CHAPTER 2

Review of Related Literature
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2.0. Need of Reviews

An attempt to present a brief review of related studies is essential to avoid duplication and to gather up to date information for the research work. It also helps the researcher to select the research problem and areas of the study.

The review of related literature has been grouped under the following sections-

I Concept of quality.
II Attempt towards quality improvement in education.
III Assessment of institution.
   a) Indicators of school quality [Input-output process].
   b) Methods and tools of indicator-based quality assessment of schools.
   c) Participant in Institutional assessment.
IV Total quality management in education.

2.1.1. Concept of Quality

A number of authors have dealt with the definition of quality, with majority of them making qualitative statements on quality, such as the following:

Quality is:

i. "The nature, kind or character (of something); now restricted to cases in which there is comparison (expressed or implied) with other things of the same kind; hence, the degree or grade of excellence, etc. possessed by a thing.” [Oxford English Dictionary, (1970)].

ii. "Fitness to use and conformance to requirements” [Juran (1984)].

iii. “A predictable degree of uniformity and dependability at low cost and suited to the market.” [Deming (1986)].

iv. “A product or service possesses quality if it helps somebody and enjoys a good sustainable market”. [Deming (1997)].
v. “A perception arising as a consequence of how well a company meets all explicit and implicit promises made to a stakeholder”. [Feigenbaum (1995)].

vi. “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 (1990)].

vii. “After all quality is essentially a product of intensive investment of capital, talent and hard work. Quality cannot be superficially achieved. Quality is not a chance, but a choice. Quality again is not an accident, but a design. Quality is not a destination, but a continuous journey” [Shejwalkar (1999)].


From the above definitions, it is found that quality can be regarded as a grade of excellence possessed by a thing, a certain fitness for purpose. It is a dynamic idea, a positive concept. Quality is achieved not by chance but is a result of conscious choice.

There are some myths about quality (Galvin, 1995; Feigenbaum, 1995; Dror, 1995; Crosby, 1996). These are:

i. Quality originates in quality departments.

ii. Training for quality is an expense and the upfront costs of quality are high.

iii. An expectation for perfection is unreasonable (Nobody is perfect).

iv. Quality improvements are made in small, incremental stages of 1 or 2 percent and they never last long.

v. Quality takes extra time and anyway it is innate.

vi. Quality programmes are fit only for industries (manufacturing processes).

vii. Quality is intangible, so hard to measure.

viii. Workers are the root cause of quality related problems and they work their best when there is fear.

ix. Quality is a luxury.

On the conceptual dimensions, there have been several major issues like absolute versus relative quality, quality control, quality assurance, quality management, etc. There have been some interesting statements, like absolute quality is something most of us admire, many of us want it and few of us have it. Some authors have cited examples of products like Rolls Royce or academic institutions like Indian Institute of Technology, which, in the common parlance, are considered as absolute quality.
(Mukhopadhyay, 2000). More or less, the debates and discussions have come to a conclusive point that quality can never be absolute. Quality is essentially relative. What is ‘great’ for one, may not be even acceptable to another. Quality is largely customer-oriented or based on customer perception.

The concept of quality control, rather total quality control, dates back to the early 30s of the 19th century (Feignbam, 1983). Quality control has been defined in several major handbooks and encyclopedic volumes. Identifying defective products and rejecting them characterised the method. Pass and fail in examination in the schools and colleges is a mechanism of quality control in education. In the educational system, this has been pointed out as quality benchmark on entry behaviour of students, qualification of teachers, number of school days and hours, curriculum and quality of textbooks, instructional materials etc. The quality assurance was further elaborated into the conceptual paradigm on Total Quality Management where the emphasis was on totality.

Again, a number of authors have given their views on quality in education. Some are discussed below.

2.1.2. Quality in Education:

a) Is defined as a philosophy that aligns the activities of all stakeholders in the education system with the common focus of customer satisfaction through continuous improvement of the educational system (National Invitational Conference, 1992).

b) Is meeting, exceeding and delighting customer’s needs and expectations with the recognition that these needs and desire will change over time (Downey, 1992).

c) Is a way of life, not a program (Hertzke and Olson, 1993).

d) Embraces, but is not synonymous with, effectiveness, efficiency and accountability. It is not the same as satisfying the customer with, for example, the latest model of motor car (Higher Education Quality Council, U.K., 1995).

e) Is about anything that can be improved; affects everyone in the educational institution equally and empowers staff and students to fulfill their responsibilities (Billing, 1996).

f) Means 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 & Walia, 1997).
Authors like Diwan (1995) and Choudhury (1996, b) have compared the characteristics of a quality institution and an ordinary institution, which are discussed in Table 2.1.

### Table No.-2.1
**Difference between a Quality Institution and an Ordinary Institution**

<table>
<thead>
<tr>
<th>Quality Institution</th>
<th>Ordinary Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Customer-centered</td>
<td>1) Centered on internal needs</td>
</tr>
<tr>
<td>2) Focused on preventing problem</td>
<td>2) Focused on detecting problems</td>
</tr>
<tr>
<td>3) Invest in people</td>
<td>3) No systematic approach to staff development</td>
</tr>
<tr>
<td>4) Treats complaints as an opportunity to learn</td>
<td>4) Treats complaints as nuisance, is vague about standard of quality</td>
</tr>
<tr>
<td>5) Has well-defined quality characteristics for all areas of the organization</td>
<td>5) Has no quality plan</td>
</tr>
<tr>
<td>6) Senior management process involves everybody</td>
<td>6) Only the management team is involved</td>
</tr>
<tr>
<td>7) Have collective performances and responsibility</td>
<td>7) Have individual responsibility</td>
</tr>
<tr>
<td>8) Concurrent performance appraisal</td>
<td>8) Retrospective performance appraisal</td>
</tr>
<tr>
<td>9) Flexible planning</td>
<td>9) Rigid planning</td>
</tr>
<tr>
<td>10) Has equanimity culture</td>
<td>10) Has hierarchical culture</td>
</tr>
<tr>
<td>11) Plans long term</td>
<td>11) Plans short term</td>
</tr>
<tr>
<td>12) Quality is seen as a part of the culture</td>
<td>12) Quality is seen as another troublesome initiative.</td>
</tr>
</tbody>
</table>

Source: Sharma, 2001

Further, other scholars like Cheng, and Tam (1997) proposed seven models of education quality as follows:
| **Table 2.2** |  |
| Models of Education Quality in School |  |

<table>
<thead>
<tr>
<th><strong>Goal and Specification Model</strong></th>
<th>Conception of Education Quality in School</th>
<th>Conditions for Model Usefulness</th>
<th>Indicators/ key Areas for Quality Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Achievement of stated school goals and conformity to given specifications</td>
<td>When school goals and specifications are clear, consensual, time-bound, and measurable. When resources are sufficient to achieve the goals and conform to the specifications</td>
<td>School objectives, standards, and specifications listed in the school/ programme plans, e.g., academic rate, drop-out rate, etc.</td>
</tr>
</tbody>
</table>

| **Resource Input Model** | Achievement of needed quality resources and inputs for school | When there is a clear relationship between school inputs and outputs. When quality resources for school are scarce | Resources procured for school functioning e.g. quality of student intake, facilities, financial support etc. |

<p>| <strong>Process Model</strong> | Smooth internal process and fruitful learning experiences | When there is a clear relationship between school process and educational outcomes | Leadership, participation, social interactions, classroom climate, learning activities and experiences, etc. |</p>
<table>
<thead>
<tr>
<th>Satisfaction Model</th>
<th>Satisfaction of all powerful school constituencies</th>
<th>When the demand of the constituencies are compatible and cannot be ignored</th>
<th>Satisfaction of education authorities, management board, administrators teachers parents students, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legitimacy Model</td>
<td>Achievement of school's legitimate position and reputation</td>
<td>When the survival and demise of schools must be assessed When the environment is very competitive and demanding</td>
<td>Public relations, marketing public image, reputation status in the community, evidence of accountability, etc.</td>
</tr>
<tr>
<td>Absence-of-Problems Model</td>
<td>Absence of problem and troubles in school</td>
<td>When there is no consensual criteria of quality but strategies for school improvement are needed</td>
<td>Absence of conflicts, dysfunctions, difficulties, defects, weaknesses, troubles, etc.</td>
</tr>
<tr>
<td>Organisational Learning Model</td>
<td>Adaptation to environmental changes and internal barriers; continuous improvement</td>
<td>When schools are new or changing When the environmental change cannot be ignored</td>
<td>Awareness of external needs and changes, internal process monitoring, program evaluation, development planning, staff development, etc.</td>
</tr>
</tbody>
</table>

Source: Chang and Tam, 1997
2.1.3. Attempts Towards Quality Initiatives in Education.

Worldwide, quality initiatives are undertaken both at school and higher education level (Marsh 1995, Billing 1996, Sharples, Slusher and Swalm 1996, Konopricki, 1996, Adams 1996 and Burgard 1999). In order to improve the quality of educational institutions, some are also applying the standards as in industry, for example, BS5750, ISO9000 series etc. Indian Educational institutions like Birla Institute of Technology and Science (BITS) Pilani have got ISO Certification. The first Indian School to be ISO certified is Model School, Lucknow.

Kate Sullivan Elementary School, Florida, is using Deming’s quality principles, the school is shifting its focus from “effective” to “quality” school. Instructional decisions are taken, based on, “will this help our students become life-long readers, writers and problem-solvers?” (Duirden, 1995).

Arlington Independent School District in Texas is an open organisation that actively listens to customers and employees and then acts positively upon what it learns (Bonstingl, 1993). Middle and senior managers of Westminster University, U.K., applies TQM principles to all areas of operations. The continuous improvements have resulted in improved staff training; raising awareness of the importance of speeding up decision, better co-ordination of information among other things (Billing, 1996).

Conroe Independent School District, Conroe, Houston, embraced TQM and initiated 15 teams from different areas of the district, which worked on specific projects. The accomplishments included 50% reduction in the error rate of evaluation, successful training of site personnel, publication of 3 months news-letters and a revision in the work order process which saved the district $ 238,000 annually among others (Sharples, Slusher and Swalm 1996).

Mt. Edgecumbe High School, Alaska, started its quality journey in 1988. All fresh students learnt quality philosophy, tools, techniques and learning theories including Stephen R. Covey’s Seven Habits for Highly Effective People. The results achieved include continuation of 68% of graduates on to college or university. The dropout rate decreased to 0-0-5%. Drug and alcohol abuses fell dramatically and parent satisfaction rose considerably (Marsh, 1995).

Valley Technical College, Wisconsin, started implementing total quality in 1985 and as a result has student-friendly culture. A job placement
tracking system, syllabus-friendly to the working world is developed (Marsh, 1995).
Virginia Breach Public School, Virginia, with 76,000 students and 82 schools applied TQM strategies with positive results. The five corners of quality endorsed by the teachers and superintendents were continuous improvement, customer focus, teamwork, empowerment and data driven decisions (Konopricki, 1996).

The Shriram School, Delhi, endeavours to become a quality driven organization and have implemented Deming’s 14 principles (Adams, 1996).

Burgard (1999) describes his efforts with the students using PDCA cycle to make teaching and learning more interesting, effective and create intrinsic motivation for learning in students.

But this concept of TQM from industry to education has undergone a host of criticisms, which are briefly summarised below:

(1) The teacher-student relationship is much more than a one-way provision of goods and services. Education ought not to be planning merely to satisfy the wishes of customers, it should seek to redefine their expectations (Taylor, 1994).

(2) Colleges and schools are already subjected to many forms of quality assurance from such bodies as the Higher Education Funding Councils, etc. The imposition of further controls is both unnecessary and is likely to add a further burden to the workload of teachers (Fish, 1995).

Ghosh (1990) and Venkataiah (1999) argue that the package theory of management cannot be extended mutatis-mutandis to education system, because:

* The ‘customer’ of education is different from that of industries. Education’s customers are those who receive the end product of education’s service (Tomlin, 1994). The students, parents and the society are all education’s customers.

* Industry has a different goal and mandate. The aims of the two are very different. Industry’s motive is maximization of profit whereas the focus in education is development of the potentials of each individual to the utmost.
* Industry is profit making, money-oriented organisation whereas education system is for “search of truth” and “knowledge.”

* Service condition and physical environments of both are different. “Hiring and firing” is common in industry; in education it is not done.

* Education involves direct contact between provider and end-user whereas in industries it is not so. Industry’s suppliers do not always play a significant role after the supply of raw goods. In education the suppliers play a very significant role in shaping the “product”. The teachers and parents are the suppliers that help in shaping a child’s development.

* Industries have an option of mending a bad product but education’s “products” cannot be repaired. In education the real product is produced in the classrooms.

* Industries have tangible gains and losses whereas they are intangible in education.

In 1980’s this quality initiative was at its peak in India, but after 1992, there is a downward slide. Today, in Indian organisations, efforts are on to revive this concept (Rao, 2000).

2.1.4 Assessment of Institution

Institutional assessment is the beginning point in initiating quality management in any organisation. Institutional assessment is necessary in order to collect appropriate information to review and analyze trends that may have a bearing on the organisation’s future. An assessment will identify what are the institution’s strengths and weaknesses. Institutional assessment is the beginning point in initiating quality management in any organisation. It also provides the base-line data on various aspects of the institution on which the development policy can be built upon. It is essential for continuous improvement. The review of literature reveals that there are several inter-related issues pertaining to institutional assessment. The major issues are:

a) Indicators of school quality [Input-Process-output]
b) Methods and tools of indicator-based quality assessment of schools.
c) Participant in Institutional assessment
2.1.4(a). Indicators of School Quality [Input- Process-Output]

Indicators of quality are the way for continuous quality improvement in any institution.

Successful schools always give attention to the continuous quality improvement because a successful school needs to remain successful. According to Fiz Gibbon (1990), 'an indicator is an item of information collected at regular intervals to track the performance of a system'.

Shavelson et al. (1989) described an education indicator as an individual or composite statistic that relates to a basic construct in education and is useful in a policy context.

In a review, Pelgrum et al (1995) considered indicators of quality in only one aspect of schooling, i.e., curriculum; and identified more than 170 indicators in use, most of which had overlapping or co-incident meanings despite different terminologies. Such overlapping nature of various available indicators may be done away with through a more definitive and systematic approach whereby a school may be considered a system analogous to industry where inputs like students innate qualities are processed through instructional mechanism and sub systems, to achieve the desired educational attainment i.e., the final product in this case. However, while adopting systematic approach, one faces the challenges of arriving at a clear-cut definition for inputs, processes and outputs. But in education, like industrial system, it is not possible to define clear-cut input, process and output, as for example, where does one map the efficiency of a teacher - to an input, process or the output? In this case the desired output i.e., the educational attainment of the students is a 'function' of this element. This logic makes it an input, whereas, at the same time, the efficiency of a teacher depends on other "inputs" like working environment or job condition or training.

Hence, considering the complexities of definitions, the researcher has identified and examined the elements that are invested in an educational institution, and constitute indicators of quality with respect to input, process and output.
The following figure depicts the salient feature of indicators of quality:

**Indicators of Quality in an Educational Institution**

<table>
<thead>
<tr>
<th>Input</th>
<th>Process</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Teacher characteristics and teacher</td>
<td>- Process of effective leadership</td>
<td>- Student achievement data which includes academic, attitude and the vocational skills</td>
</tr>
<tr>
<td>- Attainment</td>
<td>- Process of effective teaching</td>
<td>- Faculty achievement programme</td>
</tr>
<tr>
<td>- Student characteristics (Academic and others)</td>
<td>- Developing and maintaining a pervasive focus on learning</td>
<td>- Facilities programme</td>
</tr>
<tr>
<td>- School characteristics</td>
<td>- Producing a positive school culture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Feed at all levels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Analysis</td>
<td></td>
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</tbody>
</table>

**Input Indicators**

The most commonly studied input indicators are the teacher and the teacher characteristics, students and the school characteristics (Windham 1990; Fiz Gibbon & Kochan 2000).

**Teacher Characteristics and Teacher**

The most commonly used indicators of teacher characteristics as reported by the scholars, are:

Formal Educational attainment - It refers to the years of academic education and the level of highest attainment.
Teacher Training attainment - It also refers to the teachers' training attainment and the teacher's ability to impart that knowledge to students.
Age Experience - This characteristic is defined as the years of service, i.e., from the initial employment to the present employment. In many
cultures in India, the age of a teacher is an important determinant of the authority and respect that will be granted by students, parents and the community. Like qualification, age enters into some educational pay schemes as a determinant of salary.

Specialisation - It refers to teacher’s specialisation in a particular subject.

Subject mastery - The subject mastery is correlated with subject specialisation. It determines the extent of knowledge and skills that the teacher can transfer. Subject mastery possessed by individual teachers will vary according to their own abilities, the effort they expended in knowledge acquisition, and the quality of training provided to them (Lockhead et. al., 1987)

Student and School Characteristics

Outcome may vary according to the student’s socio-demographic characteristics - their age, gender, ethnicity, linguistic status, socio-economic status or religion.

Characteristics of school include - the level of instruction offered (Pre-School, Primary, Secondary etc.), its geographic location, facilities available and religious affiliation etc. Mukhopadhayay (2000) reported that the key inputs of schooling are: Curriculum, Students, Teachers, Support Staff, Administrators, Managers, Facilities, Classrooms and Government Policies.

Coleman et al (1966) concluded that ‘Schools bring little influence to bear on a child’s achievement that is independent of his background and general social context’. According to Coleman, there were factors related to school resources such as per-pupil expenditure, school facilities, number of books in the library etc. which were not very strongly related to student achievement.

Apart from Coleman and Jenck’s studies, there are several other studies, such as, Houser (1971), Houser et al. (1976), conducted during this time within a sociological framework, known as the ‘status attainment literature’. They estimated that schools accounted for only 1-2 per cent of the total variance in student achievement. Student achievement mainly depended upon the student’s socio-economic status background.
Process Indicators

On the contrary, some researchers studied schools that were doing exceptional jobs of educating students from very poor socio-economic status background. Weber (1971) conducted extensive case studies of four low socio-economic status inner-city schools characterised by high achievement at the third grade level. His research emphasised the importance of the actual processes ongoing at school, e.g. (a) Strong leadership; (b) High expectations; (c) Good atmosphere; and (d) A careful evaluation of pupil progress. Brookover et al., (1978, 1979) surveyed 68 elementary schools in Michigan with case studies of four low socio-economic status schools, one high achieving primarily white school, one high achieving primarily black school, one low achieving primarily white school, one low achieving primarily black school. Brookover et. al., (1976) and Good & Brophy’s (1986) findings were summarised by Reynolds and Teddlie (2000) in the following areas:

a) Time - More time was allocated and spent on instruction in the high achieving schools. Time in the high achieving schools more often involved active learning with teachers in direct instruction, while the students in low achieving schools more often worked on their own, as the teacher attended to administrative duties.

b) Write-off (percent of students not expected to master curriculum) - Large differences existed between the high and low achieving schools. The numbers of unsuccessful students are very few in the high achieving schools, while the low achieving schools had many such cases.

c) Teacher expectations - At the high achieving schools, all students were expected to work at grade level. Expectations were very low in the low achieving schools.

d) Reinforcement practices - Many teachers at the low achieving school used inappropriate techniques, often positively reinforcing students when they had not done well. Reinforcement practices were appropriate at the high achieving schools.

e) Teaching games - High achieving schools were more likely to use academic games that emphasised team, rather than individual learning.

VI) Principal’s role - the principal at the high achieving school was heavily involved in academic matters and visited the classrooms often. At the low achieving schools, the principals appeared to be primarily administrators and disciplinarians, who very seldom visited classrooms.

VII) Commitment of teaching and administrative staff – There was high commitment at the high achieving school.

On the basis of these factors, Reynolds and Teddlie summarised the process indicators of effective schools as shown in Table 2.3.
Table No.-2.3.  
The Process Indicators of Effective Schools

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Process</th>
<th>Component of the Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The process of effective leadership</td>
<td>o Being firm and purposeful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Involving others in the process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Exhibiting instructional leadership</td>
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<tr>
<td></td>
<td></td>
<td>o Frequent, personal monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Selecting and replacing staff</td>
</tr>
<tr>
<td>2</td>
<td>The processes of effective teaching</td>
<td>o Maximizing class time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Successful grouping and organisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Exhibiting best teaching practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Adapting practice to particulars of class room</td>
</tr>
<tr>
<td>3</td>
<td>Developing and maintaining a pervasive focus on learning</td>
<td>o Focusing on academics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Maximizing school learning time</td>
</tr>
<tr>
<td>4</td>
<td>Producing a positive school culture</td>
<td>o Creating a shared vision</td>
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<td></td>
<td></td>
<td>o Creating an orderly environment</td>
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<td></td>
<td></td>
<td>o Emphasizing positive reinforcement</td>
</tr>
<tr>
<td>5</td>
<td>Creating high (and appropriate) expectations for all</td>
<td>o For students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o For staff</td>
</tr>
<tr>
<td>6</td>
<td>Emphasizing student responsibilities and rights</td>
<td>o Responsibilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Rights</td>
</tr>
<tr>
<td>7</td>
<td>Monitoring progress at all levels</td>
<td>o At the school level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o At the classroom level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o At the student level</td>
</tr>
<tr>
<td>8</td>
<td>Developing staff skills at the school site</td>
<td>o Site based</td>
</tr>
<tr>
<td>9</td>
<td>Involving parents in productive and appropriate way</td>
<td>o Buffering negative influences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Encouraging productive interactions with parents etc.</td>
</tr>
</tbody>
</table>
Fiz Gibbon (2000) and Mukhopadhyay (2001) identified the key processes as—
1. Enroll at the school and then attend
2. Curriculum development through instruction
3. Develop other desirable skills through co-curricular activities, such as community services, commercial activities, etc.
4. Develop desirable attitudes
5. Good management
6. Then progress appropriately onwards.

Lewis and Douglas (1998) indicated the process indicators of integrating quality improvement in education as—

- Design inputs (programmes methods etc.)
- Delivery
- Data system
- Feedback
- Analysis

Output Indicators

As suggested by researchers like Fiz Gibbon & Kochan, 2000 Lewis and Douglas, 1998:

- Cognitive outcome (as measured by student’s achievement-data i.e., Academic, Additional Education, Employment
- Effective outcomes (student attitude)
- Skill outcomes (the vocational skills that students acquire in preparation for entering the workforce)
- Quality of life
- Long-term outcome progression to the next stage
- Faculty achievement
- Programme improvement
- Faculty improvement

Further, it is necessary to point out that effect of home and community environment also contributes to the school quality (Selowsky 1980, Mery and Steelmen 1982, Briddall and Cochrane 1982 and Johnstone and Jiyono 1983). But it is not possible in the short period of time to provide parental education, alter parents’ earnings or cultural opportunities in a given community. This study however concentrates on the variables that are within the control of the school authority.
Summing up

In order to avoid overlapping of the different scholars' view, summing up the above situation is necessary. Accordingly, the following indicators of school quality are found out-

i) Excellence in students' academic and non-academic activities.
ii) Teacher's quality - Formal educational attainment, teacher training attainment, age, experience, specialisation.
iii) Teaching - the level of instruction offered (Pre-school, primary, secondary etc.) and quality instruction (exhibiting best teaching practices, adapting practice to particulars of classroom, successful grouping and organisation).
iv) Effective leadership - being firm and purposeful, involving others in the process, frequent and personal monitoring and selecting and replacing staff.
v) Linkage and interface communication with the environment.
vi) Students' participation in the co-curricular activities such as community services, commercial activities etc.
vii) Office management
viii) Available material resources
ix) Job satisfaction of the staff
x) Examination
xi) Relationship within the school
xii) Students' participation rate, graduation rate and dropout rates
xiii) Discipline of the school.

Konopricki (1996) pointed out that many educational institutions like Millcreek Township Public School, Pennsylvania, Rappahannock County Public School, Virginia, Prince William County Public School, Virginia, Southwestern Wisconsin Quality Consortium, Wisconsin and Vermont Department of Education, Vermont, etc. have benefited by incorporating the above management concept, i.e., input-process-output in their efforts towards Total Quality Education (TQE).

2.1.4(b). Method and Tools of Indicators- Based Quality Assessment of Schools:

There are several instruments and methods developed by different scholars for assessment of institutions. These are discussed below:

In the year 1990, Director of Education, Delhi Administration, developed a Self-Assessment Instrument of Schools. The purpose of development of this instrument is to assess the requirements and shortcomings of the
respective schools, which will be useful for the institutional planning so as to make efforts for qualitative improvement as well as objective inspection of the school in future. The instrument consists of two parts. Part-I contains general information about the school and Part-II includes self-evaluation of the schools in the following areas:

a) Achievements  
b) School programmes  
c) Adequacy of physical facilities  
d) Utilisation of physical facilities  
e) Adequacy of staff  
f) Utilisation of staff  
g) Administration  
h) Environmental setting  

The marks are allotted in a two-point scale or a five-point scale:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>4 (above 80%)</td>
</tr>
<tr>
<td>Good</td>
<td>3 (above 60%)</td>
</tr>
<tr>
<td>Average</td>
<td>2 (above 40%)</td>
</tr>
<tr>
<td>Below Average</td>
<td>1 (above 20%)</td>
</tr>
<tr>
<td>Poor</td>
<td>0</td>
</tr>
</tbody>
</table>

Statements on a two-point scale are scored on the following basis:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

The marks obtained in each of the areas should be added and converted into percentages. The final grade will be decided as follows:

<table>
<thead>
<tr>
<th>Minimum Average Percentage</th>
<th>Minimum Percentage in each of the areas</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>75</td>
<td>A</td>
</tr>
<tr>
<td>75</td>
<td>60</td>
<td>B</td>
</tr>
<tr>
<td>60</td>
<td>45</td>
<td>C</td>
</tr>
<tr>
<td>45</td>
<td>30</td>
<td>D</td>
</tr>
</tbody>
</table>

Schools not satisfying any of the conditions will be assigned grade E.

Similarly, in the year 1993, Director of SCERT, Delhi, had decided to undertake a study to ascertain the input-output relationship in the secondary schools in Delhi. The objective of the study was to devise ways and means to ensure proper balance between the inputs and outputs. For this purpose, an inventory has been developed with the help of educational planners, administrators and principals. The tool is divided into two parts, viz. (a) input; and (b) processes and outcomes. The first part will provide an indication about the quality of input available in a particular school, and the second score will indicate the quality of the
processes organised by the school within the framework of the available input and outcome achieved. In the questionnaire, first three questions were to elicit information regarding the availability or non-availability of facility. Next four questions seek the opinion of principals regarding the quality of different facilities on a four-point rating scale ranking from ‘poor’ to ‘excellent’, with scores between 0 and 3. Two questions are on information about the efforts made and the money spent on facilities like drinking water, toilets, sewerage, etc. Similarly, the instrument contains questions covering the following areas:

i) The level of students attainments before joining classes VI, IX & XI.
ii) The money spent on purchase of library book, laboratory equipments and on games materials.
iii) The percentage of students for whom proper furniture is made available.
iv) The percentage of first generation learners.
v) Participation of community in the affairs of the institution.
vi) The quality of education imparted in a school as reflected in the result shown by the schools in external examination.
vii) The quality of school programmes, judged from the average attendance of students in different classes during the session.

Frazier Andy (1997) developed Johnston County Schools Total Quality in Education Assessment Instrument. The main objective of the development of this instrument is to determine the current level of awareness of Total Quality Education.

The instrument contains the following areas:

i) Leadership
ii) Data / information about the school
iii) Planning
iv) Human resources
v) Process quality
vi) Customer focus and satisfaction

Respondents are asked to complete each and every item by choosing one of the four possible responses, such as:

a) Completely agree  c) Somewhat disagree
b) Somewhat agree     d) Completely disagree
Mukhopadhyay (2001), developed a comprehensive institutional assessment system that covers comprehensively all aspects of an institution. This assessment system includes both quantitative and qualitative methods of assessment.

The instruments in Mukhopadhyay's Institutional Assessment System are:

i) Teachers' Questionnaire: Mukhopadhyay's Institutional Profile Questionnaire (MIPQ)
ii) Principal's Questionnaire
iii) Student's Questionnaire
iv) Parent's Questionnaire
v) Data and Information Blank.

Teacher's Questionnaire i.e. MIPQ comprises eleven areas:

i) Leadership
ii) Teacher quality: preparation, competence and commitment
iii) Linkage and interface: communication with an environment
iv) Students: academic and non-academic quality
v) Co-curricular activities: non-scholastic areas
vi) Teaching: quality of instruction
vii) Office management: support services
viii) Relationship: corporate life in the institution
ix) Material resources: instructional support
x) Examination: purposefulness and methodology
xi) Job satisfaction: staff morale

The MIPQ consists of 110 items: 10 items on each area of an institution mentioned above. The respondents are asked to respond in one of the five possible responses, namely, Very True (VT), Largely True (LT), Partly True (PT), Not Sure (NS), False (F). For the purpose of scoring, a numerical value of 4 to 0 is attached to each category of response. The MIPQ measures largely the perception of teachers about the selected areas of an institution.

One of the questionnaires is for the principal, seeking his/her own perception in areas like punctuality, relationship with teachers. The second questionnaire is for the students - their perception about discipline, support system, human relations and standards of academic and non-academic activities.
The third questionnaire is for the parents seeking their views on discipline, reputation, teachers’ attitude towards students and parents, accessibility to teachers and principal, etc.

Another questionnaire called Information Blank deal with factual information and data on enrolment, transition rate, and performance in academic and non-academic activities, resources and facilities - physical infrastructure, financial resources and staff.

The above instruments are designed to measure both facts and perceptions. Punctuality, discipline, reputation, professional support, relationships are elements of perceptual measures. Excellence in achievement, enrolment, resources etc. are factual and databased. In order to know the trend of development, data over the last few years can be used.

The following are the areas where databased assessment can be used:
- Enrolment in the institution.
- Academic achievement: inter-grade transition rate and excellence.
- Performance in co-curricular activities.
- Utilisation of library.
- Inventory and utilisation of physical infrastructure.
- Inventory and audio-visual aids, their uses, etc.

These instruments assess the quantitative aspects of the situation. For assessing the qualitative aspects of the situation, SWOT analysis can be used. SWOT stands for strengths, weaknesses, opportunities and threats. This is basically a participative technique for organisational diagnosis whereby members of an organisation collectively decide; rather identify their Strengths, Weaknesses, Opportunities and Threats (Mukhopadhyay, 1989).

Mukhopadhyay, S. (2001) used DELPHI method in order to select the dimensions for quality profiles of schools. She wrote, “Delphi is a method of obtaining the consensus of a group of individuals. Its procedure is appropriate for formulating group value judgment. It is a group communication process and its main appeal lies in the manner in which it organizes group communication. The basic component of the method is the creation of experts’ panel that establishes the weight of relevant objectives of the policy-making by possibly using a series of questionnaires and a feedback that provides the findings to the panel”. (Quoted from Helmer, 1966)

The Delphi technique was originally formulated by the Rand Corporation in the early 1950s for use in national defence related problems by Helmer
and Rescher, (1959). Later in the 1970s, the method was used in the fields of planning, project evaluation and cost-benefit analysis (Shefer and Stroumsa, 1982). Now-a-days, it is also being used in the field of educational policy, planning and management.

In this case, the Delphi respondents comprised of policy makers, educationalists, administrators at the state and sub-state level and the representatives of the community. These experts defined quality of secondary schools and attributes that make a school, a quality school. Regarding tools, on the basis of the review of literature, the investigator developed 10 types of schedules for data collection. A brief description of the tools used in this study is given below-

- **School Schedule (SH-1):** School schedule was designed to collect information about the school, its context, physical infrastructure, and library and laboratory facilities.

- **School Schedule: Human Resources (SH-2):** This schedule was mainly to collect information on students, teachers and other staff in the school. The quantitative information regarding student enrolment, academic progress was to be collected from office records. It also provided information on other aspects of school life where personnel were involved.

- **School Schedule: Teaching-Learning Activities (SH-3):** This schedule referred to teaching, learning activities, planning and execution. Information referred to admission policy, planning of calendar, work load, working days, time-tableing, planning of class-sections, evaluation procedures, etc. and co-curricular activities.

- **Schedule on School Management (SH-4):** This schedule was designed to collect information about the school management and financial resources available in the school.

- **Schedule for Students (SH-5):** First part of this schedule referred to information on students, second on rating the perceptions about physical infrastructure, third on learning processes and teaching processes, fourth on evaluation system and last on the supervision and community involvement.

- **Schedule for teachers (SH-6):** This schedule expected teachers to record their perceptions about the physical facilities, library and laboratory facilities, teaching-learning equipment and teaching-learning processes in terms of adequacy, quality and functionality. It also had items leading to perceptions about support from
educational authorities and involvement of the school communities.

- **Schedule for Head Teachers (SH-7):** This was designed exactly on the same lines as teachers, so as to make comparisons possible across students, teachers and head teachers.

- **Schedule for Parents (SH-8):** It is on parent’s perception about the school.

- **Schedule for District Educational Officer (SH-9):** This had some common items especially on perceptions regarding physical facilities, laboratory and library, teaching-learning equipment and processes. Some specific items on supervision and community involvement were also included.

- **Classroom Observation Schedule (SH-10):** A classroom observation schedule covering classroom management, institutional management and time management was designed to further quantify the teaching-learning processes in select classrooms.

These instruments assess some of the quantitative information from the school authorities/administrators and office records, while qualitative information was to be collected through direct observations.

### 2.1.4(c). Participants in Institutional Assessment

Several authors have tried to explain who would carry out an institutional Assessment. TQM in particular emphasizes on involvement of all - from assessment, diagnosis to development and quality improvement. The focus is essentially on the customer or the beneficiary and hence it is important to list down external customers of an educational institution as well as internal customers (Mukhopadhyay 2001, Frazier 1997). Luft (1970) suggested the case of known and unknown elements of an institution to the principal and others can be meaningfully plotted in the windowpanes of a JOHARI window:

![Illustrated JOHARI Window on a School](image-url)
The important message in this Window is the ‘Institutional blindness’ as a major threat. Principal’s secrets as well as Principal’s blindness are equally serious weaknesses. However, Principal’s blindness can be converted into an opportunity if he or she is open to others’ view of institutional assessment. With increased participation and sharing, the partition between known to unknown on both sides can move enlarging the known-known window simultaneously reducing the windows with unknown components (Mukhopadhyay, 2000).

Frazier (1997) suggested identification of internal and external customers, and surveyed the customers for valid requirements and satisfaction. In the context of Total Quality Management, the focus is essentially on the customer or the beneficiary and hence it is important to list down external customer as well as internal customer of an educational institution. For example, employers, colleges and universities, taxpayers and government are some of the important external clients of a school. On the other hand, teachers, non-academic staff, members of the executive board and the supervisory staff are the internal clients. Students are the most important clients as they are both external as well as internal. However, in order to make a meaningful assessment, it is important to actually identify the clients or the beneficiaries who can be consulted, whose response can be sought and trusted to assess the performance of an educational institution.

In case of a school, the respondent can be the principal, the teachers and the non-academic staff.

**Total Quality Management in Education**

TQM in education or Total Quality in Education, TQE (Hertzke and Olson, 1993) has been tried in many educational institutions (Bonstingl, 1996, Sallis 1993, Duden 1995, Billing, 1996). Deming's 14 points for Management and the interpretation of those points in an educational context (Holt, 1993-b) are as given below in Table 2.4.
Table 2.4.

Deming’s 14 points for Management and the interpretation of those points in an educational context

<table>
<thead>
<tr>
<th>Deming’s 14 points for Management</th>
<th>Implementation of those points in an educational context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create constancy of purpose for improvement of product and service</td>
<td>Establish the moral purpose of the school</td>
</tr>
<tr>
<td>Adopt the new philosophy</td>
<td>Make the transformation to the new philosophy</td>
</tr>
<tr>
<td>Cease dependence on mass inspection</td>
<td>Focus not on outputs but on the activity of teaching and learning</td>
</tr>
<tr>
<td>End the practice of awarding business on the basis of price tag</td>
<td>Examine proposed innovations carefully</td>
</tr>
<tr>
<td>Improve constantly the system of production and service</td>
<td>Identify and solve curriculum problems in the context of the school system</td>
</tr>
<tr>
<td>Institute training on the job</td>
<td>Invest in teachers</td>
</tr>
<tr>
<td>Adopt and institute leadership</td>
<td>Establish collegiality and optimize the system</td>
</tr>
<tr>
<td>Drive out fear</td>
<td>Promote mutual respect and trust</td>
</tr>
<tr>
<td>Break down barriers between departments</td>
<td>Co-operate</td>
</tr>
<tr>
<td>Eliminate slogans, exhortations and targets for the work force</td>
<td>Interrogate the system, not the teachers</td>
</tr>
<tr>
<td>Eliminate numerical quotas for the work force</td>
<td>Minimize objectives and outcomes; focus on educational encounters</td>
</tr>
<tr>
<td>Remove barriers that rob people of pride of workmanship</td>
<td>No rating of students or teachers</td>
</tr>
<tr>
<td>Encourage education and self-improvement for everyone</td>
<td>Provide further professional studies</td>
</tr>
<tr>
<td>Take action to accomplish the transformation</td>
<td>Support the program at all levels, from school board to school</td>
</tr>
</tbody>
</table>

Total quality education (Hertzke and Olson, 1993) has been tried in many educational institutions (Bonstingl 1996, Sallis 1993, Duden 1995, Billing 1996) with impressive results. Sharma (2001) highlighted the difference between TQE and traditional ways of functioning of the school. The result obtained are as given in Table 2.5.
### Table 2.5

**TQE challenges in education**

**How does TQE differ from the Traditional Programmes in Education**

<table>
<thead>
<tr>
<th>Quality Element</th>
<th>Traditional School Organisation</th>
<th>TQE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The definition of Quality is-</td>
<td>Result oriented</td>
<td>Child-centered</td>
</tr>
<tr>
<td>Decisions are based on-</td>
<td>Short term goals</td>
<td>Balancing short term and long term goals</td>
</tr>
<tr>
<td>Emphasis is on-</td>
<td>Reasons for failure</td>
<td>Prevention of failure</td>
</tr>
<tr>
<td>Organisational culture tends towards-</td>
<td>Finger pointing, blame findings and punishing the risk taker</td>
<td>Continuous improvement and reward to achievers</td>
</tr>
<tr>
<td>People’s role changes from</td>
<td>Simple learning of subjects</td>
<td>Multi-dimensional development</td>
</tr>
<tr>
<td>Executives/ In-charges change from</td>
<td>Score-keepers to</td>
<td>Leaders by personal example</td>
</tr>
<tr>
<td>Criteria of merit changes from</td>
<td>Performance based on stuffing the brains to</td>
<td>Developing/training the mind and its abilities</td>
</tr>
<tr>
<td>Organisational structure of schools</td>
<td>Hierarchical, bureaucratic, and static</td>
<td>Flat, integrated and fluid</td>
</tr>
<tr>
<td>Problem solving is by</td>
<td>Those in authority, top of pyramid only</td>
<td>Teams, all levels of staff and even students</td>
</tr>
</tbody>
</table>

Around the world, many educational institutions have been experimenting this Japanese concept of TQM from industry to educational institutions which has very notable outcome (Salli 1993, Diwan 1995, ICSQCC 1997 and Tulsi 1998).

Millcreek Township Public School, Pennsylvania, Rappahannock County Public School, South-Western Wisconsin Quality Consortium, Wisconsin and Vermont Department Of Education, Vermont are noteworthy in their efforts towards TQE (Konopricki, 1996).

### 2.2. Conclusion

The above review reflects that even though there is a criticism regarding the applicability of this industrial concept to education, it is ultimately found that both developed as well as developing countries have incorporated this quality initiative in education, with arresting outcomes.

In the early days of quality initiatives in Indian organizations, the outcome was not what was desired. The reasons for failure cited are (Hutchins 1985, Udpa 1994 and Jaycox, 1996):
• Resistance to a new concept (a Japanese concept that will not suit Indian milieu)
• Lack of management support
• A fear of loss of authority by the management
• Members may feel ‘used’ and mistrust the management.
• No time, and an overwhelming workload
• Skepticism among employees, workers with personal grievances
• Not a team player and an ‘I don’t care’ attitude
• A low self esteem, a belief that one’s ideas are not so important.
• Selection of QCC members, leaders and problems by management
• Short- term objectives, emphasis on faster results
• Incompetent QCC leadership and lack of supportive facilities.

The following are some of the suggestions in order to make quality initiative work (Ingle 1985, Dey 1988 and Chandra & Janakiram 1992):

• Right, conducive conditions for acceptance of the concept
• Preparation for unforeseen risks, appropriate publicity
• Avoidance of too much paper work
• Support for QCCs from the top management
• Competent middle management and committed, receptive and cooperative workers
• Availability of technical literature and relevant data
• Financial assistance and availability of training facilities.

Hence, the need of Quality Assessment as a tool to measure the overall personality of the school. The findings of such assessments are expected to help the administrators to utilize and mobilize the human potential in the best possible way on the one hand, and to help the teachers as well as schools work for their all-round development in a consistently planned way, on the quality of schooling through their respective efforts.