ABSTRACT

Japan is to upgrade the quality of its product. They were dependent on import of food, fuel, energy and raw materials required for the industries after the Second World War. In order to survive, the country must therefore be able to pay for its imports in terms of exports. It can do so only adding value to the imported materials. In fact, quality circles are natural outcome of the Japanese belief about people as the most valuable resources of production and that everything important in life can be achieved only as a result or team work of collective effort.

Quality Circle is a participative management system in which workers make suggestions and improvements for the betterment of organization. A quality circle is a small group of volunteers doing similar work. They meet regularly under the leadership of their immediate supervisor (Hod/Principal) or someone chosen amongst the circle to identity problems, set priorities, discover courses and propose solutions. These may concern quality, productivity, and safety, job structure, process flow, control mechanism, aesthetics, or the work area, etc in technical education scenario.

The authors assume that a group of individuals working together will invariably come up with better solution than one individual working alone. Quality circles are a specifically structured from and mode of participative management. “The imperatives of quality and productively, which lies at the heart of this new industrial competition are impassible to satisfy without the active, loyal and committed, participation of a well trained and constantly importing work force. Such technique must be more fruitful for the betterment of technical education and employability in industry.

The quality of education is mainly about the economy of the country because it is the economic development, which depends on quality of education. Quality education has several philosophical implications. Quality education does not mean only literacy, formal education, and acquisition of knowledge and passing examinations. The quality education facilitates the physical, mental, social, emotional, and spiritual development of a person.

Key Word: Technical Institution, Quality Circle, Leadership, Management, Responsibility

INTRODUCTION

The concept of quality circles is based upon the human resource management considered as one of the key factors in the improvement of product quality and creativity of the people thorough continuous process of education, training, work experience and participation. It also implies the creation of facilitative conditions and environment of work, which creates and sustains their motivation and commitment to words work excellence.
Quality circles have emerged as mechanism to develop and utilize the tremendous, potential or people for improvement in product quality and productivity[1]. Quality circles are presently becoming popular among industrial organisations through the world. Quality circles, originally known as Quality control circles came into existence in the Japanese industry in the early 1965.

**Origin**

The defeat of Japan in the Second World War totally destroyed its industrial capacity, Japan received lot of technical and economical assistance from the west to rebuild the industry and regain its foothold in the world market. In the eagerness the quality aspect was lost sight of and Japanese products were considered cheap but inferior. Moreover, Japan was suffering from severe constraints of high population density and lack of natural resources.

In 1950’s, experts introduced statistical quality control methods to Japan to improve quality and enhance proclivity from United States. A quality control research grace was formed as a part or the Japanese union of scientists and Engineers (IUSE). Quality circles evolved out of these research effects from the combination of two aspects namely statistical techniques and group orientation dissected towards solving. If enabled Japan to accomplish the tremendous task of socio-economic reconstruction and carry forward in its industrial growth. The introduction of quality circle gradually spread to every sector of quality underwent a positive charge.

Today nearly 85% of Japanese workers are member of quality circles and about two million quality circles are in operation.

1. **Definition of quality circle**

Dewar, President of the International Association of QC’S defines QC’S as” a way of capturing the creative and innovative power that lies within the work force”. A quality circle is a small group of volunteers (usually 3 to 12 employees) doing similar work. They meet regularly under the leadership of their immediate supervise or some one chosen among the circle to identity problems, set priorities, discover courses and propose solutions. These may concern quality, productivity, and safety, job structure, process flow, control mechanism, aesthetics, or the work area, etc.

According to Maurice Alton

“Quality Circles are small group of people doing similar work who, together with their supervisors volunteer to meet for an hour a week to study and solve work related problems which affect them. Circle leaders and members are trained in simple problem solving techniques, which identify causes and develop solutions. At an appropriate time, presentations are made by the quality circles to the management who decide whether to accept, modify or decline the proposals.

**Concept of Quality Circle.**

It has three merger attributes as:

1. QC is a form of participative management.
2. QC is a human resource development technique.
3. QC is a problem solving technique.

The concept assumes that people closest to the problem better understand the nature of the problem and what is or is not a feasible solution[4].

Philosophical Basis of Quality Circles

The philosophical of quality circle is to make better use of human resources. Every institution has a vast store of untapped talent, learning abilities and ideas. This step is the discovery of this valuable resource, by the measurement the key philosophical foundations are.

1. People will take pride and interest in their work if they experience autonomy and control over the decisions that affect them.
2. If helps to develop in employees sense of belonging ness towards a portlier institutions. If from involvement satisfactor involvement in decision-making and the opportunity to satisfy higher order needs like.
3. A belief that each employee desires to participate in making the organisation a better place in which he works.
4. Recognition of the importance of development of human resources. It empties the development of their skills, capabilities, confidence and creativity through the process of education, training work experience and participation.
5. A willingness to allow people to volunteer their time and effort for any performance of the organisation.
6. The importance of each and every members role and function in meeting organisational goods. Quality circles were thought of, and created as an effective means of enabling every one involved in the organisation to share his responsibility, knowledge, experience in a team effort for quality productivity
7. An involved and respected employee is a proactive employee whose work is of the highest quality.

Concept of Theory X & Theory Y

Factors theory concerning human resources MCGregor 1960,) has two Theory X: The average personas lazy not interested in work, locks initiative and avoid responsibility. Men therefore need to be concealed and completed to do the work.
Theory Y: In given conductive conditions, people desire to work and share responsibility. Theory derives satisfaction from good work. A positive sense of self-respect is important to them. Motivation, creativity and innovative ability are widely distributed among people[3]. Quality circles are in conformity with the theory ‘Y’ philosophy of Mc Gregory.

Hierarchy of Human Needs

Maslow listed here basic types of human needs.
Fig1: Maslow’s Hierarchy of Human Needs

Fig.1 & 2 presents Maslow’s hierarchy of needs explains the growing theory of works motivation. If are the forms of philosophical bases of Quality circles. These needs are arrange in sequential order in Lower order needs have priority over higher order needs. Lower one need is satisfied the individual immediately moves to the next level. Human needs are required to be satisfied. People have reasons for doing what they do. They believe that they can satisfy their needs by taking particular course of action. The need action and satisfaction are closely inter-related. All these reasons relate intimately to motivation.

<table>
<thead>
<tr>
<th>Type of need</th>
<th>Ways in which the need can meet through‘ Quality ‘</th>
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<tbody>
<tr>
<td>1. Stimulation</td>
<td>QC’s provide important way to stimulate through and reduce boredom in workplace.</td>
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<td>2. Security</td>
<td>Through QC’s employees can demonstrate their values to the organization and improve productivity.</td>
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<tr>
<td>3. Social Belonging</td>
<td>QC’s provides an accepted social structure. Team building and acceptance are part of QC training.</td>
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<tr>
<td>4. Esteem</td>
<td>Successful QC projects receive recognition and generate for the talent and expertise of the individual member as well as the team.</td>
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<tr>
<td>Self Actualization</td>
<td>QC’ combines opportunities to use knowledge, judgement and creativity with freedom to decide how to contribute.</td>
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Fig.2 : Human needs are required to be satisfied

2. **Desired Objectives to justify Quality Circles**

1. To improve the quality and productivity.
2. To reduce the cost of products or services by waste reduction, safety, effective utilisation of resources, avoiding unnecessary errors and defects.
3. To identify and solve work related problems that interface with production.
4. To tap the creative intelligence of the persons working in the organization and to make full use of its human resources.
5. To permit employees to develop and use greater amount of knowledge and skill and motivate them to apply to a wide range of challenging tasks.
6. To improve communication with the organisation.
7. To increase employees loyalty and commitment to the organisation and its goods.
8. To respect humanity and build a happy bright work place environment which is meaningful to work in.
9. To enrich human capability, confidence, moral, attitude and relationship.
10. To satisfy the human needs of recognition, achievement and self-development.

3. Betterment through Quality Circles Approaches.

It has a wide scope for group based solution of work related problems. Quality circles are relevant for factories, fires, schools, hospitals, universities, research institutes, banks, government offices, etc is an place where people are involved in the solution of problems and improvement of work. The scope of quality controls is also not limited by a narrow definition of quality. It is concerned with the concept of total customer satisfaction with products and services and not merely with conformance with some standards or specifications.

Advantages
1. Promote high level of productivity and quality mindedness.
2. Self and mutual development of employees.
3. Creating team spirit and unity of action.
4. Increase motivation, job satisfaction and pride in their work.
5. Produced absenteeism and labor turnover.
6. Developing sense of willingness towards a particular organisation.
7. Cast Reduction.
8. Improved communicates.
9. Safety improvement.
10. Increased utilization human resource potential.
11. Enhancement in consciousness and neural of employees through recognition of their activities.
12. Leadership development.
13. Trained staff.
14. Identifies work related problems and salves them efficiently and effectively.

Limitations:
1. At the beginning so quality circles, the members turn from their daily work to the task of organizing themselves and undergoing training.
2. A large investment of time and money is required for a concept that is essentially new.
3. The chance of errors increases initially. Mistakes are inevitable as employees adjust to a new way of doing things.

4. Over-expectation of some employees who are to o exited initially may turn to disappointment and drop out.

5. Quality circles may threaten traditional authority starter. Threatened authority is likely to resist and non-cooperate with the circle activities.

6. Employees who are habituated to defend on their supervisors for direction and who have lost their initiate feel uncomfortable with quality words.

7. After circle implementation, a period of confusion may arise. This is because people experiment with new ideas, New skills and new roles.

8. Changes in system and control may because necessary.

4. BASIC ORGANISATIONAL STRUCTURE OF QUALITY CIRCLES[5]

A good quality circle should have an appropriate Organisational Structure for its effective and efficient performance. It may vary from industry to industry, but it is useful to have a basic framework as a model.

ORGANISATIONAL STRUCTURE

1. A STEERING COMMITTEE (CHAIRMAN): It is the top of the structure and headed by General Manager or Works Manager or Senior Executive. Its membership includes representative from the top management personnel and human resource development people. It may have Union representative.

   It established policy, plans and directs the programme as a whole including training for the program personnel. Steering committee meets usually once in a month.
2. A COORDINATOR (PRINCIPAL): Coordinator may be a personnel or Administrative Officer. One person may act as both administrator and facilitator. It helps in case of difficulties, facility arrangements and interdepartmental communications. It may be from the middle management level.

3. FACILITATOR (HOD): May be senior supervisory officer or Foreman. He coordinates the work of several quality circles through the leader. Facilitator may manage up to ten circles. It may be usually from one of the three departments like quality control, production or Training.

4. CIRCLE LEADERS (INCHARGE): May be from lowest level supervisors, who organises and conducts circle activities. May be trained supervisor to become circle leaders.

5. CIRCLE MEMBERS (FOREMAN/SO/WS): Circle members may be line staff workers. The programme cannot exist without members and are truly the lifeblood of quality circles. Circle members should attend all meetings, offer suggestions and ideas, participate actively in-group process and attain training seriously with a respective attitude.

6. DYNAMIC ROLE IN BETTERMENT OF SYSTEM APPROACHES [5]

<table>
<thead>
<tr>
<th>FOREMAN</th>
<th>INCHARGE</th>
<th>HOD</th>
<th>CHAIRMAN/ PRINCIPAL</th>
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<tbody>
<tr>
<td>1. Keep focus on problem related work</td>
<td>1. Conduct meetings and ensure participation by all members</td>
<td>1. Coordinate the work of several QC’s through leader</td>
<td>1. Officially announces the initiation of the QC movement and stress the necessity to establish QC’s and highlight its features and utility</td>
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<td>3. Demonstrate mutual respect</td>
<td>3. Transmit Q.C. suggestions to facilitator</td>
<td>3. Arrange for expertise from other group/ Departments</td>
<td>3. Provide opportunities to QC’s to present their solutions and to implement accepted solution after evaluation</td>
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<tr>
<td>4. Offer views freely in problem solving</td>
<td>4. Interact among themselves and facilitator</td>
<td>4. Keep the circle on track</td>
<td>4. Provide resources like pace, time, training facilities, finance, etc.</td>
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<tr>
<td>5. Attempt all meetings</td>
<td>5. Present solutions and suggestions to management</td>
<td>5. Acquire skill through training programmes</td>
<td>5. Ensure adequate training opportunities to facilitator QC leaders and members</td>
</tr>
<tr>
<td>6. Contribute to finding solutions of problems</td>
<td>6. Maintain relevant records of meetings</td>
<td>6. Transfer skills to members of QC’s</td>
<td>6. Consider suggestions of QC’s fairly and justly</td>
</tr>
<tr>
<td>7. Contribute to implementing solutions</td>
<td>7. Ensure implementation of solutions by the group</td>
<td>7. Transmit proposals/solutions to management</td>
<td>7. Recognise the contributions of the facilitator and the quality circle members</td>
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<tr>
<td>8. Attend training seriously with respective attitude</td>
<td>8. Keeping the circles informed about status of previously submitted suggestions</td>
<td>8. Arrange for training for QC members</td>
<td>8. Help circles to provide presentation to management</td>
</tr>
<tr>
<td>9. Acquire skills to contribute to the problem solving activities.</td>
<td>9. Keeping meeting positive and on track</td>
<td>9. provide feedback to members/management</td>
<td>The success of QC’s depends: selection of suitable personnel as facilitator. Serve as a coach and a vital man to the management.</td>
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<tr>
<td></td>
<td>10. Training circle members in group process and in the use of tools and techniques for generating ideas and problem solutions</td>
<td>10. Maintain budgets and keep cost records</td>
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The following factors influencing the quality of technical education[6]:

1. Students  
2. Teacher  
3. Parents  
4. Employers  
5. Staff  
6. Management  
7. University  
8. Apex bodies (UGC, NBA, AICTE)  

Now, if we impart education with technology then these are the outcomes[7]:-

a. It is Active.  
b. It is informal.  
c. It is student driven.  
d. It is not time dependent.  
e. Content defined by students.  
f. Individual contribution is measured.  
g. Progress is accessed throughout.  
h. All students fully participate.

7. BENEFITS OF INFORMATION TECHNOLOGY IN EDUCATION

Now, in order to convenience the teacher, student and management to use information technology in education we need to share the following benefits:

1. It induces scientific, economic, technological, information and multicultural literacy and global awareness.  
2. It promotes inventive thinking which induces the following:  
3. Adaptability & managing complexity.  
5. High-order thinking and sound reasoning.  
6. It develops effective communication which leads to teaming, collaboration and interpersonal skills. Moreover, it induces personal, social and civic responsibility.  
7. It leads to high productivity which given the ability to plan and manage results. It also gives you a sense of using real-world tools with effective, relevant, and high quality results.
9. REMEDIAL MEASURES

The situation as referred above really offers a very grim picture. In order to correct this, reengineering of overall system is essential. It requires basically two-pronged attack.

a. Management commitment: Top management should be sincerely interested in creation of R&D culture in the institution. For this purpose following considerations need due focus of attention.

i. Senior faculty positions: Number of senior faculty members should be increased. If sufficient number is not available, adhoc higher positions may be offered to existing faculty members.

ii. Staff to student ratio: Faculty requirement as per AICTE norms should be evaluated and sincere effort should be made by the management to fill all positions. This will reduce teaching load of faculty members and they will be able to spare time for R&D work.

iii. Supporting staff: Adequate number of technical Assistants/ Lab Assistants should be recruited to help routine lab work and provide support to R&D activities executed by faculty.

iv. Maintenance of infrastructure/ Lab equipment: Proper attention should be paid for maintenance of infrastructure and laboratory equipment. Management should sanction recurring grant equivalent to at least 5% of cost value for this purpose.

10. CONCLUSION

The knowledge imparted, as part of technical education and training should be directly adaptable in practice i.e. the gap existing between technical education and practice should be bridged. The following two major needs are identified to attain this requirement.

a) There should be a close integration between end use and the knowledge & skill imparted.

b) Appropriate provision should be made to impart agility in the technical education and training

These two needs are considered to be the customer’s needs and the features of attaining quality assurance in technical education by adopting standard quality management.

Technical education and training should be considered as a long-range process, which is the mission of an institution that will enable the whole activities to focus towards attaining the mission. Hence, the first task is to formulate quality mission statement by interviewing the managerial personnel concerned with imparting technical quality education and training.

The quality of technical education and training must be declared after developing quality profile and considering external environment. The institution will have to consider its competitors and their performance should be evaluated from different perspectives.

REFERENCES


