schools across Ahmedabad. This is followed by enlisting limitations of study and future scope.

2 TQM Overview and Select Literature Review

2.1 Prologue

After research background elucidated in the first chapter, this chapter reviews the related literature which underpins this research. The purpose of the literature review is to relate to present works on methodologies to quality practices, quality management, adoption of models of quality practices, and relation between production, services and performance with quality. The books, published articles and electronic sources have been explored to extract the information in the field of TQM in various sectors. The study of literature review seeks to bridge the understanding of the existing knowledge about TQM and its practices and identifying the research gaps in knowledge of quality.

Figure 2-1: Roadmap of Literature Review

As seen in Figure 2-1: Roadmap of Literature Review in this chapter, the literature review familiarises with the concept of quality and TQM. Further, TQM notion as seen
by different quality gurus is represented, followed by series of definition of quality by various authors. Description of the well-recognized International and Indian quality award models and the key tools and practices adopted for TQM study are discussed. The researcher advances with the synthesis of literature reviews of the theory of quality and TQM in varied areas of business and services followed by the identification and the explanation of the key dimensions of TQM as perceived by various authors. Lastly the cause for failure in TQM is discussed.

2.2 TQM an Overview

2.2.1 Quality

The quality movement can trace its roots back to medieval Europe, where craftsmen began organizing into unions called guilds in the late 13th century. Quality was controlled to a large extent of the training required by the guilds (Sarkar, 2000). Further, this training resulted in quality of products which instilled pride in workers. Until the early 19th century, manufacturing in the industrialized world tends to follow this craftsmanship model (Ho, 2002). In the early 20th century, manufacturers began to include quality processes through quality practices. After the United States entered World War II, quality became a critical component of the war effort. The fuse of quality revolution was ignited by W. Edwards Deming, a disciple of W. A. Shewhart, who pioneered statistical process control. Further, Deming gave series of lectures and training to the Japanese engineers on statistical methods and quality responsibilities. The concept to emphasize on management responsibilities to achieve quality was given by Joseph M Juran in his trip to Japan in 1954 whereby, the Japanese set the quality standards for the rest of the world to follow (Besterfield, Dale H; Besterfield, Carol; Besterfield, Glen H; Besterfield, Mary;, 2001).

To successfully implement any change in process, we must address the systems in our business and the basic behaviour of our people to facilitate the change. The interest in quality extends into every competitive business and industry. Quality has been described as "The single most important force leading to the economic growth of companies in international markets." (Feigenbaum, 1982). A quality which is largely used in various contexts having its own meaning is an elusive concept. It is interpreted in many different ways as it is influenced by different people involved in it. The concept
of "quality" has been considered throughout history and endures to be a topic of intense interest today. Deming believed that responsibility for quality management should lie on the shoulder of everybody in an organization (Shroff & Dave, 2012). Deming’s philosophy is prone to put quality in human terms. When a firm work force is committed to doing a good job and has a soled managerial process in which to act, quality will flow naturally (Arcaro, 1977); (Shroff & Dave, 2012).

Quality is the single most important issue in education, business and government today. Changing form detection to prevention requires not just the use of a set of quality management tools and techniques, but the improvement of a different functioning philosophy and approach, which requires a transformation in management style (Shroff & Dave, 2014). Quality planning and improvement truly begin when top management includes prevention in the organizational policy and objectives, and starts to integrate the improvement efforts of various departments. Quality was initially taken into consideration in industry, manufacturing unit, and government but, nowadays it is focused in service sectors and academic area is one among them (Shazli, 2012).

2.2.2 Concepts of TQM

The birth of total quality in the United States came as a direct response to the quality revolution in Japan following World War II. The Japanese welcomed the input of Americans Joseph M. Juran and W. Edwards Deming and rather than concentrating on inspection, focused on improving all organizational processes through the people who used them. By the 1970s, U.S. industrial sectors such as automobiles and electronics had been broadsided by Japan’s high-quality competition. The U.S. response, emphasizing not only statistics but approaches that embraced the entire organization, became known as TQM.

TQM is both a philosophy and a set of controlling principles that represent the footing of a continuously improving organization. TQM is not a program, it is a process which is continuous, involves everyone in an organization, and links business process. Further, to meet their customers’ needs and expectations TQM helps in cooperating to furnish products and services. In the accomplishment of total quality in the organization the human resource element is very essential. TQM is the catalyst which has helped turn the company in terms of profitability and customer perceptions. TQM utilizes both
quantitative methods and human resource practices to improve material and service inputs, intra and inter organizational processes, and to sharpen the focus on meeting customer’s needs.

TQM may be defined as a continuous quest for excellence by creating the right skills and attitudes in people to make prevention of defects possible and satisfy customers/users totally at all times. TQM is an organization-wide activity that has to reach every individual within an organization. (Oakland, 2001), has defined TQM as follows: “Total Quality Management TQM is an approach to improving the effectiveness and flexibility of business as a whole”. It is essentially a way of organizing and involving the whole organization; every department, every activity, every single person at every level.

By the last decade of the 20th century, TQM was considered a fad by many business leaders. But while the use of the term TQM has faded somewhat, particularly in the United States, its practices continue. In the few years since the turn of the century, the quality movement seems to have matured beyond Total Quality. New quality systems have evolved from the foundations of Deming, Juran and the early Japanese practitioners of quality, and quality has moved beyond manufacturing into service, healthcare, education and government sectors. (http://asq.org, 2015)

Over the past few decades, quality gurus such as Deming (1986), Juran (Juran and Gryna, 1993), Crosby (1979), Feigenbaum (1991), and Ishikawa (1985), the primary authorities of TQM have developed certain propositions in the field of TQM, which have gained significant acceptance throughout the world. Their insights provide a good understanding of the TQM philosophy, principles, and practices. After careful study of their work, it has been found that these quality gurus have different views about TQM, although some similarities can be found.

In the field of TQM implementation, much research has already been conducted, different researchers adopting different definitions of TQM. The concept is still a subject of debate (Easton & Jarrell, 1998), still a hazy and ambiguous concept (Dean & Bowen, 1994); (Zhang, 2000). Thus, averaging TQM has come to different things to different people (Hackman & Wageman, 1995); (LEE, 2010). Dean & Bowen, 1994; (Schonberger, 1992) emphasised that TQM definitions are founded on three principles
namely, customer focus, continuous improvement, and teamwork. There has been much debate as to what constitutes better service quality and how its measures can be operationalized in various service industries, yet no consensus has been reached (Kaur & Singh, 2011); (Chowdhary & Prakash, 2007).

However, TQM may also be viewed functionally as an integration of two basic stages, total quality control and quality management, based on the detection approach to the management of quality (Dale & McQuater, 2001).

- Total quality control looks for long-term success strategy for organizations. The main indicators of total quality control are product quality assurance in all its stages, Customer satisfaction, employee satisfaction, and innovation and continuous improvement.
- Quality management is an approach of planning, establishing and guiding that will facilitate and integrate the capabilities of all employees for continuous improvement of anything and everything into an organization to attain excellence.

Figure 2-2: Source: (Rapersad, 2005); (Dale & McQuater, 2001); (Sarkar, 2000)
To improve the entire organization gradually, in a systematic and structured manner, TQM is the only method used to achieve it. Applying TQM method, on the basis of hard work, discipline, intensive training, and consistent implementation of resources and tools and techniques success is achieved. If all the employees in an organization masters the quality attitude, mentality, and skills, help to enhance TQM. Further, continuous learning and improvement process is cyclic, iterative, and never-ending activity (Rapersad, 2005). The change in the evolution can be seen as a logical extension of the way quality has in figure 2.2 has progresses.

Thus, TQM transports all the people together unitedly in an organization to ensure and improve working culture, product-process quality, and lastly the work environment (Kaur & Singh, 2011). The following section traces the development of definition of quality as seen by gurus, as it gears towards understanding quality.

### 2.2.3 Review to TQM from Quality Gurus

The movement of quality revolution to TQM had started way back in 1950 from Japan following the Second World War. If quality is important, so are the people that propound (Ho, 2002). The TQM movement was first inspired, with a substantial contribution by two Americans, Dr. W. Edwards Deming (1986), Dr. Joseph Juran. Further, it was sustained by Phillip B. Crosby (1979), regarded as the "management gurus" in the quality revolution. These three "quality gurus" together along with Feigenbaum (1991) and Ishikawa (1985) directed the improvement of the current set of management tools within TQM (Lukhwareni, 2007) As the definitions of TQM vary from different gurus, so do the components and philosophies of TQM. Many researchers and authors have discussed the essential elements advocated in the writings of the quality gurus. (Boon, 2013); (B. H. Yeap, 2008); (Al-jalahma, 2012); (Ciptono, 2011). Most of the business organisations have been influenced by the writings of (E. Deming, 2000); (Crosby, 1979) in order to comprehend the prerequisites for effective TQM implementation. Although different concepts exist among the scholars, the similarity is that all of them focused on quality enhancement. Their methods and viewpoint are famous today and have obtained good evaluation by the global organizations. Here, in Table 2-1 the approaches of arguably the top five/ four gurus of TQM - Crosby, Deming, Armand V. Feigenbaum; Ishikawa and Juran are discussed below.
<table>
<thead>
<tr>
<th>Guru</th>
<th>Philosophies</th>
<th>Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walter A. Shewhart</td>
<td>• Contributed to understanding of process variability.</td>
<td>• Stressed that eliminating variability improves quality</td>
</tr>
<tr>
<td></td>
<td>• Developed concept of statistical control charts.</td>
<td></td>
</tr>
<tr>
<td>W. Edwards Deming</td>
<td>• The best known of the “early” pioneers, is credited with popularizing quality control in Japan in early 1950s.</td>
<td><strong>Deming focus on 5 ideas</strong></td>
</tr>
<tr>
<td></td>
<td>• Taught methods for statistical analysis and control of quality to Japanese engineers and executives.</td>
<td>• Statistical process controlling (SPC)</td>
</tr>
<tr>
<td></td>
<td>• Best known for his management philosophy, establishing quality, productivity and competitive position</td>
<td>• Deming philosophy</td>
</tr>
<tr>
<td></td>
<td>• Stressed management’s responsibility for quality.</td>
<td>• Deming 14 points theory to guide companies in quality improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Deming Cycle (for continuous improvements)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Seven deadly diseases of quality</td>
</tr>
<tr>
<td>Joseph M. Juran</td>
<td>• His beliefs that “quality does not happen by accident” gave rise to the quality trilogy.</td>
<td><strong>Juran Ideas are</strong></td>
</tr>
<tr>
<td></td>
<td>• Defines quality as fitness for use in terms of design, conformance, availability, safety and field use.</td>
<td>• Quality definition</td>
</tr>
<tr>
<td></td>
<td>• Focuses on top-down management and technical methods rather than worker pride and satisfaction.</td>
<td>• Breakthrough concept</td>
</tr>
<tr>
<td></td>
<td>• Taught the concepts of controlling quality and managerial breakthrough.</td>
<td>• Internal customer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Quality Trilogy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Pareto analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cost of quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Quality council</td>
</tr>
<tr>
<td>Armand V. Feigenbaum</td>
<td>• Feigenbaum concepts of Total Quality Control, known today as TQM, combines management methods and economic theory with organizational principles.</td>
<td><strong>Feigenbaum three elements to quality</strong></td>
</tr>
<tr>
<td></td>
<td>• Believes that quality has become the single most important force leading to organizational success and growth.</td>
<td>• Quality Leadership</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Modern Quality Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Organizational Commitment</td>
</tr>
<tr>
<td>Guru</td>
<td>Philosophies</td>
<td>Idea</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Philip B. Crosby            | - Well-known as the Fun Uncle of the Quality Revolution.  
- Excellence in finding a terminology for quality  
- Popularized the idea of the "cost of poor quality", that is, figuring out how much it really costs to do things badly.  
- Promotion of zero defects paved the way for quality improvement in many companies.  
- Quality is **defined** as conformance to requirements, not “goodness”.  
- The **system** for achieving quality is prevention, not appraisal. | *Crosby four absolutes ideas are*  
- The definition of quality is conformance to requirements.  
- The system of the quality is prevention  
- The performance is zero defects  
- The measurements of quality is the price of NON-conformance |
| Kaoru Ishikawa’s.          | - Best known for the Ishikawa or cause and effect diagram (also known as fishbone diagram) that are used in the analysis of industrial process.  
- Synthesis of the philosophy contributed to Japan’s ascendancy as a quality leader. | *Kaoru Ishikawa’s seven basic tools of quality*  
- Pareto analysis  
- Cause and effect diagrams  
- Stratification  
- Check sheets  
- Histograms  
- Scatter charts  
- Process control charts |
| Genichi Taguchi             | - Focused on product design quality.  
- Developed Taguchi loss function  
- Listed continuous quality improvement at the highest |                                                                                                                                                     |
| Bill Smith                  | - Increasing profitability by reducing defect  
- Approach for improving is to involve the people who are doing the job. |                                                                                                                                                     |

Source: 1 The Certified Manager of Quality/Organizational Excellence Handbook, pages 290-291.  
2. (Rapersad , 2005); (Westcott, December 2005).
According to (Rapersad, 2005), the ideas broadcasted by quality gurus are seen to be divided into four eras as firstly, The Americans took the message of quality from the gurus (W. Edwards Deming, Joseph M. Juran, and Armand V. Feigenbaum) to the Japanese in the early 1950s, followed by Kaoru Ishikawa, Genichi Taguchi and Shigeo Shingo from the late 1950s. Philip Corsby, Tom Peters and Claus Moller concentrated on Quality Awareness from 1970s onwards and lastly, Bill Smith to increase profitability by reducing defects Motorola used strategy based on Six Sigma methodology.

In summary, the common thrust of quality gurus mainly emphasize on reduction in variations to improve the underlying work process and organization system, focuses on overall processes for attaining quality each level within an organization for a success, concentrate on the products specification itself, improvement in the quality management process which leads to Zero Defects. Further, by implementing these idea in organization will probably affect the productivity, management, and performance of the organization. Although diverse concepts exist among the gurus on largely what is necessary for TQM implementation, the similarity is that all of the ideas of the quality gurus strongly focused on quality enhancement. Their methods and viewpoint are famous today and have obtained good evaluation by the global organizations.

2.2.4 Definition of TQM

Extensive work has been done about TQM. However, it is evident from the literature that different researchers have adopted different definitions and frameworks based on the context of application or the theme of the research. This has resulted in many debates and some lack of agreement on what TQM is, and how it can be used effectively. Therefore, it is necessary from the outset to examine the broad nature of the TQM paradigm, before examining more specific various TQM practices (Al-jalahma, 2012). Table 2-2 presents some salient definitions of TQM found in the literature (Kaur & Singh, 2011).
<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Author</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grant and Leavenworth</td>
<td>It is convenient to think of all matters related to quality of manufactured product in terms of these functions of specification, production, and inspection.</td>
</tr>
<tr>
<td>2</td>
<td>(S. K. Ho &amp; Fung, 1995)</td>
<td>TQM is a way of managing to improve the effectiveness, flexibility, and competitiveness of a business as a whole and a method of removing waste, by involving everyone in improving the way things are done</td>
</tr>
<tr>
<td>3</td>
<td>(Kanji G. K., 1990)</td>
<td>The way of life of an organization committed to customer satisfaction through continuous improvement. This way of life varies from organization to organization and from one country to another but has certain principles, which can be implemented to secure market share, increase profits and reduce costs</td>
</tr>
<tr>
<td>4</td>
<td>(Kanji &amp; Asher, 1996)</td>
<td>TQM is a continuous process of improvement for individuals, groups of people, and whole firms that encompasses a set of three principles- delight the customer, fact and people based management and continuous improvement</td>
</tr>
<tr>
<td>5</td>
<td>(Holicky, 1997)</td>
<td>Quality is concerned with meeting the wants and needs of customers</td>
</tr>
<tr>
<td>6</td>
<td>(Flynn, Schroeder, Flynn, Sakakibara, &amp; Bates, 1997)</td>
<td>TQM is an integrated approach to achieve and to sustain high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels and in all functions of the firm, in order to meet or exceed customer expectations</td>
</tr>
<tr>
<td>7</td>
<td>(Jablonski, 1997)</td>
<td>A cooperative form of doing business that relies on the talents and capabilities of both labour and management to continually improve quality and productivity using teams.</td>
</tr>
<tr>
<td>8</td>
<td>(Berry, 1991)</td>
<td>TQM process as a total corporate focus on meeting and exceeding customer’s expectations and significantly reducing costs resulting from poor quality by adopting a new management system and corporate culture</td>
</tr>
</tbody>
</table>
From the above table 2-2 it can be seen that there is certain miscellany in gist, application and structures of TQM described by various researchers in so several different ways. Further, as stated by (Pheng, 1996), that there is no single, universally acceptable definition of TQM which managers can adopt. To this he added, that no individual author can claim a domination of the set of concepts or ideas which add to the overall philosophy and practice of TQM. However, based on scrutinizing and examining these definitions of TQM found in the literature, one is able to reasonably conclude that TQM can be defined as a philosophy or approach that involves the focus and application of product reliability, inspection of product and services, quality management principles, practices and techniques to all areas of the organisation including production, management, employees, customers and suppliers and their incorporation with the key business processes (Kaur & Singh, 2011). TQM is both a philosophy and a set of guiding principles for managing an organisation to the benefit of all stakeholders. It is a continuous improvement approach that focuses on doing things right first time in order to meet the needs and expectations of both external and internal customers.

2.2.5 TQM Tools and Techniques

As explained by various gurus and varied definitions of quality and TQM it is understood that, TQM can be achieved by removing variations and defects continuously from an organization. Hence, all employees in an organization are equally responsible for attaining TQM. A proper training should to be given to all employees to identify and correct quality problems. They need to understand how to assess quality by using varieties of quality control tools and techniques, how to interpret findings, and to correct problems. Different quality tools and techniques should be studied and applied to understand TQM process as they are extremely useful in identifying and analysing quality problems. Without the effective employment and mixture of tools and techniques, it will be difficult to solve problems and make improvement (Dale & McQuater, 2001). It is seen that mostly workers use only one tool at a time, but often a combination of tools is most helpful to achieve business results.
Table 2-3 Common tools and techniques used in TQM

<table>
<thead>
<tr>
<th>The seven basic quality control tools</th>
<th>The seven management tools</th>
<th>Other tools</th>
<th>Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause and effect diagram / analysis</td>
<td>Affinity diagram</td>
<td>Brainstorming / brain writing</td>
<td>Benchmarking</td>
</tr>
<tr>
<td>Check sheet / concentration diagram</td>
<td>Arrow diagram / critical path analysis</td>
<td>Control plan</td>
<td>Departmental purpose analysis</td>
</tr>
<tr>
<td>Control chart</td>
<td>Matrix diagram</td>
<td>Flow chart / process modelling</td>
<td>Design of experiment / Taughi methods</td>
</tr>
<tr>
<td>Graphs / chart</td>
<td>Matrix diagram analysis method</td>
<td>Force field analysis</td>
<td>Failure mode and effects analysis</td>
</tr>
<tr>
<td>Histogram / tally chart</td>
<td>Process decision programme chart</td>
<td>Questionnaire</td>
<td>Fault tree analysis</td>
</tr>
<tr>
<td>Pareto diagram</td>
<td>Systematic diagram / tree diagram</td>
<td>Sampling</td>
<td>Poka yoke (mistake proofing), Problem solving methodology</td>
</tr>
<tr>
<td>Scatter diagram / regression / correlation</td>
<td></td>
<td>Quality costing</td>
<td>Quality function deployment (QFD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality improvement teams / quality circles</td>
<td>Statistical process control (SPC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vendor assessment and rating</td>
</tr>
</tbody>
</table>

(Source: (Dale & McQuater, 2001); (Kanji & Asher, 1996)).

TQM involves application of the right tools at a proper time in the organization for the continuous improvement of quality. Therefore, depending on the type of business, either in manufacturing or service sectors having varied quality of employees, management process, different culture and the customer profile, each organization may require a different mixture of tools and techniques. Some of the tools and techniques those are available for TQM implementation as seen in Table 2-3. (Dale & McQuater, 2001); (Rajaram & Sivakumar, 2008). Tools
and techniques are the generic terms which can be applied to both product service and product quality as they are the corner stones of continuous improvement. If tools and techniques are not used in a structured way, the employees or management will tackle a problem and further focus on the symptoms but will never be able to identify the root cause and later put them in place for a long-term corrective action, thus improvements are likely to be random and unplanned rather than reliable and comprehensive (Dale & McQuater, 2001).

2.2.6 TQM Awards

To emphasize on quality at the paramount, the corporate executives wrestle with the question, “what is the ‘measuring stick’ for quality?” (Jablonski, 1997). The answer varies from company to company. To promote awareness of quality product, to recognize quality achievements, and to publicize successful quality strategies the U. S. companies formally started giving awards. Generally on an annual basis or periodically, to accelerate and facilitate the application of TQM in the industry a number of quality awards are given in various countries.

Universally, as a frame work for TQM implementation, late in 1990s, many organizations have applied the business excellence models for promoting and recognizing quality in an organization. To promote quality worldwide, there are a number of internationally recognized Quality award models, the main ones being the Deming Application Prize (1996) in Japan, the Malcolm Baldrige National Award (1999) (MBNQA) in America and the European Quality Award (1994) (EQA) in Europe (LEE, 2010); (Abusa, 2011). Each award model is based on a perceived model of TQM and has its own characteristics. Although there are some differences between the models, they have a number of common elements and themes. Further, there are number of National Quality Awards (NQAs) along with Business Excellence Models (BEMs) which are the national and regional awards, more or less replicas of the international models. Little modification in criteria of selecting awards are as per issues which are of national or local interest. Quality certification under ISO 9000 is not a quality award. An organization could receive the ISO 9000 certification, if an
organization fulfils the requirements of the ISO 9000 standards, which will be certified by an authorised certifying agency.

In contrast, the quality awards are limited in number. Organization practicing TQM principles are only given these awards. An organization receiving any of these international or national awards will indicate that it is practicing TQM and has achieved significant success in the implementation of the same. The broad aims of these awards are described as follows (Al-jalahma, 2012); (Ghobadian & Woo, 1996); (Jablonski, 1997).

- Increase awareness of TQM and recognizes companies that attain leading quality leadership.
- Contribute to superior competitiveness.
- Encourage systematic self-assessment against quality standards and expectations and market awareness simultaneously.
- To facilitate sharing and communication within the organization to have a common understanding of important quality requirement.
- Promote understanding of the requirements for the attainment of quality excellence and effective deployment of TQM
- Encourage organizations to acquaint with a continuous improvement process. Each award model is based on a perceived model of TQM.

The award models do not focus solely on either product, service perfection or traditional quality management methods, but consider an extensive range of management activities, performance and processes that influence the quality of the final contributions (Ghobadian & Woo, 1996). A beneficial audit framework against which firms can gauge their TQM implementation practices, pursue improvement opportunities, and achieve the end results is provided by giving the awards.

Some of the other popular awards are the Canadian Awards for Business Excellence, and Australian Quality Awards. Few of the Indian quality awards are Rajiv Gandhi National Quality Award (RGNQA- 1991), CII-EXIM Bank Award for Business Excellence (CII-EXIM- 1994), IMC Ramkrishna Bajaj National Quality Award (IMC-RBNQA - 1996) and Golden Peacock National
quality Award (GPNQA-1997). Most widely recognized award models are the MBNQA, European Foundation for Quality Management (EFQM) and Deming prize. These three quality award models provide a universal framework for evaluating aspects of TQM practices in a firm are detailed in Table 2-4. They also provide a framework for identifying a range of intangible and tangible processes that influence the firm’s TQM implementation and the end results (Al-jalahma, 2012).

Table 2-4 Different TQM Award

<table>
<thead>
<tr>
<th>Award</th>
<th>Purpose</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Deming Prize Japanese in 1951</td>
<td>To spread the quality gospel by recognizing performance improvements flowing from the successful implementation of firm-wide quality control based on statistical quality control techniques</td>
<td>This checklist emphasizes the importance of top management’s active participation in quality management activities and understanding of the main requirements of quality improvement programmes. It also provides senior executives with a list of what they need to do.</td>
</tr>
</tbody>
</table>
| The European Quality Award was officially launched in 1991. | The purpose is to support, encourage, and recognize the development of effective TQM by European firms. The EFQM Excellence Model is used as a basis for self-assessment, an exercise in which an organisation grades itself against a given criteria. | • 9 criteria of the model helps to understand and analyse the cause and effect relationships between what organisations do and the results they achieve.  
• The model is divided into two parts  
1. Enablers -(Leadership; Policy and Strategy; People; Partnerships and Resources; Processes)  
2. Results - (Customer Results; People Results; Society Results; and Key Performance Results). The 'Enabler' criteria cover what an organisation does and how it does it. The 'Results' criteria cover what an organisation achieves (www.efqm.org) |
### The Malcolm Baldrige National Quality Award

**Award**

To promote an understanding of the requirements for performance excellence and competitiveness, improvements and to promote the sharing of information on successful performance strategies.

**Criteria**

- The criteria for performance excellence are available in business, education and health care divisions.
- The model assess
  - firms’ current quality management practices,
  - benchmark performance against key competitors
  - world class standards
  - Improve relations with suppliers and customers.
- Model framework includes:
  - Leadership
  - Strategic Planning
  - Customer and Market Focus
  - Measurement Analysis, and Knowledge Management
  - Workforce Focus
  - Process Management

Source adapted from: (Al-jalahma, 2012); (Abusa, 2011); (Ghobadian & Speller, 1994); (Ghobadian & Woo, 1996); (www.nist.gov, 2008); (www.efqm.org, n.d.)

Even though each award has its own unique criteria for selection, there are some common areas such as TQM implementation and successful business results. Emphasize on TQM indicators as leadership, human resources management, employee participation, employee education and training, process management, strategy and policy, information, supplier quality management, and customer focus are given much importance. The Award Criteria are directed to highlight main requirements for delivering ever-improving value to customers, and simultaneously to maximise the overall productivity and effectiveness of the delivering organization (Jablonski, 1997). Finally, these models focus into the practical way of applying TQM, and providing a better understanding of the theory of TQM.

### 2.3 Classification of Literature Review

The research on TQM has identified numerous studies across the world. TQM has the potential to increase quality of product produced, productivity,
competitiveness, organizational effectiveness and organizational performance. TQM is a management system that takes into responding to all the areas of the operation of an organization. Several research have been conducted mostly in the developed world to determine the relationship between quality management, productivity, profitability, practices and performance.

The literature was look over using the principles of inferential reasoning, where care was taken to use all the facts published in articles, thesis, and standard journals. To review the published literature, the common methods of content analysis have been surveyed (Sahu, Shrivastava, & Shrivastava, 2013). Furthermore, the purpose of current review was to outline critical factors of TQM methodology that can be applied in future for addressing various and divergent quality aspects of primary school education. Based on the review, the paper has been divided in distinctly different sections. The review of literature of current section provides a comprehensive study of the understanding of the implementation and practices of the TQM in various fields that have been categorized distinctly in different area as shown in

Figure 2-3: Three major areas in Literature Review.
2.3.1 **TQM in manufacturing units.**

(Forker, Mendez, & Hershauer, 1997) studied that empirical studies of quality management have led to mixed findings regarding a significant positive relationship with performance. The author has used both nonlinear (DEA) and linear (regression) statistical tools for analysis to demonstrate TQM practices that are related to good performance. The eight elements are: Training, Management leadership and quality policy, Design of Product or service, Supplier quality management, Quality data and reporting, Process Management, Employee relations, and Role of the quality department. To achieve the final goal of consumer satisfaction, they believe that these practices must be implemented all the way through the supply chain. TQM in upstream (supplier) operations is particularly important for assuring downstream quality results. They establish this relationship using objective (not self-reported) quality performance data. The author claims that this was the first study to use objective quality data collected by a third party. The finding should encourage manufacturers to continue promoting TQM practices throughout the supply chain as certain practices do lead to better performance.

An instrument for measuring TQM implementation in manufacturing-based business units in India was carried out by (I. Joseph, Rajendran, & Kamalanabhan, 1999). The objective of the author’s paper was to describe an empirical research on the development of an instrument for TQM implementation in business units in India. TQM is an integrative management philosophy designed at continuously improving the quality of products and methods to achieve customer satisfaction. The TQM literature is complete with practitioner oriented ‘do-everything-right’ articles and case studies. This study offers a set of critical factors as quality policy, human resources management, operating procedures, supplier integration, product design, organizational commitment, quality information systems, technology utilization, and role of
quality department and training with a total of 106 operating system elements of quality management as a complete measure of TQM operation. This study is perhaps the first of its kind in terms of the development of an instrument for the identification of critical factors of TQM in manufacturing-based business units in India.

(Santos-vijande & Alvarez-gonzalez, 2007) purpose of research was to develop a device for measuring TQM implementation following the European Foundation for Quality Management Excellence Model and to offer realistic evidence on the relationship between management practices and methods of business performance in the model. The study works on survey data collected from Spanish manufacturing and service companies. To check the properties of the measurement scales Confirmatory factor analysis are used and the hypothesized relationships between TQM practices and organizational performance are inspected using structural equation modelling. The findings of the research designate that the adoption of the TQM practices suggested in the EFQM Excellence Model allows firms to outperform their competitors in the results criteria included in the Model. The finding of this paper provides a valued benchmarking data for firms as it validates the EFQM Enabler’s contribution to the achievement of competitive advantage.

An attempt was made by (Sanjay Kumar, Mantha, & Arun, 2009) to identify scrap reduction by using TQM tools. To identify the desire workability authors studied a case which was carried out in one of the leading Indian industries manufacturing pre-stressed concrete steel strands (PC wire). It has major applications in bridges and construction industry. During their study the authors observed lot of scrap. Hence the authors focused on the study of scarp as their research. Reasons for scrap was found out by using TQM tools such as cause & effect diagram, brainstorming and Pareto analysis. The outcome of the study results that

- The majority of the scrap was left over non-conformity, rings, chheda and weld/wire damage.
- Scraps due to left over rings were compact gradually by compelling proper action.
• Reduction in scrap revenues directly saving in cost and growth in productivity index.

(Hoang, Igel, & Laosirihongthong, 2010) presents a comparative study on the relationship between implementing quality (TQM) and organisational characteristics as size, type of industry, amount of innovation and kind of ownership, in a newly industrialised country in South East Asia. The survey data from 222 manufacturing and service companies produced major findings. The analysis results, that industries in Vietnam have deployed certain TQM practices as customer focus and top management commitment at much higher ranks than others, that is to say information and analysis coordination, employee empowerment, education and training and process management. Further, it concluded that there is a clear difference in TQM practices by company size, type of industry, amount of innovation and kind of ownership. Higher implementation levels across almost all practices were observed in large companies except for teamwork and open organisation when compared to small- and medium-sized companies. TQM put into practise were statistically more significant in manufacturing companies compared to service enterprises, and companies having a higher degree of innovation also presented higher ranks of TQM practice implementation. In general, the low deployment of TQM practices in service industries, where TQM has been measured as order-qualifier, highlights the contests for Vietnam’s service industries that monitor TQM to effectively compete in the global marketplace.

(Ijaz, Dr. Kee, & Irfan, 2012) studied that in Pakistan, industry both in manufacturing and industrial sector are facing a number of internal as well as external challenges to withstand and maintain their survival. To overcome this situation quality is the only way that enables them to face these challenges by utilizing the available talents to gain the competitive edge. The author aims to investigate the relationship between quality management (TQM) practices and internal customer (employees) satisfaction at workplace. TQM focuses on providing quality and innovative product or services at the lowest cost first time and every time to their external customers but it cannot be realised without the satisfaction of internal customers’ means employees of the organization.
Among all the elements of TQM six most common basic TQM practices selected for his study were:

- Training and education
- Leadership role
- Empowerment
- Recognition and reward
- Staff involvement
- Cooperation and teamwork

The questionnaires were filled by only ISO implemented service and manufacturing organizations which includes 23 items representing six constructs that includes five constructs representing TQM practices and one construct representing internal customer satisfaction. Results of this study provide a strong relationship among TQM practices and internal customer satisfaction. The findings using the structural equation modelling as a statistical tool results that ‘soft’ aspects of TQM practices have a significant and positive impact on employee’s presentation and eventually, it leads towards employee’s job satisfaction. Further, it means that employees satisfied with their jobs are:

- Performing their task with more commitment and motivation which results to reduce absenteeism that ultimately reduces the reworks.
- More committed with their jobs as compare to other employees and it in return it creates loyalty with the organization that provides basis for organizational performance.
- Provides employees pleasure at their jobs and they are mentally relaxed and find pleasure to perform their duties which helps to create a healthy working environment in the organization for gaining sustainable advantages.

2.3.2 TQM in Service Sectors.

(Ook, 2001) in his dissertation calculated whether there was any progress in a Korean-American Christian Ministry through implementation of TQM within a period of six months. The area of the study was:
To establish up a system of implementing TQM

To bring quality improvement in ministry, under the TQM values:
- Leadership
- Training and education
- Measurement
- Teamwork
- Involvement

To measure the implementation process

For conducting this study, the researcher used the changed version of TQM Assessment Inventory. This inventory measured three main TQM elements; TQM tools and techniques, TQM customer quality, and TQM culture. The twelve members of the Planning Committee of the English Ministry of the Korean Protestant Church of Los Angeles became the sample for the TQMAI, while the population comprises the stakeholders of the English Ministry. The author has shown through the results of his study, that a 6-months period of implementation of TQM had some assorted effects on the members of the English Ministry, especially with respect to helping those involved with the ministry accepted the importance of developing the important areas of leadership, training and education, measurement and teamwork and involvement for the ministry's ongoing growth and changes for the future.

Youssef, Prof, Alhakim, & Manhawy, (2013) carried out study for testing the validity of the theoretical model for TQM critical success factors in hospitality Industry and their impact on Customer Loyalty. Authors in their research reviewed TQM as a management philosophy which emphasis on the work process and people, with the major apprehension for satisfying customers and improving the organizational performance. It highlights on totality of quality in all facets of an organization with the objective of reducing waste and rework to reduce cost and increase efficiency in production and service. The goal of the study is to test and validate the introduced theoretical model which later can provide guidance for managers, decision makers and quality practitioners targeting to implement TQM in 5-stars hotels business. TA group of five stars Egyptian hotels was used as an example of study for primary data collection,
SPSS approach was used for hypothesis testing. From the examination of the gathered data, it is obviously clear that the 10 TQM critical success factors are not effectively implemented in these hotels. The results can be temporarily described, that the low degree of implementation of the 10 selected TQM critical success factors caused a low level of perceived service quality, which in return directs to a low levels in both customers satisfaction and loyalty, and this proves that the proposed theoretical model is valid to be used.

A. Jain, (2013) examines the effects of TQM practices practiced by software organizations on perceptual HRM within India. A questionnaire was developed and administered to ascertain the level of influence by TQM practices on perceptual HRM outcomes. Data were analysed by using multiple regressions. The results shows that HRM, employee empowerment and organization culture are high participation TQM practices and have strongest impact on employee’s perceptual outcomes. The findings make a significant support to software industry that can be used to trail the extent of TQM effects on perceptual HRM. An institute could use this tool for pre-test baseline, and sometimes re-administer it to recognize changes related with TQM efforts.

Messaoud, (2014) attempted aims to know the extents of empowerment effect on the implementation of TQM in the Algerian Al Baraka Bank of the pond. The study is done on the leaders in the upper and middle levels in the bank only. Critical factors of TQM are Top management, Strategic Planning, Customer Focus, Effective communication, Evaluation, Training, involve employees, motivation as independent variable and Self-determination, Competence and Impact as dependent variable are studied in their research. The findings of the research found that 71 ℅ of the independent variable explain the dependent variable empowerment adoption of TQM from the standpoint of administrative leaders in the Algerian AL Baraka Bank.

A.Agus & Z.Hassan, (2008) investigates the effect of TQM practices on productivity and profitability in Malaysian electronics and electrical industry. The author has survey of 110 companies and statistical tools such as correlation, multiple regression analysis and path analysis are used. This study
• Confirms the significant impact of TQM variables in enhancing productivity and profitability.
• Provides evidence that improving internal practices will positively impact the most important performance measures.
• Indicates that electronics and electrical companies should put emphasis on attention to TQM aspects of the manufacturing process and a greater degree of management support for quality programs such as quality measurement, benchmarking and employee focus.

The TQM variables, specifically quality measurement, benchmarking and employee focus have significant direct effects on productivity. Benchmarking and supplier relations have positive and significant direct effect on profitability, and Productivity has a significant and direct effect on profitability and also agrees that Productivity mediates the linkage between TQM and profitability. In addition, training and education are also important in undertaking the change itself, preparing an institute for a change and institutionalizing it as a long-lasting portion of the organization.

An investigation of the performance indices in the food processing units were studied by (Chipandambira, Mugwindiri, & Chikuku, 2012). From the previous study author examines the presentation of the eighteen TQM success factors. The results of a study undertaken in the Zimbabwe processing industry and food manufacturing units in 2011 were used and also the knowledge that has been acquired. The paper also shows a hierarchy of the TQM performance indices of the survey industry and highlights the relationship of the success factors. In human resource management primary performance indicator which is comprised of employee empowerment and involvement, training and education, safety and health, employee satisfaction, motivation and human resource planning are studied. Process management (Primary Success factor) also includes production and inventory management, maintenance, quality control, quality assurance and environmental and safety management. However the results show that the Zimbabwe food manufacturing and processing industry during the time of research (2010-2011) mainly concentrated on the customer. As shown by the hierarchy ideas of quality assurance, benchmarking, customer
focus and process quality control are highly in position. Furthermore, conceptions which largely focus on the employee are put aside as highlighted by the hierarchy. Employee satisfaction, human resource planning, empowerment and involvement are truncated in ranking.

**Conclusion**

The preceding section discussed factors contributing to manufacturing and services within the context of management and leadership, motivation, employee management, and their impact on effective education. The subsequent section discusses the implementation of TQM methodology for studying different characteristics of education system in university, higher education, secondary and primary schools, as this will shed more light on the factors determining different quality levels in education.

2.3.3 TQM in Education System

2.3.3.1 Empirical Studies on Implementation of TQM in Education

A perspective on quality in education: the quest for zero defects was studied by Sayed 1993. Author has attempted to cross-examine critically some of the prominent aspects of the present dissertation on quality in education. It has been argued that the current dissertation is laden with particular political, ideological and value assumptions concerning the practice of education. Further, the article has also attempted to provide some indicators in reconceptualising the concept of educational quality. Day-to-day struggles of teachers and their unions are of equal importance in opposing the present understanding and practices of educational quality. The real challenge though is to struggle against attempts by the New Right establishment to erode the provision of social services as public goods and the attempt to create the conditions for a market-driven approach to education. The author thinks that to seek good private education it involves struggles by teachers, parents, students and others in education.

Dahlgaard, Kristensen, & Kanji, (1995) has made an attempt to study on TQM and education. Authors have introduced five key principles of TQM by using a new management pyramid called the TQM pyramid. The key elements studied are:
Leadership
Focus on the customer and the employee
Continuous improvements
Everybody’s participation
Focus on facts

These key principles are discussed in relation to quality in education. They studied an overall plan- do- check- act cycle called the PDCA leadership model which may be useful when trying to practise quality leadership in relation to education. Finally the common learning cycle is compared to the continuous improvement cycle (PDCA). The authors concluded that there is a real need for educational and training programmes to help management, students and employees with the knowledge and strongly believed that motivation is required for the above quality improvement process to be fulfilled.

Madsen, (1995) summarised conclusions from the international seminar and outlines of a feasibility study are presented as segments of a research programme on total quality in education. The objective of feasibility study of the programme is to produce follow-up strategies, based on the inferences of the seminar, in order to implement TQM principles and methodologies in educational institutions by imparting training activities for staff and educators. The agenda for a pilot project on implementing TQM in a Danish educational institution on the basis of the European Quality Award model is presented in the third section. In the fourth section, this assessment documents the applicability of benchmarking educational institutions to TQM criteria. Considerations in implementing TQM to education based on pilot experiences compared to our expectations are provided in the fifth section. These comparisons show some differences, mainly in favour of TQM implementation in the pilot institution. It was from their experience that educational people purposefully thinking hard when opposed with the perspective of customer satisfaction. When discussing customer focus, focus on facts and employee focus, it seems that these quality features are neither uncommon, inadequate nor excluded in this particular setting. Furthermore, based on the study it seems that educational institutions, when beginning to implement TQM, do focus on
employees, customers and facts by methodology, but, on the other hand, they have difficulties as far as the distribution phase is concerned. Involvement by all and continuous upgrading are not unmanageable dreams, and with proper education and training it looks as if these perceptions can be applied in educational institutions without more obstacles than in any other enterprise.

Schargel, (1996) has focused on why we need TQM in education. In his research he found that due to crises, TQM came into existence. After World War II, the Japanese economy was destroyed, and they had not much choice but to accept TQM. The dramatic loss of market share by American industry in the 1960s provided the impetus for the adoption of TQM’s return to its birthplace. The economy of the US is secured due to the success of the products of the public school system. The United Nations and the American government gathered data and there by designate that American public education was in crisis. Compared to the rest of the industrialized world US graduates consistently score at the bottom or near the bottom of most standardized examinations the description of the US public school system was like a business where the product reaching the end of the production process fails to satisfy the customer. To overcome this problem group of teachers took a quality training seminar conducted by National Westminster Bank USA attended an all-day workshop at the school. As a result, the staff wrote a mission statement for the school:

- The purpose was to provide quality vocational, technical, and academic educational programme that will maximize each student’s full potentiality in today’s changing technological society
- Prepare students to meet the challenges of our rapidly changing world.

The first area targeted for improvement was staff morale, delivered several training workshops. As a result of these the training, participants became familiar with the quality philosophy, the actions, tools and techniques that will help them to attain a better quality product and reduce failure. Internal customers who were recognized as employees, parents and students have become familiar with the quality philosophy. Finally, he concluded from this research that if the educational system fails to deliver qualified graduates as workers, then the business community will have three choices:
• To educate the new workers at a cost of billions of dollars
• To accept the low-down results
• To destroy all industrial production from the nation.

Application of TQM in education has been studied by (Farooq, Akhtar, Ullah, & Memon, 2007). The author analysed the thoughts of the modern management standard TQM, and its use in the arena of education. The elementary theme of TQM is participatory methodology to address the question(s) of quality in business as well as in the field of education. The summarised work of W. Edward Deming’s fourteen principles for quality assurance, fourteen points of Philip Crosby for quality management & the indication of zero defect, and J. Juran’s three components quality improvement, quality control and quality planning are conversed. The author further highlights that TQM philosophy can

• Encourage the students, teachers and the employees for extraordinary performance.
• Help schools or colleges in providing improved facilities to its primary customers, students and employers.

Summarizing, the author suggests that

• Continuous improvement focus of TQM is a necessary way of rewarding the answerability requirements shared to educational reform.
• Functioning with a no-fear TQM structure with a focus on continuous growth and improvement deals more enthusiasm and challenge to students and teachers than a better learning atmosphere can provide.

Using quality management procedures in education for managing the learner-centered educational environment research were carried out by (Stukalina, 2010). From the previous studies the author is in the opinion that the importance of quality management in education is increasing day by day. The main issue in managing for quality is in the field of education. An effective and motivating educational environment is one of the key tasks for education managers. Proper management of the educational environment presumes giving a particular attention to students’ needs and requirements so as to improve educational practice and enhance educational quality. Impact of effective educational environment motivates students for further studies. In this context, the author regards student motivation as an essential factor for the educational
environment quality improvement. Almost all quality management processes are counted in this paper that can be used by education managers so as to have qualitative changes in the educational surroundings. To better the calibre of the educational environment, several management tools are used and regular educational environment evaluation is one among them. It includes collecting student feedback, which is a valuable source of systematic input in the operation of the environmental quality enhancement.

Zabadi, (2013) is in the opinion that crucial role is played by higher education in the economic and cultural reconstruction and development of the nations. For years, effective educational systems and the universities are development factors and agents of revolution in their communities. Many students from Arab and foreign countries come to study in Jordan as it is one of the pioneer countries in higher education due to its credibility. Over the last few years, to improve the performance a lot of innovative experiments are being done and several laws and constitutions for both academic and educational standards are introduced which are aimed to further development and improve its ability to compete consistently by successive Jordanian governments. Understanding the importance of this sector for socio-economic and cultural development and for that it requires an ideal governance and service delivery, but the system of higher education in Jordan needs to be reshaped, the strength must be maintained and the weaknesses must be addressed and developed, to assist a different social order, to meet the national needs, and to react to a situation of new realities and opportunities. Through this portion of work, this research paper theoretical attempt to explain the implementation of TQM in higher education institutions in Jordan, and focus on the issues related to quality in higher education, and recognize variables influencing quality in this sector.

Brown, (2013) in his paper, provides a general idea of the major themes of the quality movement in the past 25 years along with some of the instructions learnt from this. The upcoming path of quality is then discovered by identifying a number of issues which are likely to influence on quality in organisations. The author has reviewed trends in the educational, specialised and commercial world around quality. The important results from the past 25 years of quality
are discussed along with the instructions from their experience. A number of present and future developments in the quality movement are identified and discussed. Emerging trends are identified which could provide the stimulus for future research. Instructions for managers and leaders on the mistakes which were committed in the past, and matters which they will need to deal with in the future are presented.

**Chizmar, (2014)** has focused on quality teaching management and learning. Author focuses on the management function of the teaching and learning process

- To know in which methodology teachers teach the students
- Keen in knowing what students have learnt.

He suggested that one possible way for achieving national goals for undergraduate education lies in the application of the ideas of TQM to the teaching and learning process. TQM has been defined in the article as the collaborative and holistic application of the ideas of the industrial TQM model to teaching and learning. TQM in teaching and learning emphasis, attention on the management function that changes teacher and student efforts into better learning. The influence of a TQM teaching and learning model suggests hypothesis regarding teaching strategies that increases learning and its importance on the quality of product, orientation to students, encouragement of teamwork, and a continuing desire to improve.

Why TQM programs fail has been studied by (Mosadeghrad, 2014) as an experimental approach. From the previous studies author identified the barriers to TQM successful implementation. He examined 54 TQM empirical studies and identified 54 obstacles to successful TQM implementation. Both theoretical and practical difficulties are there in applying TQM in an organization. The author after studying in details analysed primary reasons for TQM failure as

- Unproductive
- Inappropriate TQM implementation systems
- TQM package and an incompatible background for employing TQM
- Insufficient education and breeding
• Lack of employees’ participation, top management support
• Inadequate resources, deficient leadership, lack of a tone-oriented culture
• Poor communication
• Lack of a plan for change and employee resistance to the change programme.

The author suggests that TQM does provide superior performance when an appropriate model of TQM is suitably implemented in a supportive environment. The results of this paper deliver managers with a practical understanding of the issues which are likely to obstruct TQM implementation. Managers should overwhelm these obstacles to achieve the TQM benefits. Understanding the factors that are likely to hinder, TQM implementation will help organizations in planning improved TQM models.

Boaden (1996) has studied to know whether TQM is really unique or not. The author throws light on the development of TQM and the concept of management ‘fads’, and describes the development and definition of TQM by quality gurus and in number of approaches in various areas such as

• World class manufacturing
• Continuous improvement
• Business process re-engineering (BPR)
• Human resource management.

These methodologies are then matched with each other and with the ideologies and practices of TQM. It is resolved that customer focus is a main component of all methodologies, as is involvement and commitment of all employees, even though this is interpreted in different ways. Resulting from a statistical base TQM may be regarded as a substitute focus on a mutual set of management ideologies.

The information requirements of TQM has been studied by (Matta, Chen, & Tama, 1998). Authors argued that TQM implementation necessitates support on largely more information in the design, production and service activities of
firms. In the second section, they presented an outline of TQM information requirements with the help of data flow diagramming and recommended changes that occur in system usage within the three main organizational functions: planning organizational activities, making products and the selling of products. The contribution in presenting evidence, although subjective, from organizations at the front position of TQM practice, that TQM is an information-intensive management scheme, and then rising a model for the facts necessities in TQM.

Hafeez, (2007) provides a concrete link between TQM and organisation learning. Ten authors in the TQM field were studied by him to identify and map out eighteen elements relevant to TQM. TQM is recognised as the baseline. To map out a progressive relationship between key TQM indicators and organisation twenty eight elements were developed. He further identified five financial and fourteen non-financial factors to measure output performance. Data collected from twenty six companies tells that the main differentiating factors between TQM and learning enterprises are the type of learning tools in use and the information system in place. Also learning enterprises significantly leave behind the major wave TQM companies against the non-financial performance measures. They analysed that many European companies had a misconception that they were well set to become a learning organisation. Rather only four companies could be recognised as a learning organisation. It was quiet surprising that twelve companies were found to be in the intermediate stage between TQM and learning organisation. Whereas nine surveyed companies were still in the first wave of quality and had not yet boarded on a journey to become a learning enterprises. He argued that the background presented is based on complete academic supporting and could guide TQM companies to benchmark their hard work on a journey to become a learning organisation.

**Conclusion**

The preceding section discussed factors contributing to education within the context of organisation learning, teaching and learning process, identifying the quality check in education using Deming’s principle, plan- to check methodology and their impact on effective education. The subsequent section
discusses the characteristics of effective and quality education at university, higher education, secondary and primary school. As this will shed more light on the factors determining different quality levels in education.

2.3.3.2 Studies Concerning TQM in Higher Education and University

This section discusses the characteristics of quality in higher education with reference to various characteristics as employee satisfaction, leadership, managing teaching and learning performances, recruiting procedure, service quality and improving in teaching, and infrastructure. The synoptic debate of what creates an effective higher education in university is provided.

Zhang, (1997) has carried research in developing a TQM Quality Management Method Model at university. The author has done an extensive review of the external and internal environment of TQM literature affecting an organization’s quality performance and has identified eleven primary elements of TQM. After the detailed study the model describes the primary quality management methods which may be used to measure an organization’s present strengths and weaknesses with respect to its use of quality management methods. This model can also help an organization to decide which quality management method to implement.

To determine the relation between Higher education and TQM an attempt was made by Koch and Fisher 1998. Authors strongly believe that the use of TQM in higher education will definitely unite university grounds, rise employee satisfaction and improve closely any method that it touches. The evidence that TQM can be of assistance in improving administrative service areas (registration, mail service, maintenance, billing, etc.), and that it has been used to enhance certain quasi-academic areas such as library services. But significant problems which are faced by higher education today is to relate to the nature of the core curriculum, time taken by faculty, how to restrain increase in cost, distance learning and the usage of technology, helpful relationships with business, and governance and leadership activities. TQM has slight to say about these things and even builds refined roadblocks to change in these areas because of its strong importance upon meetings, consensus and process over product.
Thus, while TQM appears to have been quite helpful to some business firms, it is only slightly valuable in the rapidly changing, certainly revolutionary, environment that universities live in today.

TQM in UK higher education institutions was carried out by (G. Kanji, Malek, & Tambi, 1999). Author observed that in UK the progress of TQM is rather slow compared to few new universities for pursuing higher education. Though, these institutions have aided from a TQM procedure comparable to those in the US, such as student presentation, improved facilities, reduction in cost and customer satisfaction. The author in this paper examines how TQM principles and primary perceptions can be restrained to provide a means of estimating the quality of institutions on several aspects of their internal processes. The finding of the research is that the measurements of core models and TQM principles which are critical achievement factors, reproduce performance of institutions. The top management of the institution is informed on its performance over time and in comparison with other institutions. The measurement technique could be used by the quality assurers in the UK to calculate education quality of higher education institutions.

G. K. Kanji & Tambi, (1998) have carried out research on TQM and higher education in Malaysia. Authors conducted survey of Malaysian, American and European HEIs to find out essential information about their use of TQM in terms of the extent of TQM implementation; the driving factors for adopting TQM; the barriers to implementation; how the TQM process is evaluated; what critical success factors influence TQM results. The data was gathered to subsequently study to generate TQM model for HEIs in Malaysia that incorporates critical success factors. The critical success factors are

- Measurement of resources
- Leadership
- People management
- Internal and external customer satisfaction
- Continuous improvement
- Process improvement
Certain results that have been perceived so far are as follows. The primary execution of TQM was in 1992 and in 1978 quality control circles were executed. It was that all HEIs in Malaysia do not practice TQM and certain HEIs do not aim to device TQM in future. Few of the institute regard leadership as very essential in TQM implementation where as some regard it as the least important. The quality of processes are controlled by faculty members and administrators. Further, it was analysed that even the quality director has no control over the quality of methods.

The influence of TQM and higher education on the employers’ perspective were studied by (Willis & Taylor, 1999) . The fundamental purpose of TQM was to work for the customer’s betterment. One of the main customers of an educational institute is the firms that appoint the school’s graduates. This article explores how business employers perceive the quality of today’s college graduate. The role of TQM in higher education is discussed which is followed by an assessment of the skills that businesses desire in new hires and the ability of universities to fulfil those needs. The study was taken to decide:

- How companies measure the quality of graduates
- Whether or not they are able to identify the institutions that consistently produce superior or inferior employee candidates
- How well skill requirements match skill preparedness
- The overall quality of recent college graduates.

In general, a significant proportion of businesses does not perceive a difference in the quality of schools based on employee presentation. The suggestion in this study indicates that even though business employers are mostly satisfied with the college graduates that they have employed, but there is an opportunity for improvement on the part of institutions of higher learning to produce improved quality students. Majority of employers are under the impression that certain universities cannot be regarded as producing particularly inferior or superior employees. The study results also indicated that the university from which the employee obtains his/ her degree does not significantly encourage the hiring decision. Further, colleges need frequently to re-evaluate course offerings, grading measures, admission necessities, the employee skills, student services
and personal traits required by hiring firms. The challenge to academic world is to produce graduates that meet the desires of prospective employers.

Grygoryev & Karapetrovic, (2005) aim to introduce an integrated system for measuring, modelling, and managing teaching and learning performance in a university classroom environment. They have focused on four management tools, namely a statistical process control, performance measurement framework, and system dynamics, structural equation modelling to support professors address important teaching and learning performance management issues. Concentrating measurement efforts on teaching and learning processes, rather than focusing on outputs, such as the number of students passing a course, or outcomes were their findings. They mentioned that average test scores, agrees for early recognition of problems in the classroom setting. Based on the findings the proposed system can be practically implemented by individual professors for checking the learning performance of their students as well as their own teaching performance. Changes to the course structure, frequency of homework and assignments given or the size of in-class exams, will affect student attitude and performance towards the subject of the course may also be analysed by the Professors.

A new perspective for quality improvement in teaching and learning processes was done by Yeap 2008. The Author adopts and uses the principles from one of the Quality Management methods, TQM as the teaching methodology and improved agenda in managing, inspecting and increasing the quality of teaching and learning practices in higher education were focused. Using these Quality Management attributes into the educational equation will create value for educational institutions, employers, and students. He developed models to adopt a view, that quality teaching actively involves interactions and participations with the students that can make a significant difference to cause students to learn. He emphasizes that any continuous improvement effort should be operative, quality and trustworthy feedback evidence is essential and important in the evaluation procedure of Teaching and learning with the output should be clearly defined and measured. It calls for procedures that continuously collect, study, and act on client data.
Najafabadi, Fredriksson, & Eriksson, (2008) overall objective of his work is to highlight the principles of TQM intricate and to point out how this line has been and can be used to improve the quality of an academic institution. Their work has been specified for higher education of University College of Boars, and enclosed the entire institution, administrative arrangement, rather than academic region, specific database, department, or services. Their objective was conducted to an evaluation and assessment of the quality work of this university. They compared the way in which this university is working with quality issues now with a TQM approach and the weaknesses and strength of the quality work of this institution are recognized. Authors are aim to provide a complete documentation in its kind in the field of quality and TQM, which can enable this college to progress the quality of its higher education. From the findings it suggests that in order to improve its quality, the author emphasize that

- They must all know the concept of quality.
- Everyone involved in this work should be committed.
- Visions and smart goals need to be classified

The key personnel and people involved in the quality work should be trained. The researchers have expectation that this document could provide a complete understanding of the concept of quality in practice for this university college.

Determining research and development environment and TQM practices in Malaysian university using factor analysis (Jusoh, Yusoff, & Mohtar, 2008). The author in his paper discusses the applicability of TQM and proposes a hypothetical framework of TQM to garb the requirement of the Research and Development (R&D) environment. Grounded along the previous empirical studies, the proportions of the framework were valuation criteria of world standard such as EFQM, QMS ISO 9000, MBNQA, and quality theory from the experts. In parliamentary law to recognize the TQM practices in R&D environment, this report addresses the need for the study from the university researchers’ perspective. The outcomes from this study advise that the following seven dimensions are sufficient to explain the TQM practices in R&D context.
Further, he concluded that the 42% of variance was explained by top management leadership to confirm that in any quality management programme.

The application of a TQM approach to support student recruitment in schools of music has been done by Weinstein 2009. The author suggests that administrators should investigate the benefits of implementing a comprehensive TQM programme in their institutions. The challenge faced by the music programme administrators is that of recruiting students for their programmes. The core values, techniques and tools embodied in the TQM approach provide a proven approach to quality management and process improvement. The principles of TQM are described in the article and to overcome the problems in recruiting the students for music programme the efforts of a team of teachers and stakeholders of a mid-sized music department at a public university this TQM methods are applied. The findings shows that the application of quality management techniques have established significant consideration in higher education. Nevertheless, the skills, values and tools of TQM can be mainly relevant in a music school, where the philosophies of authority by the academic staff express an emphasis on employee involvement, and where that staff’s information of techniques and tools can support them to understand and develop the programme’s processes.

Ling, Lau, & Piew, (2010) have studied education quality process model and its influence on students’ perceived service quality. In their research authors have aimed to investigate the determinants of students’ perceived service quality for a private higher education institution in Malaysia which is based on the process model of education quality. The research findings do provide some understandings and feedback for the administrators of the higher education institutions in drafting various managerial strategies on how to increase the level of the students’ perceived service quality.
• The administrators should adopt a combined approach to develop factors in the process of evaluating the students’ perceived service quality.

• The administrators should not separate the models of education quality and the students’ perceived service quality for management decision-making.

The findings of the research found that they are positively interrelated to the students’ perceived service quality.

• Quality of librarians
• Staff awareness from the Division of Examinations and Awards
• Prospectus
• Amount of leisure activities
• The improvement model of education quality

In order to improve the students’ perceived service quality among the students, administrators are advised to device various strategies to increase and improve the process of delivering quality education to the students. The suggested strategies include: (1) the quality enhancement of the librarians in handling students’ enquiries, (2) the encouragement of staff responsiveness from the Division of Examinations and Rewards upon students’ requests; (3) maintaining the contemporary and practicality of the curriculum; and (4) increasing the amount of recreational activities provided to the students as part of the efforts to balance quality education.

Cappelli et al., (2010) carried out Statistical techniques for continuous improvement: a citizen’s satisfaction survey. For this purpose the author proposed a path analysis of data coming from a citizen satisfaction survey to support decision makers in quality service improvement. They aim to measure citizen’s satisfaction of an Italian local Public Administration regarding the “infant school (0-6 years) enrolment service”.

Application and analysis of TQM in colleges of education in Pakistan ware studied by (Akhtar, 2007). As per the previous literature reviewed author strongly emphasises that there is definitely a close link between the prosperity of a nation and the quality of education it offers to its people. The standard of living of people has been improved by quality education and thereby enhancing
the performance of engines of economic development. The study is focused on application and analysis of TQM in colleges of education in Pakistan. In this research TQM has been studied on five aspects

- Concerning infrastructure
- Management
- Examination
- Teaching
- Goals of B.Ed. program.

Findings concluded that both students and teachers agreed that the overall quality of education was poor. There was a minor difference in the attitude of teachers and students. Teachers reflect quality more at stake as compared to the students’ viewpoint. To educate the future teachers

- There should be highly qualified and experienced teachers in colleges of education
- Improved employment opportunities may be created for academics.
- The pay scales should be revised and attractive pay package should be given in order to overcome the problem of brain drain of teachers.
- Improvement in infrastructure, management techniques, examination, teaching and goals of B.Ed. program.

It has been suggested that the concerned authorities should take serious notice of the character of colleges of education in the development of teacher education in Pakistan and implement actual measures for its improvement.

Flores-molina, (2011) is motivated by the need for a systemic, efficient quality improvement methodology at universities as no methodology is designed for a TQM program in a university. The main purpose of this research is to develop a TQM Methodology that supports a university to expertly develop a vital TQM plan. The research emphasises on the need of cultivating the quality of universities, the study of the supposed finest quality universities, and the extent of the quality of universities through rankings. The author has used in various situations TQM models and standards provided by Baldrige, ISO 9000 Six
Sigma and educational accreditation standards found in ABET and SACS. The recommended methodology helps the user to change a TQM plan in five progressive phases as

- Assessment
- Commencement
- Analysis
- Approval
- Preparation.

The findings suggest that the need for a TQM Methodology is significant for universities, as they constantly need to meet the accreditation bodies’ and stakeholders’ expectation for continuous improvement. Further, their improvement has a direct impact on the quality of the society.

Implementation of (TQM) in the faculty of planning & management at Al-Balqa applied university has been researched by (Salameh, Alzyadat, & Alnsour, 2011). The author defines TQM as a philosophical system of governing bodies, improves organizational performance and administrative organizations. The complete objective of this paper is to climax the general principles and requirements of TQM and to draw attention to how this approach can be used to improve the quality of the academic institution. The exploration mainly included the implementation of TQM as a current methodology which is still limited in the Arab countries, mostly at higher education establishments. Teamwork, continuous improvement, integrated coordination, creativity and innovation are the elements of TQM philosophy. They have observed that the competent administrative leadership is the backbone for implementing TQM methodology. The findings also conclude that there was no concentration on continuous improvement, Teamwork and coordination, which lead to creativity and innovation. The results that appeared from the investigation directed that there was a weakness in training for administrative leadership in the universities and colleges which is necessary to the success of implementing this recent management approach. Learning, development and training played an essential role in growing technical and information skills to all participants of the
University institution. The author found that Malcolm Baldrige approach used in this study formed an excellent model of TQM.

Arif & Ilyas, (2011) studied the customer satisfaction, empowerment and leadership role of management and faculty in a Pakistani University to find out gaps in the distribution of technology integrated services in enrolment and advisory capacity accessible at the beginning of every new term at the University of Central Punjab in Lahore, Pakistan. They are also focused in finding the influence of the process of service delivery on customer loyalty and positive word of mouth, which is the key objectives for attaining quality. The result of the SEM model suggests that, as long as students lack independence and identify a lack of authorization of the faculty, their satisfaction with the enrolment and advisory services will be affected negatively and as a result of this, it results in negative outcomes on word of mouth. However, the analysis contributes toward enlightening the leadership approach of Pakistani management and faculty at private universities. The study identifies the challenges faced by the management in providing customer satisfaction with the services by approaching the problem from a changed viewpoint, i.e. leaders’ use of their cognitive properties and their relationship aiming on customer satisfaction. Research findings suggest that

- Dissatisfaction with technology included services is more frustrating than absence of the technology.
- Both the students and the faculty want to appreciate and take benefit of the emerging technologies and replacing the right for expressing need for more empowerment in use of advisory and enrolment services.
- Students who are the customer can be retained
- To buy the loyalty of customers in much better fashion than the traditional use of command and control tactics
- The leadership should also be aimed at empowerment of their employees.
- Effective leadership is essential thrust for continuous quality improvement.
Gambhir, Wadhwa, & Grover, (2012) have made an endeavour to find the critical factors for technical institution evaluation from literature survey. A Pareto analysis has also been executed to find the strength of these critical factors in assessing. The stakeholders will not only be benefited by taking right decisions, but will also help the management of institutions in benchmarking for identifying the most important critical areas to improve the existing system. They emphasized that technical institution evaluation is important for stakeholders, management as well as for a strong economy of India. The results of the Pareto analysis show that

- Top management is the most target factor in literature as the vision and policies of the top management are correct and in the best interest of stakeholders and the institution which is in the benefit of everyone.
- Faculty is the second important factor which is the pillar of any good technical institution monitored by arrangement, which is additional most critical factor since all depends upon building right planning in the starting.
- Lastly infrastructural factor comes. A good infrastructure will certainly produce more prospects to provide the class education.

Zakuan et al., (2012) studies the critical success factors of TQM implementation in higher education institutions which explores and generates new knowledge. These factors help to improve the TQM practices and outcome especially in higher education institutions. The examination is focused on the applications, the impacts on the organization’s performance and the encouraged indicators to the acceptance of TQM in the institute. Though, certain association and institutions by this time identified the benefits from TQM implementations on their organization performance they consider this approach could give them a chance to achieving their goals. In spite of the implementation of TQM that brings a wide range of changes in organization, there are absences of adoption of this methodology in several organizations. In conclusion, the projected conceptual model represents as the critical success factors of TQM and its implementation on higher education institutions.

- Continuous improvement
- Total customer satisfaction
These factors seem to be a good indicator for organization to relate a structured approach methods and system and it provides influence on the organization performance. It also concludes the impact on institutions performance due to the impacts of TQM approach.

Quality function deployment in higher education institutes of Pakistan were studied by (Qureshi, Khan, Bhatti, Khan, & Khalid, 2012). Authors’ views that to produce a steady flow of people with high intelligence and commitment to learning, quality of higher education is needed which will continue the process of transmission and advancement of knowledge. One of the TQM techniques is Quality Function Deployment (QFD) which can be applied for process and design improvement. QFD is used in this study as a tool for quality improvement and benchmarking in higher education institutions of Pakistan. The data were analysed using the systems of QFD on higher education institutes of Pakistan. QFD calculation showed the comparison of different universities in defined areas of their quality teaching. On the basis of these feedbacks the area in which a university is performing best is shown, so other universities can use this best performance as a benchmark for their improvement in certain areas.

The reality of the application of standards of TQM on performance management education in educational centres and institutions of special education has been attempted by (Gharib & Alfarah, 2012). The findings suggest that there was high level of knowledge of the directors of centres and institutions of special education to the concept of total quality and positive trends towards the criteria for the application of TQM in these centres and institutions, as well as varied obstacles that prevent the application of TQM in these centres and institutions concerned with special education. The study suggested the need

- To increase awareness and view of the benefits of the application of standards of performance and standards of TQM for the principals and managers.
• Increase training programs and field visits to study from the experiences of others in the developed countries in this area.

• Increase financial support to improve and develop the infrastructure for the administrations to achieve TQM.

The results examination and discussion done by the researcher extended the following conclusions that the Directors of centres and institutions of special education have the awareness of the perception of TQM, and their attitudes about their knowledge with the perception of TQM were high and positive. Further, Directors of centres and an institution of special education come to an agreement on the presence of a variety of difficulties and complications checking the application of TQM

An attempt was made by (Al-Amri & Bon, 2012) for measuring the TQM in the Yemeni universities largely from the perspective of faculty members. Further to know the effect of variables as age, college, gender, experience, degree of Scientific in the responses of staff members. This inquiry finds out whether the Yemeni universities embraced the total quality perceptions or not. Also to have knowledge to what extent the public universities in Yemen are adopting these concepts. Through this research, we can understand how the universities can overcome the difficulties from the view of the academic members.

An attempt was made by (Uche, 2012) to measure quality assurance in South-South Nigerian higher institutions. The main objective of this study was to investigate students’ perception of the quality of the academic staff. Quality pointers’ specification and questionnaire called students-perception of academic staff quality were the instruments used for data collection. The findings specify that

• The students evaluated the quality of the academic staff as high, especially in terms of professional competence, but evaluated their supervision low.

• The students felt that the lecturers do not have sufficient time for students and do not organize their lectures properly.
Further the author recommends that regular seminars and workshops for academic staff should be included to improve their communication skills for effective course delivery, encourage lecturers to figure out more time and increase contact to students.

A case study of the national teacher selection based on TQM and human resources selection in Taiwan has been done by Chao et al. 2012. The purpose of this study was to use a case study to identify the critical success factors that enhance service quality in the national teacher selection process in Taiwan. They collected from multiple sources including 7 years of archival materials, annual reports and official websites. In-depth interviews with successful and unsuccessful contract applicants, as well as staff who had detained the selection within the past 7 years were conducted. The findings of their research publicized critical success factors that boost the service quality of the selection process (SQSP):

- Top management support for the selection process
- Focus on customer orientation in the selection process
- Magnify the scope of cooperation and participation
- Provide TQM-oriented training to selectors
- Make continuous improvements in the process
- Focus on problem prevention rather than correction.

They discussed theoretical and practical implications and appropriate selection tools as well as quality management tools were applied during the process. More precisely, the factors expanding the scope of

- Cooperation participation and top management supports can improve candidate opinions of reliability, responsiveness and assurance.
- Continuous improvements, TQM-oriented training to selectors in the development and directing on problem prevention can increase opinions of assurance and reliability
- Factor directing on customer orientation in the selection process can increase views of responsiveness and empathy
Lastly, the factor relating to proper collection of tools as well as quality management tools during the process can improve perceptions of reliability and tangibles.

TQM implementation in engineering education in India research was carried out by (Mehta et al., 2013). From the previous studies authors identified 13 principles as stated below using the Delphi technique and applied to engineering education.

- Long-term policy and planning
- Quality in HRM
- Top management commitment and idealistic leadership
- Student focus
- Innovative academic attitude and method
- Employee focus
- Alumni emphasis
- Information management system
- Official resource management
- Quality mission and vision statement
- Continuous calculation and improvement
- Service culture

The objective is to regulate a roadmap of TQM implementation and categorize TQM principles based on their driving power for quality improvement in engineering education with the use of an ISM-based model. The results show that the principles retaining greater driving power, such as quality task and vision report and top management commitment and visionary leadership, should be given more attention to complete improvement in quality.

A study on Critical success factors for sustainable improvement in technical education excellence has been made by (Sahu et al., 2013). The authors identified encouraging critical factors of TQM, for use in a likely background that addresses sustainable quality improvements in technical institutes as an acceptable means of TQM implementation in higher education programs. The content analysis was carried out following the standard principles of deductive
reasoning and subsequently, relevant factors were identified for implementations.

- Institute’s initiatives
- Research and development and consultancy
- Training improvement and placement
- Infrastructure
- Administration
- Technical institute’s quality measures
- Roles and tasks of senior management

The above identified critical factors of quality improvement initiatives are more comprehensive and have potential to address the quality issues of technical institutes. The critical factors offer a practical assistance for academics to implement TQM in technical institutes and can form the basis for explaining a mathematical model for these institutes.

A study on the effect of TQM on customer satisfaction in higher education was carried out by Shahdadnejad & Vakil Alroaia 2013. The authors present an empirical study to examine the effect of TQM factors on customer satisfaction in one of higher educational organizations in South East part of Iran called Qeshm. The proposed study examines the effects of five TQM factors, comprising reliability, tangible, content, attitude and mode of delivery of customer satisfaction. Using Pearson correlation ratios as well as regression analysis the results indicate that all five components effect customer satisfaction significantly.

An empirical study on the student’s perception of educational service quality was carried out by Venmula 2013. Service quality is the capacity of the institute to meet or surpass customer (student) expectations. Observing the service quality performance of the institutions is an essential factor for quality nourishment, a necessary taken step in the direction of gaining the competitive lead over the other institution. Examination and responsiveness about what students think essential will enable educators to improve anticipate and report their particular requirements which in turn will support the educational
institutions. Author carried out a study to examine the practice of the diverse dimensions of service quality in the education system and calculate the service quality as responsiveness, tangibility, assurance, reliability, and empathy with students’ satisfaction in the higher education institutions in the twin cities of Hyderabad and Secunderabad. The finding showed that the assurance and the reliability dimensions of service quality were the two most important dimensions to define the satisfaction levels of the student and had a significant positive relationship with student satisfaction. Further, the author suggested that students perceive that though the other factors like the infrastructure, teaching, policy, cost, receptiveness of faculty, caring and concern of the faculty etc. are also necessary, but the assurance and reliability i.e. Promptness and accuracy in service and assurance of service play a major role and have better effects on their satisfaction levels.

Student satisfaction and impact of leadership in private universities have been studied by (Arif, Ilyas, & Hameed, 2013). Authors has discussed the contradictory understandings of the students studying in private universities in Pakistan about quality and the gap that exists between their expectations and actual experiences from the services provided. The author has identified satisfying and dissatisfying factors in customers of higher education through six service quality indicators (teaching, management, leadership, campus life, academic services and infrastructure). The prediction of the strength of the word of mouth and intentions to stay in the university have been performed by discriminant analysis which further analysed the views of students between their satisfaction and dissatisfaction across seven universities. To understand dynamics of student satisfaction and loyalty in private universities of Pakistan a model has been proposed. The model suggests that two principal factors, which impact students’ perception of service quality are either interrelated to leadership and effective planning or top management. The results also put forward that if administrative factors are weak, dissatisfaction are to be marked. While considering at the theoretical model of the study it gives the impression that the model partly works in the perspective of student satisfaction in private universities of Pakistan. The demographic variable was not found to be influencing satisfaction except for student expectations for a forthcoming job
and salary. Indication of more dissatisfaction than satisfaction with infrastructure and tangible facilities were seen. Even though the private universities arrange for superior infrastructural facilities than public universities, but it is restricted to technical support in classrooms as the space is limited and there are several problems related to transportation, sports, hostels, and libraries. Further, it was analysed that the social atmosphere of the university and campus life are also predictor of dissatisfaction than satisfaction.

A study on quality in teacher education—various parameters and effective quality management have been done by Mukhopadhyay 2014. The study has focused on the study in the area of quality in teacher education as quality service is essential in the modern context of globalization. Conceptual structure of quality has been argued in details. Altered quality restraints in the field of teacher education have been known and few major among them have been explained elaborately. The author has also conversed the important role of quality management in teacher education, which is a program to integrate all these quality components to ensure commitment, responsibility and credibility of the establishment enabling it to render a customer approachable service. The major quality indicators have been identified by researchers, namely

- Curriculum design
- Curriculum transaction
- Evaluation system
- Research and development
- Infrastructure and learning resources
- Student support and progression
- Organization and management

The researcher emphasized that the quantitative expansion has been accompanied by qualitative deterioration. As a result, quality management helps in designing the program to respond to global challenges to confirm a quality outcome in order to work better for its customers.

Chowdhury, (2014) defines the necessity of TQM and quality assurance (QA) study into the undergraduate chemistry, science, engineering curriculum based
on the consideration of current declining trend of education in science, lack of collective, business and technological suggestions with science, and for students to distinguish science knowledge as beneficial, interesting and appropriate. He argued the validation of TQM and QA study in the undergraduate course, and explains the essential causes for not being available in higher education. Further, he talks over associated subjects and problems related to TQM and QA required to consider for implementation and, in context of the outlined course. It was found that TQM and QA provide the opportunity

- To learn applied science and associated business consequences
- Boost student motivation and schedules
- Increases decision-making and problem-solving talents
- Students become innovative
- Develop thinking aptitude in a structured and logical way to express views, and clearly their knowledge-building hard work become evident.

With the implication of TQM and QA it was observed that students easily provide lodgings into the workforce; and enrich employability. Students achieve higher responsiveness of the social associations of science subjects, better ready to become future educated citizens, and learn responsibility.

Sahney, Banwet, & Karunes, (2010) say that the Indian higher educational system is one of the largest in the world. Moreover, the growth of students and universities, the varied range of disciplines and universities in professional and vocational education has significantly increased. With the speedy huge growth of the educational institutes all over the country, educational institutions must develop the quality of their services to race and achieve a prominent position. Direction towards quality and effectiveness in higher education in India has thus started gaining the attention of the educational planners, policy creators and supervisors as also the various stakeholders of the educational system. Starting with theoretical understanding on quality, the motivation of this paper is to present the results of a practical study showed by the administrative staff confined to the City of Delhi of engineering and management institutions imparting graduate and post-graduate degrees/diplomas, so as to acquire the
internal customer’s angle on quality. The different elements projected for study were clearly identified as

- Adaptive resource allocation
- Reward policy
- Efficient and effective leadership
- Perfect and particular policies and procedures
- Customer focus
- Involvement
- Respect for people
- Definite goals,
- Teamwork
- Operational and strategic planning
- Trustworthiness
- Communication

- Clear structural construction and design
- Machinery for control and evaluation
- Budget importance
- Emphasis on continuous improvement
- Management by fact and information system
- Cross-functional collaboration
- Administrative competence
- Training and development
- Administrative arrangement
- Adequate infrastructure and facilities

Followed by a pilot study and an earlier study based on the quality function deployment technique, definite components serious to quality management in education are identified. Subsequently, the interpretive structural modelling technique is applied. As a result of this research, the adoption of quality framework in educational institutions would lead to the creation of an environment where the administrative staff would be fulfilled and sequentially, be able to provide quality service to the other customers and stakeholders. An application of the shared framework of such critical components can support policy makers, administrator’s educational planners and administrators as also the various stakeholders of the educational system to contribute towards growth, success and survival in the fast moving environment.

Conclusion
Having given the focus on quality education in higher education, it should be noted that effective and quality higher education is determined by the successful implementation of adoption of TQM model. As previously pointed out, the varied contextualization of quality in higher education inevitably lead to varied models of quality in education being adopted at university.

2.3.3.3 Studies Concerning TQM in Secondary and Primary School

Introduction

This section address some of the factors contributing to TQM applied in secondary and primary school. Some exemplary models of managing school, parental involvement, teaching and learning methods, evaluation of school performance, and relation among the principal and teachers are discussed.

Rampa, (2005) noticed the poor functioning of a big number of the black schools and the crucial need to transform for a problematic phenomenon particular to post-apartheid South Africa. Nevertheless various government involvements and initiatives (COLTS, Tirisano, Call to Action, Batho-Pele) for the improvement of schools intended at correcting this situation, many schools continue to be dysfunctional and/or operate within a negative culture of teaching, learning and services. The drive of the study was to conclude whether or not the implementation of a TQM philosophy that complemented previous involvements could rectify the current situation. Emerging from the survey and the literature review was the requirement for a different involvement strategy, one that would lodge differences in and between schools rather than supposing the appropriateness of a ‘one size fits all’ involvement model. The author believed that a model should be integrated into a TQM intervention framework that would be flexible enough to accommodate differences in schools with regard to contexts, needs, strengths and weaknesses.

Educators’ views on TQM in secondary schools in Eshowe circuit was studied by (Magwaza, 2007). The author in his review of studies found that majority of them have not been targeted at how educators view TQM and in which way it could be used to improve teaching and learning in schools. Detailed study
revealed that TQM is a useful method for continuous improvement and that educators could adopt and implement it for quality improvement. His study was

- To define the views of educators on TQM in secondary schools.
- Aimed at finding out how TQM principles could be used to achieve quality teaching and learning.

He focused on TQM as a universal management tool for quality improvement in education. The findings of the study show that if school managers apply the principles and skills of TQM, the quality of education would be improved. From the results of the study, it can be established that, improvement and quality management are the responsibility of the school employees. But the heads of the schools had to adopt the principles of quality, lead the determination for improvement and be involved in all phases of the process. Employees should be encouraged and trained to improve quality and prevent defects. Quality professionals should train other managers in TQM techniques and concentrate on improving the methods of defect prevention. Schools principals and educators must have concentration on the educational essentials of the learners and methods to bring about quality education.

Ncube, (2004) in their study analysed how the management of the quality of education of Rural Day Secondary Schools has been affected by the internal efficiency of the school system. The study measured the internal efficiency of certain Rural Day Secondary Schools, and examined the views of school managers and school heads on the quality of education of the schools, and strategies that can be used to increase the quality of education thereof. The study established that the internal productivity of the schools was low. Further, the study recommended that

- Funding should be more distributed to Rural Day Secondary Schools to boost resources and restrain dropouts.
- Low-cost boarding facilities be introduced to deal with the problem of long distances walked by students.
- The curriculum should also be re-engineered and make it more responsive to the plight of rural students.
• Training is looked-for for SDCs, on the Clients’ Charter.

It was additional recommended that BSP (Z) should try to touch out to remote schools; ZIMSEC should develop inspections, supervision, and the Quality Assurance Division should be serviced to carry out operational teacher supervision.

Manaf & Seng, (2010) describes the construction and validation of a School Quality Management Scale (SQMS) which was designed to assess the Quality Management practices in the Malaysian secondary schools in two steps. First, he studied groups of items which were constructed based on Malcolm Baldrige National Quality Award Education Criteria for Performance Excellence Framework and were confirmed using content, construct, criterion-related validity and reliability analysis. Further, in the subsequent study the original application study was on the excellence award winning schools using the revised SQMS. Seven constructs of the quality management practices as shown below were mainly characterized for SQMS.

• Top Management Support
• Strategic Quality Planning
• Customer Focus and Satisfaction
• Quality Operational Result
• Information and Analysis
• Continuous Improvement
• Staff Total Participation

Pearson’s correlation and test-retest reliability conducted on the SQMS showed a significant positive relationship and stability over a period of five months. The first application study indicated that teachers’ rating of the mean score of quality management practices was positively related to all the mean scores of the seven constructs of quality management. Several different tests showed the existence of a high degree of reliability and construct validity, which justified its suitability of SQMS, as a measurement of quality management practices in schools. The analysis provided evidence of the scale as a theoretically useful instrument to calculate the quality management controls in schools.
**Tasar and Celik, (2011)** conducted study for the purpose of inspecting the implementation levels of the TQM principles by the principals and teachers functioning at the elementary schools. He concentrated on the study of the stratum that the school employees of public elementary schools in Adıyaman province pay regard to the principles as stated

- Leaders of the top management
- Participate in the decisions
- Customer orientation
- Continuous growth
- Communication level
- Motivation

It is further researched that whether the level of implementation of such ideologies by the principals and the teachers differ depending on their gender, marital status, age, education grade and tenure of service. It was discovered that the principals and the teachers functioning at the elementary schools implemented the TQM principles at their occupational studies and found that the teachers have higher implementation levels than the principals as regards such principles. Also, no significant difference was generated between the parties when the level of implementation for the TQM principles are studied in terms of age, marital status and sex variables. The seniority had no significant difference amongst the teachers. Further there is no significant difference in application of the continuous development principle among the principals.

**HOSSAIN & SAHA, (2012)** studied about the institutional assessment of higher secondary school in BILASPUR. Authors performed SWOT analysis to identify the strengths, weaknesses, opportunities and threats of an institution and tried to resolve the problem. They tested to evaluate six schools in Bilaspur by SWOT analysis. Through SWOT analysis of these school they found that

- Majority cases principal and staff relation are strong.
- Job satisfaction and office management are the weaknesses of the few of these institutions which should be taken care and try to resolve this trouble.
• Linkage and material resources were the weaknesses of few institutes of which care should be taken for explaining this trouble.

• At specific establishment, principal and examination are the strength which should be maintained.

• It was even found that the teachers’ quality was the dependence of this summary, of which care should be taken for solving this trouble.

Eventually they concluded that educational institutions should keep on the frequent TQM test and this recurrent test of TQM will result into identifying these strengths and weakness. From the aforesaid findings, it can be said that SWOT analysis is an important process for bringing TQM of an institution.

The legal framework governing parental involvement with education in Zimbabwe were studied by Ngwenya and Pretorius 2013. The research aimed at investigating the legal framework for the application of Parental Involvement programmes and school governors’ and managers’ understanding of the legal documents. A survey plan was employed to gather information on the biographical information, legal statutes and perceptions of the respondents towards Parental Involvement by means of a questionnaire consisting of twenty-four pre-coded response items. The research also exposed that citizens’ contribution adopted by schools within the TQM philosophy enhances the accessibility of educational resources and the calibre of service delivery. Further, they recommended empowerment workshops for both stakeholder groups. The overall view derived from this experimental research in the Primary Schools is juridical and both education managers and school governors are aware of their responsibility within this jurisdiction. Decentralization of power to local communities, improves the supply of educational resources, enormously, culminating in the improvement of the academic performance of schools as they go towards completing efficiency and effectiveness among global competition.

Oyewole, (2013) carried out study on repositioning secondary school administration for quality assurance in Ekiti State, Nigeria. The author discusses the challenges and prospects of repositioning secondary school administration for quality assurance in Ekiti State, Nigeria. He tested the schemes used in
repositioning secondary school administration for quality assurance by the country government. The challenges of repositioning the school governing body based on the public outcry and the responses of the school heads towards this new development were highlighted. It x-rays the projections of transposing secondary school administration for quality assurance in Ekiti State to include

- High ability of secondary school administrators
- Removal of dichotomy between senior and junior secondary schools
- Harmony and team work spirit between teachers
- Centralism of school guidelines
- Upgraded school infrastructures and amenities
- Effective mistakes of school personnel.

The report throws light among others that the Teaching Service Commission in Ekiti State should always consider performance, competency and years of experience in the appointment of secondary school head teachers.

Rowlands, (1998) has studied the various parameter of TQM at The Dell primary school. He studied the experiments challenged by the school. The present organizational structure according to TQM was studied. The school philosophy, the school inspections, a development plan was reviewed

Weller, (2000) attempted to study to identify the root causes of school attendance problems using the TQM tools. To accomplish necessary output the author presents a model for principals to apply to provide quality outcomes, at reduced cost, in non-instructional areas. He used teachers, parents, community members, and applied the problem-solving tools and techniques of TQM to detect core problem reasons, principals can classify accurate solutions which yield positive results and reduce costs in academic and non-academic areas.

Teacher perceptions of classroom management practices in public elementary schools was studied by (Kathryn Wilson, 2006). Purpose of author to study on teacher’s perceptions was to inspect the insights of elementary school teachers in public schools in Southern California relating to

- Their frequency of usage of classroom management skills
• Specifically scrutinizing physical and psychological practices to continue classroom discipline.

The research design intricate a survey that was used to gather data on teachers’ perceptions, and observed the use of detailed classroom management techniques by other teachers. Further, the author in his research wanted to study

• Which classroom management techniques are used by teachers most frequently
• To know the most common positive and negative classroom management practices which are prevalent in K-8 classrooms during the period of research
• To bring effective changes in the student’s behaviour
• To study the relationship between the most effective techniques of classroom management as said by teachers and self-report of what they are engaged in.

This study found that teachers reported to use positive technique more and proportion of teachers using negative techniques were evident. Further, data recommended that different variables, such as gender, grade level taught, years of teaching experience, and education qualification, may have influenced teacher’s opinion and use of positive and negative classroom management techniques. The examination of the relationship between teachers’ perception and practice produced correlations that established statistical significance between perceived level of effectiveness and practice.

Alvarez, (2008) sought to examine the relationship between teacher quality and student achievement in public elementary schools in a community district school of the New York City. For this study, a sample of 117 full-time teachers who were employed in third, fourth and fifth class for the period of the 2006-2007 were asked to fill the questionnaire. The author in his study finds the relationship between student achievement and teacher quality with three specific teacher quality characteristics as certification, educational background, and training imparted, and professional development programs were explored by the researcher. This study was intended to test the TQM theoretical proposals relating quality inputs to quality outputs. This study concluded that certain
noticeable teacher quality characteristics as shown below have a significant relation to the student achievement.

- Certification
- Educational background
- Training imparted
- Professional development programs activities

Mainly, this study shows that teachers’ educational background as highest degree received, major field of study and the pre-teaching assessments are significantly correlated to the students’ achievements. Further, this study confirms that teachers’ certification area is significantly related to the students’ achievements and also confirms that teachers’ professional development components such as participation in professional development events, backing established, rewards gained and teamwork activities are statistically interrelated to the students’ achievement in Math and ELA test. In operation, such statistics can be particularly valuable in guiding policies as regards

- How to appoint
- Reward given to whom
- To retain the best teachers
- How to allocate available teachers across schools and classrooms.

Likewise, they could guide strategic decisions, generally those referred to device policies to improve teacher quality as well as other education policies to inspire high-quality teaching in elementary schools.

The effectiveness of the school performance, by using the total quality standards within the education district of Al-Petra Province, from the perspective of the public schools, principals and teachers was studied by Alobiedat 2011. The author study aimed to detect the level of appreciation by the school principals, teachers and the Education Ward, for the efficiency of school performance, within dissimilar variables of the study from the perspective of public school teachers and principals of Al-Petra province. The survey pointed to determine
Firstly, what is the stratum of the efficiency of school performance by using the TQS (Total Quality Standard) in Al-Petra province public schools as perceived school principals, and teachers?

Secondly, are there any significant differences to the stratum of the effectiveness of school performance by using the TQS as perceived by school teachers and principals qualified to variables as sex, educational credential, employment grade, and experience.

The results indicated that the implementation of educational technology came in the first place due to the concern of the Ministry of Education for the implementation of Educational Commerce and taking advantage of this technology to access the world of information and knowledge that changed continuously, also the level of utilizing plans, scheduling came to an average degree in the last rank of the six measurements which may be due to the information that the practice of school administrators for planning still depends on improvisation randomization sometimes or situational management.

Conclusion

Over the past few decades, knowledge of TQM and its practices in service sector and education sector has been developed. Various sets of practices and successful implementation of TQM in an organization have been provided in the literature, but a common set of practices for successful implementation of TQM has not been has notable. Unfortunately, the scarcity of research with empirical proof in favour of TQM issues and its implementations in school education system is mostly unpredictable, surprisingly scant, and prevented the conception towards the universal road map which can be further used by other schools to accomplish their quality-oriented targets. Survey on TQM has come out with a number of dimensions on TQM. A critical examination of the literature in the diverse conceptualization of manufacturing sectors, service sectors, and education field is captured in Table 2-5

2.4 Core Indicators of TQM

TQM can be well-defined as the organized association of processes and procedures to safeguard the performance of the proper tasks to meet the
objective of attaining quality using various indicators of TQM. The most cited TQM critical factors of quality framework of recent past are studied to identify the critical factors for the current study. Table 2-5 lists the general overview of the indicators of TQM as viewed by researchers.

Table 2-5 Research studies on TQM dimensions as per viewed by different researchers as reported in the literature

<table>
<thead>
<tr>
<th>TQM Dimensions</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Improvement</td>
<td>(F. Talib, Rahman, &amp; Akhtar, 2012), (Oluwatoyin &amp; Oluseun, 2008), (W. Y. Montasser &amp; Manhawy, 2013),</td>
</tr>
<tr>
<td>Customer Focus</td>
<td>(F. Talib et al., 2012), (Oluwatoyin &amp; Oluseun, 2008), (W. Y. Montasser &amp; Manhawy, 2013), (Vouzas &amp; Psychogios, 2007), (LEE, 2010)</td>
</tr>
<tr>
<td>Customers Focus</td>
<td>(Jusoh et al., 2008), (F. Talib et al., 2012), (Oluwatoyin &amp; Oluseun, 2008), (W. Y. Montasser &amp; Manhawy, 2013), (Fryer, Antony, &amp; Douglas, 2007), (Vouzas &amp; Psychogios, 2007)</td>
</tr>
<tr>
<td>Employee Involvement</td>
<td>(F. Talib et al., 2012), (Oluwatoyin &amp; Oluseun, 2008), (W. Y. Montasser &amp; Manhawy, 2013), (Vouzas &amp; Psychogios, 2007)</td>
</tr>
<tr>
<td>Empowerment</td>
<td>(Irfan, Ijaz, &amp; Awan, 2012), (F. Talib et al., 2012), (Flynn et al., 1997), (Saraph, Benson, &amp; Schroeder, 1989), (W. Y. Montasser &amp; Manhawy, 2013), (Fryer et al., 2007); (Vouzas &amp; Psychogios, 2007)</td>
</tr>
<tr>
<td>Information and Analysis</td>
<td>(Jusoh et al., 2008), (F. Talib et al., 2012), (Flynn et al., 1997), (Saraph et al., 1989), (W. Y. Montasser &amp; Manhawy, 2013), (I. Joseph et al., 1999), (LEE, 2010)</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>(Irfan et al., 2012), (Kusku, 2001)</td>
</tr>
<tr>
<td>Leadership/Top Management</td>
<td>(Jusoh et al., 2008), (Talib et al., 2012), (Irfan et al., 2012), (Oluwatoyin &amp; Oluseun, 2008), (Treptharat &amp; Tayiam, 2014), (Saraph et al., 1989), (Flynn et al., 1997), (Saraph et al., 1989), (W. Y. Montasser &amp; Manhawy, 2013), (I. Joseph et al., 1999), (Fryer et al., 2007), (Vouzas &amp; Psychogios, 2007), (LEE, 2010)</td>
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<tr>
<td>Performance Management</td>
<td>(Jusoh et al., 2008)</td>
</tr>
<tr>
<td>Process Management</td>
<td>(Jusoh et al., 2008), (F. Talib et al., 2012), (Saraph et al., 1989), (W. Y. Montasser &amp; Manhawy, 2013), (Fryer et al., 2007), (LEE, 2010)</td>
</tr>
<tr>
<td>Relation</td>
<td>(Saraph et al., 1989)</td>
</tr>
<tr>
<td>Resource Management</td>
<td>(Jusoh et al., 2008)</td>
</tr>
<tr>
<td>TQM Dimensions</td>
<td>Authors</td>
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<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reward and Recognition</td>
<td>(Irfan et al., 2012), (Treputtharat &amp; Tayiam, 2014)</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>(F. Talib et al., 2012), (LEE, 2010)</td>
</tr>
<tr>
<td>Supplier Quality</td>
<td>(F. Talib et al., 2012), (Flynn et al., 1997), (Saraph et al., 1989), (W. Y. Montasser &amp; Manhawy, 2013), (I. Joseph et al., 1999), (Fryer et al., 2007)</td>
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<tr>
<td>Management</td>
<td>(F. Talib et al., 2012), (Oluwatoyin &amp; Oluseun, 2008), (Treputtharat &amp; Tayiam, 2014), (W. Y. Montasser &amp; Manhawy, 2013), (Fryer et al., 2007), (Vouzas &amp; Psychogios, 2007)</td>
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<tr>
<td>Teamwork</td>
<td>(Irfan et al., 2012), (F. Talib et al., 2012), (Oluwatoyin &amp; Oluseun, 2008), (Treputtharat &amp; Tayiam, 2014), (W. Y. Montasser &amp; Manhawy, 2013), (Fryer et al., 2007), (I. Joseph et al., 1999), (Fryer et al., 2007), (Vouzas &amp; Psychogios, 2007)</td>
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<tr>
<td>Training</td>
<td>(Irfan et al., 2012), (F. Talib et al., 2012), (Oluwatoyin &amp; Oluseun, 2008), (Saraph et al., 1989), (W. Y. Montasser &amp; Manhawy, 2013), (I. Joseph et al., 1999), (Fryer et al., 2007), (Vouzas &amp; Psychogios, 2007)</td>
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</table>

Based on the review of the literature, there is measure of consensus about the agreement on the need to measure the above TQM dimension of Table 2-5 related to the study to classify quality management practices in various sectors. It is studied from the literature that some quality management indicators relate to people management, customer focus and people, while some indicators are used to measure process management, supplier management, product / service design or on some quality tools and techniques (Madi Bin Abdullah & Tariq, 2012). Further, to summarise the application and implementation of the use TQM, Table 2-6 shows numerous studies that have focused on different concerns of quality management in the fields of manufacturing, banking, service sectors, and academic institutions.
Table 2-6 Research studies on TQM in various areas as reported in the literature

<table>
<thead>
<tr>
<th>Industry</th>
<th>Author (s)</th>
<th>Main purpose of the study</th>
<th>Statistical methods</th>
<th>Dimensions</th>
<th>Major findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Irfan et al., 2012)</td>
<td>Manufacturing</td>
<td>Internal customer (employees) job satisfaction at workplace.</td>
<td>Structural equation modelling</td>
<td>Leadership role, training and education, empowerment, reward and recognition, employees’ involvement and cooperation and teamwork for this study.</td>
<td>Soft aspects of TQM practices have significant impact employee satisfaction</td>
</tr>
<tr>
<td>(Abdul-razak, Wumbie, &amp; Abdul-razak, 2014)</td>
<td>School</td>
<td>Quality management in schools; and effects of total quality management on school performance</td>
<td>Descriptive survey and the use of quantitative techniques</td>
<td>Demotion of students and suspension of teacher’s salaries</td>
<td>- Inadequate teachers and finances are hindering the smooth management.</td>
</tr>
<tr>
<td>(Kusku, 2001)</td>
<td>University – Turkey</td>
<td>To explore the satisfaction level of the academic staff of state universities.</td>
<td>T- test, Regression</td>
<td>Professional Satisfaction, Institutional Job Satisfaction, followed by Colleague Competition Level Satisfaction and Colleague Relations Satisfaction.</td>
<td>Improvements related to Professional Satisfaction, Institutional Job Satisfaction should be increased.</td>
</tr>
<tr>
<td>(R. Jain, Sahney, &amp; Sinha, 2013)</td>
<td>Higher Education -India</td>
<td>To develop a multidimensional scale to measure service quality in higher</td>
<td>Exploratory factor analysis</td>
<td>Input quality, curriculum, academic facilities, industry interaction, interaction quality, support facilities.</td>
<td>Emphasis on the student as a customer of education, and proposes to develop a scale to</td>
</tr>
<tr>
<td>Industry</td>
<td>Author (s)</td>
<td>Main purpose of the study</td>
<td>Statistical methods</td>
<td>Dimensions</td>
<td>Major findings</td>
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<tr>
<td>Higher education</td>
<td>(Sahu et al., 2013)</td>
<td>To examine sustainable quality improvements in technical institutes as a plausible means of TQM implementation in higher education programs.</td>
<td>Empirical study</td>
<td>Infrastructure, Training and development, Research and development and consultancy, Administrative interaction, Roles and responsibilities of Top management, Infrastructure</td>
<td>Search for new and innovative methods for alarming trend in the backdrop of increased competition.</td>
</tr>
<tr>
<td>University – Malaysia</td>
<td>(Jusoh et al., 2008)</td>
<td>Proposes a theoretical framework of TQM to suit the need of the Research and Development (R&amp;D) context.</td>
<td>Factor Analysis</td>
<td>Top management leadership, data and information management, performance management, process management, partnership, customer focus and resource management</td>
<td>TQM factors Significantly contributed to quality management in higher education context.</td>
</tr>
<tr>
<td>ICT industry</td>
<td>(F. Talib et al., 2012)</td>
<td>To identify and rank the main practices of TQM in ICT industry</td>
<td>Factor Analysis, EFA and CFA</td>
<td>Top management, information management, process management, customer focus resource management, Training and education, Involvement, team work, strategic planning, Benchmarking, supplier management</td>
<td>Instrument measures were found to have satisfactory psychometric properties.</td>
</tr>
<tr>
<td>Industry</td>
<td>Author (s)</td>
<td>Main purpose of the study</td>
<td>Statistical methods</td>
<td>Dimensions</td>
<td>Major findings</td>
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<tr>
<td>Primary school</td>
<td>(Treputthar at &amp; Tayiam, 2014)</td>
<td>To study the school climate affecting job satisfaction of teachers in Primary Education and job satisfaction of teachers</td>
<td>Regression</td>
<td>Performance standard, responsibility, unity, reward, success, leadership.</td>
<td>Job satisfaction of teachers, characteristic, success and unity was at a “high” level, and highest mean, while the lowest one was the responsibility and salary was at the lowest.</td>
</tr>
<tr>
<td>Nigerian Airlines</td>
<td>(Oluwatoyin &amp; Oluseun, 2008)</td>
<td>To highlight the benefits of TQM implementation in the Nigerian Airlines</td>
<td>T- test</td>
<td>Top Management Commitment, Cultural Change, Customer focus, Involvement, Continuous improvement, training, team work</td>
<td>For proper implementation of TQM, everyone in the organization from management to employees must be involved and even the customer.</td>
</tr>
<tr>
<td>Engineering</td>
<td>(Mehta et al., 2013)</td>
<td>To study the implementation of TQM in the engineering education sector in the Indian scenario, with an approach of assessing its linkages with performance</td>
<td>Imperative structural modelling</td>
<td>Set of 13 principles were identified using Delphi techniques</td>
<td>In pursuit of quality improvement the principles possessing higher driving power should be given more attention as compared to principles with dependences.</td>
</tr>
<tr>
<td>Higher education</td>
<td>(Karahan &amp; Mete, 2014)</td>
<td>To determine and evaluate the quality sufficiency of a higher education institution</td>
<td>Correlation</td>
<td>physical conditions of higher education institutions, social areas and activities, the content of</td>
<td>college administration surveyed should work more effectively on the</td>
</tr>
<tr>
<td>Industry</td>
<td>Author (s)</td>
<td>Main purpose of the study</td>
<td>Statistical methods</td>
<td>Dimensions</td>
<td>Major findings</td>
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<td></td>
<td></td>
<td>according to students’ feedback.</td>
<td></td>
<td>education and training, career support, teaching staff, the management and staff competency</td>
<td>Cleaning at common areas such as cafeteria, canteen, and gym, supporting for the project and maintaining the relationship after graduating.</td>
</tr>
<tr>
<td>(Ncube, 2004)</td>
<td>Secondary School</td>
<td>To analyse how the management of the quality affected by the internal efficiency of the school system. It also analysed the views of school managers and school heads on factors affecting the quality of education in Rural Day Secondary Schools</td>
<td>Quantitative and qualitative techniques were used</td>
<td>Survival rates; dropout rates; repetition rates, and pass rates</td>
<td>reasons for the low pass rates are varied as lack of resources; low teacher morale; long distances walked by students to school, and the curriculum which does not address the needs of rural students</td>
</tr>
<tr>
<td>(Najafabadi et al., 2008)</td>
<td>Higher education</td>
<td>To highlight the general principles of TQM involved and to point out how this approach has been and can be used to improve the quality of a higher education institution</td>
<td>qualitative and quantitative technique were used</td>
<td>Focus on whole institution and administrative structure</td>
<td>Identified some guidelines, approaches and policies to improve its quality in different issues.</td>
</tr>
<tr>
<td>Industry</td>
<td>Author(s)</td>
<td>Main purpose of the study</td>
<td>Statistical methods</td>
<td>Dimensions</td>
<td>Major findings</td>
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<tr>
<td>(Manaf &amp; Seng, 2010)</td>
<td>Secondary School</td>
<td>To assess the Quality Management practices in the Malaysian secondary schools.</td>
<td>Correlation</td>
<td>Top Management Support, Strategic Quality Planning, Customer Focus and Satisfaction, Quality Operational Result, Information and Analysis, Continuous Improvement and Staff Total Participation.</td>
<td>Indicated that teachers' rating on the mean score of quality management practices was positively related to all the mean scores of the seven constructs of quality management.</td>
</tr>
<tr>
<td>(Magwaza, 2007)</td>
<td>Secondary Schools</td>
<td>To investigate the views of educators on TQM and how it could be used as a tool to promote quality education in secondary schools</td>
<td>Descriptive research design</td>
<td>Effective teaching, customer focus, empowerment, team work, communication, infrastructure, commitment, recognition, strategy</td>
<td>But the heads had to adopt the culture of quality, drive for improvement and be involved in all stages of the process. Training should be increased to prevent defects and improve quality. Implement TQM techniques and concentrate on improving the methods of defect prevention. Schools principals and educators must focus on the educational needs</td>
</tr>
</tbody>
</table>
2.5 Failure in TQM

This section deals with some of the barriers that impede successful implementation of TQM which is central to this study. To improve production, services, and performance many organizations are now a days using TQM and most of them are successful in implementing it, but some organizations have failed to gain the success by using TQM. These failure in TQM is due to improper implementation of TQM indicators (Brigham, 1993). The success, as an output of TQM implementation in an organization is not seen immediately. According to (Thiagarajan & Zairi, 1997), at least after a period of two to three years of implementation of TQM in an organization some tangible benefits are likely to be evident. Infinite success in an organization is a hurdle by at least one constraint. According to (Ross, 1999) "there is no choice, either you manage constraints or they manage you". Thus, to attain quality in institutions or in an organisations, the employees must break down barriers by including each person in the improvement process (Magwaza, 2007).

The success of TQM is finally judged by the continuous improvement process (Fryer et al., 2007), the customer, and customer satisfaction (Thiagarajan & Zairi, 1997). (Bessant, Caffyn, Gilbert, Harding, & Webb, 1994) state “But despite its apparent simplicity, Continuous improvement is not always successful and is particularly hard to sustain in the long-term.” As viewed by (Gallagher, 1997) there is no single reason for success or failure of TQM implementation.

Various factors are responsible, such as proper planning, the culture of organization, structure of process management and background, not using effective measurement mechanisms. Proper planning and sufficient preparation proceeds towards a smoother implementation process. Survival of TQM is not possible in an organization in which all employees are not moving towards the same goal (Soltani, 2005); (Maddox, 2009). According to (Soltani, 2005); (Thiagarajan & Zairi, 1997) reasons for failure in TQM can be listed as follows:

- Reluctant to accept change
- Implementation problems
Failure to develop a framework that fits to a specific service organization
Improper planning, poorly defined goals
Impractical expectations and time-frame
Lack of targets and attitude to attain progress
Develop and sustain a quality-oriented culture
Over burden with work
Insufficient proper training and appropriate resources
Lack of continuous improvement culture
Lack of employees involvement
Lack of performance measurement
Lack of top and middle management commitment
Insufficient coordination between departments
Improper use of statistical tools and techniques

Proper structure should be used to resolve the problems encountered by TQM implementation. A TQM initiative is therefore, considered a failure if it fails to delight customer and add value for customer satisfaction (Thiagarajan and Zairi, 1997). Besides this there are several studies that have been attempted to identify the major reasons for the failure of TQM efforts (F. Talib, Rahman, & Qureshi, 2011); (Maddox, 2009); (Mahavidyalaya, 2011); (Fryer et al., 2007); (Arshida & Agil, 2013); (Fening, Amaria, & Frempong, 2013); (F. Talib, 2013).

2.6 Research Gap

The reviews of this chapter is focused on the initial advancement of the perception of TQM, historical analysis and diffusion of TQM awareness and implementation in different sectors in abroad and in India. Most of the studies in education area have done intensive study on analysing data on indicators such as attendance problems of student, dropout ratio in schools, level of appreciation by school principal and teachers, parental involvement in education, student recruitment in schools. Other authors have studied the quality of education by type of school management, office management, and teachers’ perceptions of classroom management in public school and school management environment based on infrastructure and socio economic status of students. Lastly, the studies based on TQM principle in university, higher education and secondary schools are done to some extent but the literature studies shows that research in primary school using TQM indicators for improving quality is rare. Thus, to overcome the limitations mentioned, the current research targets to go beyond an analysis of those indicators. There are very few such studies which have considered the
school performances and job satisfaction of teachers as the main factor along with the demographic factors affecting the performance of the school.

- The main goal of this study is to identify the critical factors of TQM, perception of TQM factors and practices among principals and teachers across primary schools, and analyse the factors affecting the quality of primary school performance and focuses on the job satisfaction of the teacher.
- The aim of the study is to check the perception of principal and teachers of primary school towards the TQM, and its impact on job satisfaction of teacher and school performance using statistical models.

Quality in the field of education is the main alarm. Hence the focus of this study was on the school performance, which is measured using identified critical factors of TQM like continuous improvement, customer focus, top management support, feedback, teamwork, relation, empowerment, involvement, process management and job satisfaction. Thus a detailed study to measure the school performance and job satisfaction of teachers of primary schools has been undertaken in Ahmedabad district by the researcher. Finally this thesis will make recommendations on issues for improving the job satisfaction, which acts as a mediating role between the identified critical TQM factors and the school performance.

2.7 Epilogue

*It is studied from the literature that there are benefits of TQM implementation in industry, service sectors, and education sectors. But, literature on implementation of TQM in the education industry is too limited. The reason could be due to the fact that attention has been given to the large organizations, production units. However, some researchers have recently studied and developed models for studying the relationship between TQM and various sectors in education and issues related to education. Some researchers pay more consideration to applying TQM in education industry in specially higher education, university and secondary schools, but not at the grass root level which is primary school education. The objective of education is to offer opportunities to gain attitudes, knowledge and skills that prepare children for adult world which became the main reason for choosing education industry for my research.*
Moreover, in developed countries most research on education was done. It is debated whether, the results of the research studies in developed countries in context to education system are similar in context to developing countries, such as India. This gap is a big concern for the author in conducting this study. Thus, the review of the literature in this chapter is the foundation for developing a conceptual framework of research in chapter 3.