International Journal of Engineering Research And Advanced Technology (IJERAT)
ISSN: 2454-6135 [Volume. 02 Issue.05, May-2016]

Manipulative Strategies for Eminence Management and Organizational Quality in Technical Organization

Mr. Samir S. Deshmukh[1] , Dr.S.V.Deshmukh[2]

[1] M.E. Research Scholar, Dept. of Mechanical Engg. BDCOE, Sewagram, Wardha,

Email: [2]Principal, Suresh Deshmukh College of Engineering, Wardha,

ABSTRACT:

In organize to be a competitor in the global market; companies must study the principal examples of quality. The key to success as identified by these examples is to recognize the importance of innovation and excellence; thus, the concept of Quality Management should be the driving force behind the changes taking place within today's organizations. This paper scrutinizes the rudiments of self-assessment as a tool of Quality Management and examines its potential for achieving excellence in higher education and improving performance of higher education institutions. Organizations worldwide have been exploring ways to improve business practices to gain competitive edge. With increasing expectations of students, industry and other stakeholders, educational institutions are looking for ways to stay relevant and responsive to the demand for quality programmes, educational outcomes and services. Hence, providing the challenges, context and motivation for the journey, it demonstrates how its Model (framework) for quality management and organizational excellence, efforts and achievements will facilitate the technical educational institution in moving it closer to its vision of building a world-class technical education institution for the knowledge-based economy. In view of the above, this study was carried out. The findings of this paper are a proposed intangible model which consists of Quality Management significant achievement factors implementation and its impact of higher education institutions performance.

Keyword : *Innovation, Quality Management, Self-assessment, organizational excellence, stakeholders, technical educational institution.*

I. INTRODUCTION

Understanding and by means of management models, principles and assessment tools, in conjunction with quality concepts and tools, can facilitate ensure that commerce and other organizations survive and boom over the extensive term. The use of quality initiatives will help businesses in Document and improve processes, Understand customer requirements and ensure that their products and services meet those requirements and Streamline relationships between internal customers and suppliers and employees of the business and external customers and suppliers. However, implementing a quality initiative stops short of managing a business from a strategic, systems perspective that can be accomplished using various management models, quality award criteria, and standards. This paper proposes that organizations should use a model which integrates quality concepts and strategic management concepts into a powerful systemic structure. Quality today is the major constraint due to

'low immediate employability' of our graduates as perceived in various surveys. Hence we need to balance quality with quantity, short term goals with long-term goals to ensure that we use our inherent capabilities to be the knowledge super power for the following intrinsic strengths that we have, we are the largest democratic country with more than 65% of our population being less than 35 years of age. As a youthful nation, if we produce technical manpower of quality, which is globally employable, India could be a major talent pool for the world in 'addition to meeting its own developmental needs. By nature, we are very innovative, creative, analytic, curious and 'intelligent human resource'. We can find very innovative solutions to complex problems provided we find a purpose in it. If motivated and committed, we can be truly innovative and creative. This is a major asset in promoting innovative research and development. India had a glorious past as knowledge seekers from the world were attracted towards India-Nalanda is a case in point. We need to regain that past glory and if given right priorities to E-R-P (Education, Research & Planning) which requires intellectual capital as a resource input, we could become a major knowledge hub and R&D centre globally. Engineering colleges have to be serious in developing their own proficiency as well as must find out how to develop the professional competency in general. Since the users are more prone to on-line and electronically delivered services, the growing role of the engineering colleges would lie in counseling, training, advising students as well as other stake holders on services and information of the courses as well as quality aspects vis-à-vis various aspect of the engineering colleges. This is a time that necessitates innovative ways of thinking about services, collections, information access and also our roles as academic institutions. Being prepared to manage changes can furnish us with the ability to flourish.

II. LITERATURE REVIEW

In view of the aim and objectives of this study, a literature review was carried out to study the previous research efforts in similar and related domains. The review of the published literature was carried out using following aspects, such as the research question being posed; the theoretical background, methodology adopted, findings, conclusions, suggestions, etc. The research gaps were identified on the basis of the reviewed literature and were used for synthesizing and gaining a new perspective of the technical education and quality improvement in the different aspects related to it. The issues were reviewed with a special reference to the engineering colleges. The discussion is presented in a chronological order, so that it also indicates the underlying pattern of evolution of thoughts and ideas in that domain. Similarly, to an extent possible, care was taken to reproduce the original terminology used by the authors, to preserve the originality of the views.

The unprecedented expansion of technical education sector in India in recent years has brought many questions about the quality of education imparted. A technical education is relevant for the graduate if it meets the needs of the industry. A core set of such needs must be identified and to implement this concept in technical institutions, a number of studies were being carried out; models and strategies have been developed based on the principles of Total Quality Management. Total Quality Management (TQM) is a proven concept which is practiced in industry to establish standards to ensure the quality of products and services reach the end user. TQM is continuous

improvement in quality. TQM should be led by the management and followed by entire institution to create learning ability, immovability and sustainability campuses [1].

The unparalleled development of technical education sector in India in recent years has brought many questions about the quality of education imparted. A technical education is applicable for the graduate if it meets the needs of the industry. A core set of such needs must be notorious and to implement this concept in technical institutions, a number of studies were being carried out; models and strategies have been developed based on the principles of Total Quality Management. Total Quality Management (TQM) is a proven concept which is practiced in industry to establish standards to ensure the quality of products and services reach the end user. TQM is continuous improvement in quality. TQM should be led by the management and followed by entire institution to create learning ability, immovability and sustainability campuses [2].

There is a need for a fitting culture to support the scope of Total Quality Management (TQM). Customer focus, systems approach, solidarity, involved management and continuous enhancement are the aspects of TQM that facilitate improved organizational achievement, development & competitiveness. Many companies are now complementing continuous improvement with modernization, which is seen as the successful mistreatment of new ideas. The results of this can support substantial improvements in business performance and competitiveness of the company. The concept of corporate culture, places this social construct within the arena of TQM, and highlights the relationships that exist among culture, quality, and competitiveness using a case study [3].

the research area of critical success factors of total quality management (TQM) accomplishment in higher education institutions which has prospective to be explored and generate new knowledge, to progress the total quality management practices and outcome especially in higher education institutions. The impacts on the organization's performance and the encouraged indicators to the adoption of total quality management (TQM) in the organization study concludes the critical success factors of total quality management (TQM) and its implementation in higher education institutions.However, certain organization and institutions already indentified the benefits from TQM implementations on their organization concert and they believe this approach could give them a chance to achieving their goals. The findings of this paper are a proposed conceptual model which consists of TQM critical success factors implementation and its impact of higher education institutions presentation [4].

III. OBJECTIVES OF THE STUDY AND HYPOTHESES

Continuous improvement can be considered as the "wheel of the organizational vehicle. It is the effort produced by the wheels, which will make the vehicle move forward. Organizations in the past have been concerned with doing "more of the same" (Ashtan D, Dooney J, 1990) with disregard for customer feedback and markets demand. When performance decreases, organizations tend to double their efforts in "doing more of the same". Critical evaluation of existing quality models, Impact of accreditation on quality improvement i.e. NBA, DTE, ISO 9000,

Identifying different critical success factor (CSF) for technical institute, Evaluation of CSF for technical institute, Development of Model for designing strategies for excellence in technical institute Validation of Model by conducting case study. The hypothesis framed for the present investigation is as follows: Model / Accreditation have positive impact on quality improvement of technical institute and Quality of input factors has the positive impact on the quality of output factors

IV. METHODOLOGY

The study used a combination of evocative and investigative research design, which seeks to determine present practices or opinions (of professionals working in the engineering colleges). In the present investigation, researcher has used a structured questionnaire to seek information pertaining to the importance of quality in technical education sectors, the issues such as role of management, administration, infrastructure, facilities, etc. in the technical education.

Following section presents the information pertaining the development of research instrument, assessment of its reliability and validity. The research instrument (questionnaire) development process started with identification of the important factors (CSFs) vis-à-vis technical education. This identification was carried out with the help of critical review of the published literature. Care was taken to ensure that all the literature used was from the journals that have science citation index. The studies carried out by other authors indicated prevalence of a wide range of factors that either contribute or control the quality in technical education. The research scholar reviewed the literature related to studies performed on similar lines in Indian as well as Global context. After identifying the important factors the questionnaire development was carried out by conducting a pilot study. This was done to estimate the reliability and validity of the research instrument. Cronbach's alpha values above 0.800 indicated good internal consistency of all the scales. Accordingly, the results provide strong evidence that the developed scales are reliable. Based on the results of method suggested by Nunnally's (1967), evaluation of the assignment of items to scales was carried out. All items showed high correlations with the scales to which they were assigned relative to all other scales, indicating that the items are appropriately assigned to respective scales. The validity of a measure refers to the extent to which it measures what it was intended to measure. Three different types of validity were considered are Content validity, which depends on how well the researchers created measurement items to cover the content domain of the variable being measured. The contents of instrument (critical factors) were selected on the basis of extensive review of related literature regarding the topic under investigation. The selection of measurement items was based on an extensive review of the literature and its reliability and validity of the previous studies. A measure has construct validity if it measures the theoretical construct or trait that it was designed to measure. To be consistent, the construct validity of each critical factor measure was evaluated by factor analyzing the measurement items of each of the critical factors. The constructs showed that they measure the theoretical constructs or traits they were designed to measure. As a result, it was confirmed that the developed measure has construct validity. The criterion-related validity of the instrument was evaluated by examining the correlation coefficients between the different variables. The positive correlation coefficients obtained for all the

variables indicated that the measures had a high degree of criterion-related validity when taken together. Thus, the criterion-related validity (external validity), was found to be acceptable.

Sampling:

In the present study purposive random sampling procedure was employed. For the pilot study data was collected from 25 respondents while, for the main study 74 respondents provided that data. In the present study, self administered (administered by respondent) survey method was used to collect necessary data.

Primary Data Collection:

In present study, all the measurements were made using standard procedures. The data was collected from the professionals working in the technical education institutes. The data collection was done by using a structured questionnaire (research instrument) and by following survey method. Secondary Data Collection: The data pertaining to the importance of quality in technical education sector as well as other issues concerning was collected from the research articles, books, policy reports, internet and other relevant sources.

Statistical Analysis: The data generated during this study was analysed by using various statistical tests with the aid of statistical software SPSS 18.0. Prior to advance statistical analyses, data characteristics, such as, Frequency (relative and cumulative), Percentage, Mean, Standard deviation, etc. were determined. The inferential statistics involved tests such as reliability assessment using Cronbach's Alpha Procedure, Factor Analysis, Pearson's Correlation Coefficient analysis, Regression Analysis, etc.

Significance Level:

The significance level was chosen to be 0.05 (or equivalently, 5%) by keeping in view the consequences of such an error. That is, researcher wants to make the significance level as small as possible in order to protect the null hypothesis and to prevent, as far as possible, from inadvertently arriving at false conclusions.

V. DATA ANALYSIS AND MODEL DEVELOPMENT

In line with the objectives of this study, this chapter of the thesis presents results of the data analysis; carried out to assess the importance given by the professionals working in the engineering colleges to the quality improvement process. The results present the response of these professionals with respect to the various issues that have direct or indirect influence on the quality management and improvement. The primary data analysis using the descriptive statistics tools, such as mean (central tendency measure) and standard deviation (measure of variability) confirmed the data quality. The Cronbach's alpha values above .80 for all the items were fairly high and were found to satisfy the cut off criterion of .79. Thus, the reliability of data obtained for the main study was confirmed prior to further analysis. Factor analysis was performed to understand the degree of total variation in the collected data. Prior to factor analysis, multicollinearity was checked by determining the correlation coefficients (r2). All the correlation coefficients (r2) were observed to be less than 0.900, which showed that the data was fit for further analysis. In the present investigation, the Kaiser-Meyer-Olkin statistic was found to be above 0.600, which indicated sample adequacy for performing Factor analysis. Furthermore, for this data the Bartlett's test was highly significant ($P<0.001$), and therefore indicated a suitability of data processing following

the factor analysis procedure. Proportion of a variable's variance explained by a factor was calculated by determining the communalities. With the present data sets, the extraction communalities were found to be fairly high (above 0.700) indicating that the variables fit well with the factor solution. The eigen values associated with each factor explains the variance explained by that particular linear component.

The total number of factors for extraction was based on Kaiser (1960, 1970) eigen value rule (eigen values > 1) and Cattell (1966) scree test. A graphical method is the scree test first proposed by Cattell (1966). Cattell suggested finding the place where the smooth decrease of eigenvalues appears to level off to the right of the plot. To the right of this point, presumably, we find only "factorial scree" - "scree" is the geological term referring to the debris which collects on the lower part of a rocky slope. According to this criterion, we would probably retain as less factors as possible. Furthermore, based on the factors explained by the Kaiser criterion (Scree Plot), total five factors were confirmed. The scree plot (Figure 1.1 and 1.2) showed the presence of factors arranged in a descending order. The factors were assigned a number in a decreasing order based on their contribution to total variance.

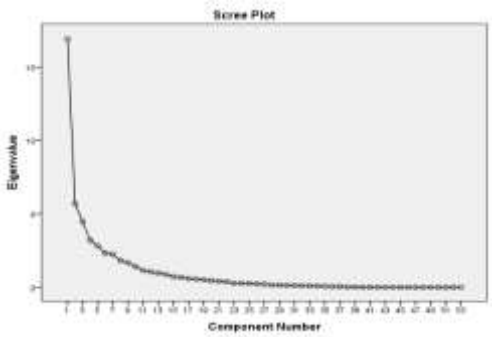

Figure 1.1: Scree plot of Input Variables

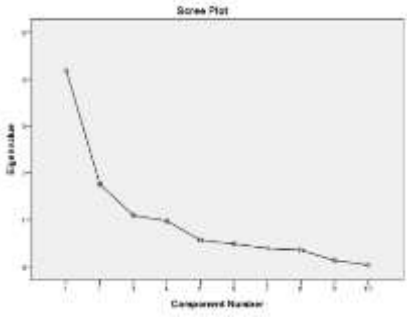

Figure 1.2: Scree plot of Output Variables

Based on the Cattell's guidelines, which call for retaining factors those are above the "elbow", and rejecting those below it. In the present study, a total of four factors for input variables and two factors for output variables were selected. These factors collectively explain more than 50% of the variance, besides any further increase in the number of factors did not show any remarkable increase in the variance explained and hence, above mentioned number of factors were finalized. Factor loadings were the basis for imputing a label to different factors. Loadings above .6 were considered "high" and those below .4 were considered "low." In the present investigation, the criterion (.4) suggested by Hair (1987) was followed for assigning variables to factors. Factors extracted from input variables Factor 1, was named as "Clarity in quality management procedures", which highlights maximum impact on the quality improvement in technical institutes. Factor 2, was named as "People Centric Processes", which focuses on optimum capacity building in technical education institutes. Factor 3, was named as "Higher Research Orientation", which indicates the sustainable development of the technical education institute. Factor 4, was named as "Optimum Resource Availability", which indicates importance of resources. Factors extracted from

output variables. Factor 1, was named as "Optimum Research Output", which highlights importance of research process in technical education institutes. Factor 2, was named as "Better Performance on different yardstick", which focuses on continuous growth of the technical education institutes. Based on the result of factor analysis, relationship of different clusters (Factor 1 to Factor 4) of independent variables with the performance indicators (dependent variables), was assessed. In order to check the predictability of the proposed model, regression analysis was carried out by employing the above mentioned/identified four factors as independent and performance indicators as dependent variables.

Model Development – Regression model

The regression analysis includes any technique for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. It is often used for prediction and forecasting. It is also used to understand which among the independent variables are related to the dependent variable, and to explore the forms of these relationships. Regression analysis is used to infer causal relationships between the independent and dependent variables. More specifically, it helps us understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed.

Regression Analysis Results: The general form of the equation to predict Optimum Research Output (Model 1) and Better Performance on different yardstick of the technical education institution (Model 2) is as follows:

Model 1

Optimum Research Output = 0.047 + (0.203x Clarity in quality management procedures) + (0.565 x People Centric Processes) + (-0.348 x Higher Research Orientation) + (0.500 x Optimum Resource Availability).

The first model indicates that there is positive relationship ($r=0.769$, $P<0.01$) amongst the independent (Optimum Resource Availability, Clarity in quality management procedures, Higher Research Orientation, People Centric Processes) and dependent (Optimum Research Output) variables. The r value is fairly high for People Centric Processes and Optimum Resource Availability and is indicative of positive relationship with Optimum Research Output. Overall, it is clear from the results that the independent parameters selected in this model have a noticeable influence on the Optimum Research Output of technical education institute in the study area.

Model 2

Better Performance on different yardstick = 0.010 + (-0. 057 x Clarity in quality management procedures) + (0.837 x People Centric Processes) + (-0.286 x Higher Research Orientation) + (0.483 x Optimum Resource Availability).

The second model indicates that there is positive relationship ($r=0.764$, $P<0.01$) amongst the independent and dependent (Better Performance on different yardstick) variables. The r value is fairly high for People Centric

Processes factor and is indicative of significant ($P<0.01$) positive relationship with Better Performance on different yardstick. Overall, the results show that the independent parameters selected in this model have a noticeable influence on the Better Performance on different yardstick related factor of the technical institutes of the study region.

The final models proposed are presented as follows:

Model – 1: Optimum Research Output

= k + (c1 x F1) + (c2 x F2) + (c3 x F3) + (c4 x F4)

Model – 2: Better Performance on different yardstick

= k + (c1 x F1) + (c2 x F2) + (c3 x F3) + (c4 x F4)

VI. HYPOTHESES TESTING

Model/Accreditation as positive impact on quality improvement of technical institute. It was evident from the study results that the existence of the standardized procedures in the engineering colleges does help in improving the quality of the education delivery as well as achievement of satisfaction of all the stakeholders. Hence, the hypothesis, which states that "Model/Accreditation have positive impact on quality improvement of technical institute", is accepted. Quality of input factors has the positive impact on the quality of output factors. It was evident from the study results that engineering colleges all the input factors have either direct or indirect effect on the quality improvement of the technical institutes. Hence the hypothesis which states that, "Quality of input factors has the positive impact on the quality of output factors", is accepted.

VII. CONCLUSION

To survive in a rapidly evolving global market, customers and their needs should govern all the activities within an organization. Quality is very important aspect in all institutions especially technical education, since it bears a direct impact on the improvement of the education process. The victory of institutions depends on their management strategy on how to identify, classify, analyze, and react to the effective approach. Quality management relies more on processes than on products and is based on strong assumption that a product which comes out of a good process is always good. In conclusion, the proposed conceptual model evident from the study results that engineering colleges all the input factors have either direct or indirect effect on the quality improvement of the technical institutes.

VIII. REFERENCES

[1]. Irfan A Gulbarga, Dr.Soma.V.Chetty, Dr.Jagadeesh.P.Ganjigatti, Suniel Prakash" Assessing Technical Institutions through the Principles of Total Quality Management: The Empirical Study – 2",*.International Journal of Scientific and Research Publications, Volume 2, Issue 8, August 2012 1 ISSN 2250-3153.

[2]. Irfan A Gulbarga, Dr.Soma.V.Chetty, Dr.Jagadeesh.P.Ganjigatti, Suniel Prakash" Assessing Technical Institutions through the Principles of Total Quality Management: The Empirical Study – 2" , International Journal of Scientific and Research Publications, Volume 2, Issue 8, August 2012 1 ISSN 2250-3153 .

[3]. Z. Irani, A. Beskese, P.E.D. Love "Total quality management and corporate culture: constructs of organisational excellence, Elsevier, Technovation 24 (2004) 643–65.

[4]. Norhayati Zakuan, Shalini Muniandy, Muhamad Zameri Mat Saman, Mohd Shoki Md Ariff , Sapiah Sulaiman, Rozita Abd Jalil,"Critical Success Factors of Total Quality Management Implementation In Higher Education Institution: A Review" International Journal of Academic Research in Business and Social Sciences December 2012, Vol. 2, No. 12 ISSN: 2222-6990.

[5]. Rozita Abd Jalil, Himanshu Joshi "Relevance of Total Quality Management (TQM) or Business Excellence Strategy Implementation for Enterprise Resource Planning (ERP) – A Conceptual Study""Practice-Oriented Paper - Research Paper" IQ Concepts, Tools, Metrics, Measures, Models, and Methodologies .

[6]. Deepak Subedi, Suneel Maheshwari (2007) "Impact of Total Quality Management (TQM) on profitability and efficiency of Baldridge Award Winners", Delhi Business Review X Vol. 8, No1.

[7]. Beshkol, Sajad; Rahimi, Fateme (2012) "Total Quality Management; A New Approach to the Business Operation Improvement", Vol. 6 Iss.12, p177.

[8]. Ben, N., J., Naim, M. M., & Berry, D. (1999), 'Leagility: Integrating the lean and Agile Manufacturing paradigms in the total supply chain - Strategies for enriching', International Journal of Production Economics, vol. 62 no.1- no. 2, pp. 107-118.