well known / well recognition is very important, especially for the new program of the new private higher education institutions in Thailand.
Mr. D	Program not only has qualified domestic and foreign faculty, but also always concerns program alumni and stakeholders' feedbacks and / or their information provided as these are the most importance input factors to the effectiveness of the program. The new era of education needs new body of knowledge; therefore effective program not only has qualified selection process, but also has strategic plan for developing their faculty and staff in order to make sure that program has qualified personnel. The effective program has to produce graduates with abilities to think and do the right thing, rethink and re-doing for the right thing. The main importance of the program objectives is 'how the process is performed' because of quality of process can produce quality outputs or quality graduates. The success of the program depends on its faculty and two- ways to assess them and use this assessment results for teaching and learning process improvement and satisfying the students. Program policy should be clear and practicable and focus on students (student-centred). In addition, program leader should also support and encourage faculty do the research and add their research experiences and research findings in their teaching and learning process. The research findings should be benefits both for the program and its community. Moreover, curriculum must be developed by all concerns and covered all disciplines that graduates should know, while can produce graduates with all their competencies needed for their workplace and-or further learning focusing on problem-solving oriented that could be effectively applied for the real situation. The most importance to indicate how program are effectiveness or not is feedbacks from students and all stakeholders concerned, therefore the program should have an effective department handle this concerns. The findings will provide valuable information for program leader to set for priorities improvement.
Mr. E	The most important factor of the effective Masters Degree program in Educational Administration in private higher education institutions in Thailand is that the program has qualified, and be professional faculty and performed ethics of teaching as they will be enthusiasm and willingness to response for their roles of teaching and are responsibilities to their students. Moreover, the two successive essential factors are that program has well-designed curriculum and sufficient supporting resources. Successive factors which are also influenced to a program consist of environmental for learning; program leaders and program faculty and their existing

Participants	The Six Participants' Semi-Structured Interview Comments
	researches; teaching and learning process and quality of the assessment process and existing researches related; and also, curriculum has to be develop at regular interval; present curriculum structure is well-designed related to Commission on higher education standard criteria. In addition, program leaders should aware how to conduct program curriculum; these need program leaders who has knowledge ability; and understand their roles and responsibilities; the curriculum has to be completely used in teaching and learning process; moreover, program should provide clearly policy that is supported by its institution senior administrators. In curriculum management, program leaders should have widely visions and have holistic views of the management process suitably to program currently conditions. Therefore, program leaders are the most importance in all management process and create program and university recognitions.
Mr. F	Student needs and expectations are important information for effective of a Masters Degree program in Educational Administration as program should try to serve for these different needs and expectations of the different backgrounds of its students. All concerns should also be involved in curriculum development process in order to ensure that program curriculum is well-designed and covered all knowledge and students' competencies needed. It is benefits not only for being responsive to academic and professional needs; but also using it to create quality lesson plans, and course syllabi, select / hire / develop for qualified faculty, as well as, providing instructional materials and medias; planning how to evaluate teaching and learning process; and assessing faculty performance to ensure quality and effectiveness of the instruction. In addition, the effectiveness of the program can also be evaluated by evaluating program system for allocating resources, analysing expenditure and auditing budget spending; its personnel and quality of their researches and/ or publications; and visionary leadership. Program leaders should support and encourage faculty to do the research and write quality publications to publishing, and also, program academic services to the community should focus on providing its research findings to be heard and / or could be for further developed. In addition, management team, program curriculum, and its full –time and part-time faculty should be accepted and recognized by all concerns as it is very influenced for applicants decision-making to enrol the program. Moreover, program leaders must develop relationship with all related partnerships in order to strengthen its program to better accomplish overall goals.

TABLE A17   ESSENTIAL INDICATORS AND THEIR VARIABLES

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1   Visionary Leadership

1.1   Input variables

1.1.1   There is sufficient program resources information available.
1.1.2   There is sufficient appropriate students' needs information available.
1.1.3   There is sufficient faculty members competency information available.
1.1.4   There is sufficient stakeholders' needs information available.

1.2   Process variables

1.2.1   Use quality assurance information for continuous performance improvement.
1.2.2   Student and stakeholder satisfaction is used for continuous performance improvement.
1.2.3   Use qualified systematic performance evaluation approach.
1.2.4   Set strategic plans in order to achieve the aims set.
1.2.5   Reform organisation using qualified management approaches.
1.2.6   Encourage faculty members to develop and learn.
1.2.7   All concerned are involved in vision development.
1.2.8   Focus on participative management.
1.2.9   Use program performance review for continuous improvement.
1.2.10   Encourage faculty members to be creative.
1.2.11   All concerned contribute to reach the vision.
1.2.12   Share knowledge between team members.
1.2.13   Encourage faculty members to be innovators.
1.2.14   Student and stakeholder dissatisfaction is promptly solved.

1.3   Output variables

1.3.1   Teaching and learning plans relate to the curriculum.
1.3.2   Program leaders serve as role models through their competencies.
1.3.3   Program leaders serve as role models through their ethical behaviour.
1.3.4   The goals for producing graduates emphasize the excellence of the program academic.
1.3.5   Qualified human resource plans are developed.
1.3.6   Resources plans for strategic deployment are developed.
1.3.7   The goals for producing graduates are practical.
1.3.8   The goals for producing graduates keep faith with the stakeholders' expectations.
1.3.9   The teaching and learning plans balance market needs.
1.3.10   The goals for producing graduates balance the needs of stakeholders.
1.3.11   Teaching and learning plans are updated to change, such as, for changes in technology and in economies.
1.3.12   Teaching and learning plans are relevant to educational business conditions.
1.3.13   The number of functional departments is assessed.
1.3.14   The number of functional departments is accredited.

2 Learning-centred Education

2.1 Input variables

2.1.1 Curriculum objectives relate to the curriculum's philosophy.
2.1.2 Curriculum structure meets standard criteria.
2.1.3 Curriculum philosophy relates to the program's vision.
2.1.4 Curriculum structure supports curriculum objectives.
2.1.5 Curriculum is appropriately designed to develop students' research competencies.
2.1.6 The number of faculty with higher degrees meets the standard criteria.
2.1.7 There is an acceptable system for evaluating student performance.
2.1.8 Curriculum goals are problem-solving oriented.
2.1.9 Faculty has knowledgeable in student-centred approach for teaching and learning process.
2.1.10 There is an advisory system that is practicable in promoting all dimensions of student development.
2.1.11 Curriculum is appropriately designed to develop students to be excellent academic leaders
2.1.12 Curriculum is well-designed for developing students having competencies for profession.
2.1.13 Curriculum is well-designed for assisting students to become well-rounded administrators in education.
2.1.14 There are appropriate regulations for the Masters program in educational administration covering the progression of students from admission to award.
2.1.15 Curriculum goals balance students' needs.
2.1.16 There are sufficient elective subjects provided to meet students' needs.
2.1.17 Curriculum objectives relate to public policy.
2.1.18 Curriculum goals focus on a various assessment approach.
2.1.19 There is acceptable system for monitoring student progress.
2.1.20 There are sufficient local and foreign master's degree programs in educational administration information to ensure qualified management approaches.
2.1.21 There is a sufficient amount of appropriate physical resources.

2.2 Process variables

2.2.1 Faculties teach in areas that are directly related to their field of specialization.
2.2.2 Teaching and learning process is research-oriented in its focus.
2.2.3 Encourage good interactions with students.
2.2.4 Provide opportunities for all concerned about curriculum content development to be heard.
2.2.5 Use systematically authentic evaluation approaches.
2.2.6 Provide student with opportunities to select their subjects based on their interests.
2.2.7 Set high expectations for all students.
2.2.8 Set appropriate criteria and standards for all students.

2.3   Output variables

2.3.1   Students report that they are satisfied with the faculties' teaching and learning process.

2.3.2   Develop a high level of competency in skills of problem-solving amongst the students.

2.3.3   Develop a high level of competency amongst the students in the use of information and computer technology.

2.3.4   Use appropriate technologies in the teaching and learning process.

2.3.5   Use formative assessment and evaluation approaches in teaching and learning process.

2.3.6   Curriculum content is continuously developed.

2.3.7   The proportions of students' papers, research articles are published in national and international academic journals.

2.3.8   Per cent of students who graduate within expected time.

2.3.9   Students report that they are satisfied with program building and space, environment, resources supporting for teaching and learning process.

2.3.10   Validated evidence from stakeholders demonstrating that graduates possess the knowledge, skills, leadership, and scholarship necessary for them to be effective in their workplace and/or in further learning.

2.3.11   Per cent of students report that grading and assessing process allowed them to actually demonstrate what they new.

3   Organisational and Personal Learning

3.1 Input variables

3.1.1   There is sufficient resource, technology availability for organisation and personal learning.

3.1.2   There is sufficient validated information to indicate whether or not learning is taking place.

3.1.3   There are validated processes designed to track progress on strategic goals.

3.1.4   The focus of knowledge management is on the knowledge and competencies that faculty members need for doing their work.

3.2 Process variables

3.2.1   Promoting faculty members to create ideas for organisation performance improvement.

3.2.2   Provide opportunities to faculty members for continuous performance improvement.

3.2.3   Reinforce the learning environment for students.

3.2.4   Reinforce the learning environment for faculty members performance improvement.

3.3 Output variables

3.3.1   Evidence that leaders use teaching and learning assessment to improve the program's performance results.

3.3.2   Evidence that faculty use teaching and learning assessment to improve their competencies.

3.3.3   Evidence that knowledge assets of the program, such as organisational and personal learning, and organisational cross-functional learning for performance improvement is synthesised.

4   Valuing Faculty, Staff and Partners

4.1 Input variables

4.1.1   There is adequate funding for supporting the research.
4.1.2   There is a validated faculty members performance evaluation approach.
4.1.3   There is useful documentation of staff performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.
4.1.4   There is useful documentation of faculty performance, such as job descriptions and specifications, roles, responsibilities, career path, performance criteria, evaluation process.
4.1.5   There is adequate funding for supporting the innovation project.
4.1.6   There is evidence of the evaluation of the progress of internal and external partnerships designed to assist in adapting to new conditions.

4.2 Process variable

4.2.1   Use faculty members performance evaluation as measures of their performance.
4.2.2   Implement human resources plan.
4.2.3   Use decentralisation and empowerment to assist in the overcoming of problems

4.3 Output variables

4.3.1   Research innovation supported by internal grants.
4.3.2   Research innovation supported by external grants.
4.3.3   Strategic plans are developed by all concerned.
4.3.4   Evidence that program leaders motivate faculty members developing and utilising their full potential.
4.3.5   There is faculty members development activities organised for research embarking.
4.3.6   The number of faculty papers, research papers publishes in recognized academic journals, nationally and internationally.
4.3.7   Evidence of responding to improve students' educational needs in a timely manner.
4.3.8   Evidence that program leaders make efforts to conduct performance excellences.
4.3.9   Evidence of faculty response to improve students' learning performance in a timely manner.
4.3.10   Evidence of responding to program's improving performance in a timely manner.
4.1.11   The proportion of the cooperation among senior leaders, faculty, and staff is success.