

Quality Assurance in Higher Education

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Abstract— The Quality assurance is the process of checking whether products meet customer belief. It is a process-driven approach with specific steps to help define and attain goals. Quality assurance denotes to the policies, attitudes, actions and measures fundamental to ensure that quality is being maintained and greater.[1] Aims to evaluate the institutions of higher education based on comprehensive quality standards that have been grown for each member of teaching in higher education institutions. Accreditation refers to an decision of whether an institution qualifies for a certificate status. QA in education has not been fully achieved. It is of the view that except conscious and serious effort is made to evolve environment specific technologies to deploy IT tools in educational administration, manual form for pursuing QA programmers may not yield desirable results.[2] The purpose of this paper is to determine the state of research in a review of quality assurance in higher education institutions based on a review of the academic literature.

Key words: Quality Assurance (QA), Statistical Models, Higher Education (HE), Evaluation

I. INTRODUCTION

Quality assurance is a way of dilatory blunder in achieved products and escaping problems when dropping solutions or services to customers; which ISO 9000 defines as "part of quality management focused on granted confidence that quality requirements will be fulfilled". This best halt in quality assurance changes well from defect detection and exclusion in quality control, and has been denoted to as a shift left as it focuses on quality earlier in the process.[3] The terms "quality assurance" and "quality control" are often used interchangeably to refer to ways of ensuring the quality of a service or product. For occasion, the term "assurance" is often used as follows: execution of inspection and structured testing as a scope of quality assurance in a television set software project at Philips Semiconductors is described. The term "control", however, is used to describe the fifth phase of the DMAIC model. DMAIC is a data-driven quality strategy used to improve processes. Quality assurance contains administrative and expert actions applied in a quality system so that conditions and aims for a product, service or actions will be fulfilled. It is the systematic measurement, comparison with a standard, monitoring of processes and an associated feedback loop that confers error prevention. This can be differed with quality control, which is focused on case output. Quality assurance includes two principles: "Fit for purpose" (the product should be suitable for the intended purpose); and "right first time" (mistakes should be eliminated. [4] The two principles also manifest before the background of evolving a novel technical product: The task of engineering is to make it work once, while the task of quality assurance is to make it work all the time.

II. DEFINING QUALITY ASSURANCE IN EDUCATION

Quality is often defined as the totality of features and characteristics of a service that bear on its capacity to satisfy stated or hidden needs. Quality in higher education, according to Article 11 of the World Declaration on Higher Education published by the United Nations, is a multidimensional concept, which should hold all its functions and activities: teaching and academic programmers, research and scholarship, staffing, students, buildings, faculties, equipment, services the community and the academic environment.[5] It should take the form of internal self-evaluation and outdoor review, conducted openly by independent specialists, if possible with international expertise, which are vital for enhancing quality. Independent national bodies should be customary and comparative standards of quality, accepted at international level, should be defined. Due interest should be paid to the specific institutional, national and regional contexts in order to take into account difference and to avoid uniformity there are several aspects of reputation which are important:

- It is built upon the competitive elements of quality, reliability, delivery, history and price, of which quality has become strategically the most important.
- Once a higher education institution acquires a poor reputation for quality, it takes a very long time to change it.
- Higher education reputations, good or bad, can quickly become national reputations.
- The management of the competitive weapons, such as quality, can be learned like any other skill, and used to turn round a poor reputation, in time.

A. The QA model presented in the CQAF includes four phases

- Planning (Setting Goals)
- Implementation (of actions to achieve the goals set).
- Evaluation and assessment (evaluation of programmer provision by objectives, and assessing the achieved outcomes).
- Review, e.g. the discussion of the results of quality assessments among end users, detecting causes of underperformance, and translating the conclusions into improvement actions.

B. Effect of Evaluation on Quality

Lack of community confidence and rapid boost in the participation rates, set in train a trend by the governments in the late 1980s to device ways of formally evaluating the performance of Higher Education.[6] The movement for evaluation came under the strong influence of the QA movement which was sweeping the industry at that time. Many of the terminology and practices of QA were applied to the evaluation process as well. Invariably, all funding

agencies acknowledge the need for autonomy of the institutions in order to perform effectively in their own circumstances. At the same time there is also the need for measures to evaluate the performance of the institution. Within these parameters the checking agencies tend to adopt a number of different paths to monitoring quality in higher education.[7] In general, they can all be described as forms of external scrutiny conditioned by the prevailing political scene. At the root governments around the world are looking for higher education to be more responsive, including:

- Making education more relevant to social and economic needs,
- Widening access to higher education,
- Expanding numbers, usually in the face of decreasing unit cost, and
- Ensuring comparability of provisions between institutions.

C. Data Quality Assessment (DQA) and the Data Life Cycle

The data life cycle depicted in Figure 1 composes three steps: planning, exercise, and assessment. During the planning phase, a systematic planning measure is used to define conditions for determining the number, location, and timing of samples (measurements) to be poised in order to produce a result with a chosen level of certainty.[8]

III. STANDARD MODELS

Many QA standards and models exist with a large number of choices. "There are more than 300 standards developed and maintained by more than 50 different organizations." Popular models are the ISO 9001, which specifies requirements for a quality management system within an organization and the Software Engineering Institute (SEI) Capability Maturity Model (CMM), which provides a framework for continuous software process improvement, although many others are used, depending on user goals. The key notion is that they provide guidelines for conducting audits, testing activities, and for process improvement.[9] The CMM approach classifies the maturity of the software organization and practices into five levels describing an evolutionary process from chaos to discipline:

- Level 1: Initial: The software action is characterized as ad hoc, and occasionally even chaotic. Few processes are defined, and success depends on individual effort and heroics.
- Level 2: Repeatable: Basic project management processes are established to track cost, schedule, and functionality. The necessary action discipline is in place to repeat earlier successes on projects with similar applications.
- Level 3: Defined: The software action for both management and engineering activities is documented, standardized, and integrated into a standard software process for the organization. All projects use an approved, tailored version of the organization's standard software process for developing and maintaining software.
- Level 4: Managed: Detailed measures of the software action and product quality are collected. Both the software process and products are quantitatively understood and controlled.

- Level 5: Optimizing: Continuous action improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies.

A. Modeling Techniques

The proper application of statistical techniques to data invention and analysis is of paramount importance.[10] Because the statistical techniques most useful for checking data are well known to many analysts, only several of those most frequently used will be reviewed shortly here.

1) The Arithmetic Mean

The Arithmetic Mean of a collection of a numerical values is the sum of these values divided by the number of value.

2) The Standard Deviation

There is a practical difficulty associated with using the variance that is the units in which the variance is expressed are not the same as the observations. That because the deviation have been squared.

3) The variance

The arithmetic mean of the squared deviation is called the variance.

4) Coefficient of Variation

One disadvantage of the standard deviation as a measure of variation is that it depends on the units of measurement.

B. Proposed Algorithm for Evaluation

1) Input

- DB for each college.
- Ratios used for each axis
- The performance of scientific and put his 35%.
- The efficiency of teaching by 25%.
- Educational performance by 10%.
- Personal Conduct by 20%.
- Relationship management by 10 %.

2) Output

A report for the assessment of higher education institutions.

C. Role of Higher Education in Society

Higher Education is commonly understood to cover teaching, research and delay. It is the source of feeder system in all walks of life and therefore items the much needed human resources in management, planning, design, teaching and research. Scientific and technological advancement and economic advance of a country are as dependent on the HE system as they are on the working class.[11] Development of indigenous technology and capabilities in agriculture, food security and other industrial areas are possible when there is quality HE system and base. Higher education also provides opportunity for life-long learning, allowing people to upgrade their knowledge and skills from time to time based on the societal needs.

IV. CONCLUSION

The conclusions argue there is very little research on quality management, despite quality's role growing in concern as universities strive to compete in an increasingly underfunded market for students and research funds. This paper arranges the rationale for strong quality assurance systems for higher education as a factor in complementing global interactions, and makes recommendations for countries and regions which do not yet have active systems in place. Quality is a judgment about the degree to which actions or outputs have desirable

characteristics, according to some norm or against particular specified conditions or objectives.[12] The performance of higher education institutions is a growing concern. The pressure for quality assurance poses a major challenge for higher education as in case of many evolving countries including India. While quality assurance has always been a matter of interest and significance in education, in general, and in professional education such as technical education in particular, the recent quantitative growth of an unprecedented nature, in India, has caused educators to devote careful attention to the quality aspect. National Board of Accreditation (NBA), a body under AICTE, is the only authorized body in India entrusted with the task of undertaking approval of technical education programmes. The prime command of NAAC, as considered in its Memorandum of Association, is to assess and accredit institutions of higher learning, universities and colleges or one or more of their units, i.e., departments, schools, institutions, programmes etc.

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