Quality Assurance in Education through Quality Circles – Global and Indian Context

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H.E. Mr. Cassam Uteem, President of Mauritius honoured Mr. Jagdish Gandhi, the founder, City Montessory School, Lucknow, India, with the Quality Pioneer's Award at Port Luis in Mauritius, in recognition of Mr. Gandhi's pioneering contribution in introducing the concept and practice of Quality Circles (QC) in education. Incidentally, the Ministry of Education has made SQC's compulsory in all government-aided schools in Mauritius.

Introduction:

Since Independence, the education, particularly the higher education in India has undergone a unique transformation from elitist to egalitarian group. There has been the expansion of higher education facilities in India since independence. We can see the expansion of higher education with increasing speed day by day in the context of globalization, liberalization and privatization. But a big question in front of us is whether the quality is ensured or not. It is saddening to note that 128 universities who got themselves accredited by the NAAC only 32 per cent could get 'A' or above level of rating while another 52 per cent of them could manage with 'B' or above grade. The remaining 16 per cent fall in grade 'C' or above. NAAC assessment further indicates that 68% of colleges are rated as 'B' while another 23% colleges is rated as 'C' grade; and only the remaining 9% are 'A' grade. Thus the quality assurance in higher education is the need of the hour.

Internal Quality Assurance system:

Quality is defined as

'the fitness to use and conformance to requirement' (Juran, 1984)

'A predictable degree of uniformity and dependability at low cost and suited to the market' (Deming, 1986)

'The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs' (American Society for Quality Control, 1990)

'A perception arising as a consequence of how well a company meets all explicit and implicit promises made to a stakeholder.' (Feigenbaum, 1995)

'A function of competencies in terms of knowledge, skills and attitudes, capacity and competition vis-a-vis needs.' (Goel and Biswal, 1996)

'product or service possesses quality if it helps somebody and enjoys a good and sustainable market' (Deming, 1997)

'Resultant from the system that produced it, and is an attribute of that system as much as of the product itself— of its processes, its people and the way they work together.' (Holt, 1998)

'Efficiency in meeting the set goals, relevance to human and environmental needs and conditions and "something more" in relation to the pursuit of excellence and human betterment..' (Rajput and Walia, 1997)

Thus, Quality is skill, excellence, perfection, standard, competence for work and value for money. It is further defined as combination of competence with virtue, excellence in performance and capability of delivering goods.

An Internal Quality Assurance system is a system under which students, staff and management satisfy themselves that control mechanisms are working to maintain and enhance the quality. In the specific context of higher education institutions, IQA is the totality of systems, resources and information devoted to setting up, maintaining and improving the quality and standards of teaching, scholarship (student learning experience), research, and service to community.

Quality Assurance Processes:

The processes may have the following elements:

- Quality assurance of student assessments
- Quality assurance of staff
- Quality assurance of facilities
- Quality assurance of student support
- Specific Instruments for Quality Assurance

The following special instruments may be used periodically and mostly combined with external assessment.

- SWOT analyses
- Inter-collegial audits
- Information system
- Quality handbook

The AUN-QA has formulated criteria for IQA.

These requirements are in line with the requirements formulated by the European Association for Quality Assurance (ENQA). A institution must have:

- a clear policy for IQA and clear procedures for it;
- an adequate system for the approval, monitoring and periodic review of programmes and awards;
- an adequate system for the assessment of students
- an adequate system for the quality assurance of teachers

- an adequate system for the quality assurance of learning resources and student support;

- an adequate information system;

Quality Assurance in Indian Context:

The National Assessment and Accreditation Council (NAAC), is an apex body for quality assurance of institutions of higher learning in India, has accredited 140 Universities and 3492 colleges in the country. To keep this type of momentum in the Indian context the NAAC has given guidelines to all the accredited institutions to establish an internal quality assurance cell (IQAC) to ensure qualitative growth of the institution. The composition of the cell has been clearly defined so as to representative of all the constituents of the institution. Quality Circle Forum of India (QCFI) was founded in April 1982 as a non political and non-profit organization with Headquarters at Hyderabad to promote Quality Circle concept in India by creating awareness and imparting skills in implementing Quality Circles in the organizations. QCFI has 20 Chapters spread over the country in the Northern, Eastern, Western and Southern Zones catering to the needs of Quality Circle promotion and training of people in their respective areas.

Quality Circle - Background:

The concept of Quality Circles (QCs) is essentially Japanese. When Japan lost the Second World War, its economy suffered a major setback. In order to revive a shattered economy, Japan started to imitate the manufacture of several western goods. The strategy, however, did not work because the quality of most of these goods was poor. Despite price advantage, Japan found it difficult to face and survive global competition. It was then felt that a sustained effort to employ Statistical Quality Control (SQC) techniques to manufacturing operations would be the only way to revive the economy of Japan.

QCs in Japan were formalized in 1960 by K. Ishikawa. He succeeded in convincing the management about the potential of significant contribution from the large workforce to quality, productivity and several work-related issues. In reputed Japanese Companies, there is hardly a worker who is not a member of one Quality Circle (QC) or the other. Juran had sown the seed of QCs in Japan. It was Juran who, for the first time, propagated the broad role of quality function which traditionally was confined to the preparation of inspection reports on the quality of raw materials, semi-finished and finished goods. Juran's definition of quality was concerned with the quality of performance of an organization where every employee, irrespective of his status or nature of work, has the potential to contribute to the overall quality function. The concept of QCs is based on the management's faith in the capabilities of employees. A QC is only a forum to operationalize this faith.

In mid-sixties, the West became aware of the success of QCs in Japan. Several European and American Companies started forming these circles with fairly encouraging results in the areas of quality control, cost reduction, productivity, safety, housekeeping, etc.

The International Association of Quality Circles (IAQC) was formed in the U.S.A. in late 1977. Apart from training its members and propagating QC concepts, IAQC also acts as an international organization for the dissemination of global information concerning QCs.

Quality Circles in Education:

Education system does not function in vacuum but is a part of the larger social system. Policy changes

like liberalization and privatization have their impact on education system. And then, with the globalization of the economy, can education be far behind?. 'The transition to 'one world' is a painful process, for the vital question is who gets integrated into whom. Obviously, the weaker gets subsumed into the stronger….', (Mukhopadhyay, 1997) Hence, there is a crucial need for introspection. With the foreign universities opening more and more centers in India coupled with aggressive marketing strategies, Indian education can only retain its identity and integrity if it can provide a world-class quality of education.

Quality Circle is an integrated system constituting small groups of people from same or similar work areas, who voluntarily offer to meet in order to identify, analyze and solve problems, which may lead to improvement in their total performance and enrichment of their work life. Another source defines as "a Quality Circle is composed of a small group of employees who genuinely care about others, preferably doing similar work, meeting voluntarily with a leader on a regular basis, to identify problems, analyze the causes, recommend their solutions to management and wherever possible, implement solutions."

Quality circles in industry have been known to increase productivity, improve quality, boost employee morale, and serve as a human resource development tool; these same benefits may be accrued in education. In fact, quality circles in community colleges have been used to solve problems in administrative developments (Ladwig, 1983; Moretz, 1983), and in student support services (Ladwig, 1983; Cohen, 1983). Examples of quality circle applications at the community college are described in this article in the later part.

The Quality Circle organization has a four-tier structure, consisting of

a) Members

b) Leaders

c) Facilitators

d) Steering committee

Each circle has a leader preferably from amongst its members, a senior staff or from the management. Extensive training is provided to circle leaders so as to make them effective in initiating, guiding and controlling the circle activities. They must be familiar with their responsibilities and should know how to identify problems, analyze them and find solutions.

Facilitators are from a senior level in the hierarchy who liaise and co-ordinate the work of different circles under their control. Usually, three to four circles are allotted to each facilitator. They act as guides and catalysts for the circles and they stimulate the members to work together.

The steering committee is the apex body, comprising of departmental heads headed by the management representative. This committee overviews the work of all the circles and acts as a focal point for their planning and operation. The steering committee meets periodically to study the reports received from different circles or from their facilitators and the latter keep in touch with the members of the committee.

Quality in education can be ensured through the technique "Quality Circle" which has been successfully

implemented in manufacturing industries. In educational institutions, the quality circles on various areas can be formed, so as to enrich the Indian Higher Education to International standard.

Quality Assurance Department:

There may be a separate department such as Quality Assurance Department or Quality Management Department formed for coordinating the various circles, selecting leaders, convening circle meetings, arranging training for members and obtaining other inputs from outside to prepare circles for solving problems, and arranging presentations of reports for the approval and implementation of management.

The thrust areas:

The various key issues on which the circles may be formed as far as any educational institution is concerned are:

a) Teaching & Learning in small groups

b) Infrastructure maintenance and its optimum use

c) Use of ICT

d) Faculty development

e) Course Curricula review

f) Students academic Excellency – Subject knowledge, General knowledge and soft skills

g) Students co-curricular activities

h) Students extra curricular activities

i) Students Assessment

j) Placements and Employability

k) Out reach and Extension Programs

l) CSR activities (Community and Social Responsibilities)

m) Counseling and Grievance handling

n) Doctoral and Post Doctoral Research and Publication

o) Faculty members Consultancy

Techniques for Problem Solving in Quality Circles:
The following techniques are commonly used by members of quality circles during their meetings for problem solving sessions. The member should be adequately trained on the use of these techniques when the circle activities are started.

i) Data or information collection

ii) Brain storming

iii) Cause and effect analysis

iv) Pareto diagrams

v) Control charts

vi) Flow diagram and process flow chart.

Table 1. Characteristics of a Quality Institution and an Ordinary Institution

Quality Institution	Ordinary Institution
• Customer centered	• Centered on internal needs
• Focused on preventing problems	• Focused on detecting problems
• Invest in people	• No systematic approach to staff development
• Treat complaints as an opportunity to learn	• Treat complaints as nuisance is vague about standard of quality
• Have well defined quality characteristics for all areas of the organization	• Have no quality plan
• Senior management process involves everybody	• Only the management team is involved
• Have collective performances and responsibility	• Have individual responsibility
• Concurrent performance appraisal	• Retrospective performance appraisal
• Flexible planning	• Rigid planning
• Have egalitarian culture	• Have hierarchical culture
• Plans are long term	• Plans are short term
• Quality is seen as a part of the culture	• Quality is seen as a troublesome initiative

Table 2. Can QCs Work in Education?

QCs will not work, if …. QCs are for solving managements' problems	QCs will work, when….

QCs in industries are for improving products but education has no products	QCs are for employees' growth and development
QCs extract more work	Products of education (students) are equally important as industrial products. For the benefit of all, we must have QCs
from sincere and simple people	
It is too much "talk" and less results.	QCs "empower" sincere and simple people
It will breed few achievers and dump the rest.	If the concept is understood clearly.
Qc's are an endless agony of teams, meetings, seminars and reports.	It converts the average into high achievers who have "built in" rewards and motivate the rest to do their best
	It is the highest form of an individual's morphosis, a transition both on the personal front and at the work place.

Table 3 : The QC Approach vs The Traditional Approach

Dimension	QC Approach	Traditional Approach
Teacher's role	Personal, as a friend and guide	Impersonal and distant
Types of objectives to be achieved	Cognitive, emotional and value oriented	Stated and prescribed
Instructional approach	Discovering together and emphasis on learning by doing	One-way, rigid, emphasis on rote learning
Relevance to life	Imparts usable, analytical & practical approach to problem at all fronts	Little
Making a difference	Problem solving in teams, so collective decisions and collective implementation	Each individual is an island. Even if there are good ideas they are not implemented

Gains from Circles:
Some gains may be tangible, while others may be intangible but in the final analysis, it will lead to improved institutional performance, reduced wastage and lasting relations between the management and staff members. Some direct gains are enumerated below:

a) Improves quality and productivity

b) Promote job involvement and sense of participation

c) Creates problem solving and problem-preventing attitude

d) Develops creativity and innovative spirit

e) Develops job satisfaction and hence less turnover of staff

f) Inspires team work and develops harmonious relations.

g) Achieves cost reduction and cost control

h) Reduces human errors and system failures.

Some examples of Quality Circles in Education:

City Montessory School, Lucknow, India:

Mr. Gandhi, the founder of the School, during his visit to Japan in 1992 got this concept of Quality Circles and implemented in his school. With the support of CMS Principal Dr. Vineetha Kamran, World's first Quality Circle by school children 'Quality Circle Jai Jagat' was formed with five students. The QC prepared a case study "How to excel in examinations" under the supervision of Mr. P.C. Bihari, a QC expert working for Indian Railways. Their path breaking effort won accolades at national and international levels and was proclaimed the most "Outstanding Case Study" at the International Convention of Quality Control Circles (ICQCC) at Hong Kong in 1994. The amazing effectiveness and success of QC's in educational institutions led to the formation of Student QCs in China, Malaysia, Singapore, Sri Lanka and many other countries. This further led to the organizing of the first International Convention of Students' Quality Control Circles (ICSQCC) by CMS in 1997. The second ICSQCC was also hosted by CMs in 1999 while the third ICSQCC was held at Mauritius under the aegis of CMS in 2000. The fourth ICSQCC was also held at CMS in December 2001 and witnessed the participation of 14 countries. A 32 member delegation headed by Mr. Jagdish Gandhi is all set to represent India at the fifth ICSQCC being hosted by Scott County at Kentueky, USA in June 2002.

Central Piedmont Community College :

Central Piedmont Community College (NC) established a quality circle at one of its off-campus learning centers. The circle, composed of the director and volunteer staff members, used brainstorming to develop a list of goals for the center, rank ordered those goals by priority on a decision grid, and drew cause and effect diagrams to determine why those goals aren't always met in the course of this analysis, the quality circle participants determined that a better telephone system was needed to help the center achieve its objectives. Circle members listed the ways in which the telephone system undermined the center's efficiency, kept a log sheet for a month to document the occurrences and nature of those telephone problems and developed recommendations for changes in telephone equipment and configuration. The quality circle not only solved the telephone problem, but also produced a net savings in staff time of about $100 per month. Moretz (1983) details the accomplishments of this quality circle and reviews the administrative procedures used by Central

Piedmont Community College to implement quality circles in all aspects of campus management.

Middlesex County College :

Middlesex County College (NJ) turned to quality circles in an attempt to improve the cost efficiency of Project COPS (Career Oriented Peer Services), a peer tutoring program that matches second-year tutors with high-risk, first-year students. Quality circles were deemed an inexpensive way to increase tutoring effectiveness and to help student tutors prepare for the world of employment. Two peer-tutor quality circles were established: one composed of peer-tutors from business-oriented disciplines, and one composed of peer tutors from the engineering program. The business oriented circle focused on the overdependence of tutees on the peer tutoring staff, recommended solutions included a stronger emphasis on tutee note-taking, time management, attendance and other factors that are central to a student's self reliance. The engineering-oriented circle concentrated upon improving campus awareness of the peer tutoring center through utilization of faculty announcements, student clubs, faculty advisors and other means. Cohen (1983) provides further information.

Lakeshore Technical Institute (LTI):

The LTI Board of Education implemented a campus-wide quality circle project, because faculty, management, and support staff expressed a desire to improve work efficiency and to become more involved in campus decision-making processes. Two types of quality circles were implemented: management circles, composed of administrators, program supervisors, program coordinators and educational specialists, and non management circles, composed of faculty and support service staff. Each circle met to identify problems and to find solutions. Among other accomplishments, the management circles developed an idea/suggestion memo system, intramural sporting events for LTI staff, guidelines for recognizing staff service, and a "who's who/what's what" recognition program. The non management quality circles recommended the development of a computerized information system to assist faculty in record-keeping, work processing, and grading. Overall, the response to the quality circles project at LTI was favorable. Improvements in employee attitudes, the quality of instructional and support services, and the work environment itself were seen as the result of the project. Ladwig (1983) provides an indepth analysis of the project.

How are quality circles used in the classroom?

Although quality circles have their roots in industry, quality circles have a promise as a pedagogical tool that makes students responsible for their own learning and increases class participation. Two such applications are described in the literature, one at Valley Forge Military Junior College (Murray) and the other at the Pennsylvania State University (Hirshfield). Murray (1983) describes a quality circle made up of 12 students in an American History survey course. These students studied the purpose and operation of quality circles and used the quality circle method to determine the type and frequency of written assignments, the content of lectures, and the testing methods to be used. The students took a serious interest in managing the class and, in fact, opted for rigorous assignments. Among other decisions, for example, the quality circle decided to reduce the time devoted to lectures, to increase the time available for discussion, to change the location of the class to facilitate discussions, and to use essay exams for grading. Murray feels that the students moved toward "a firmer, more scholarly approach" (p. 7). In addition, class participation increased from about 30 to 75 percent.

In a similar undertaking Hirshfield (1983) selected eight students from a large class in an East Asia history class to form a quality circle. Again, the decisions made by the quality circle members altered the course structure and content. Among other actions, the quality circle implemented the use of a daily outline, increased student participation in the selection of poetry and films used in the class, and urged the use of contemporary analysis to illustrate the use of course material to modern-day problems. After two years of experimenting with quality circles in the classroom, Hirshfield feels confident that they are a valuable academic tool; quality circles increase student familiarity with course material and provide students with valuable experience in decision making and problem solving. Both Hirshfield and Murray note that quality circles imbue students with a greater sense of purpose in the classroom and provide students with an enhanced sense of self-worth.

Conclusion:

Globalization has created a global market place for students and scholars. Globalization has resulted in massive expansion of higher education especially in the developing world. Universities and institutions of higher education have to produce graduates for the global market requiring content, method and structure meeting international norms. Indian higher education is widely recognized and respected across the globe. The educational institutions have to take care of providing quality education which should be in par with the international standards. By making their respective Quality Circles more efficient and effective every educational institution can get optimum benefits in ensuring quality in education.

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