CHAPTER 2

TOTAL QUALITY MANAGEMENT AND ITS IMPLEMENTATION IN SCHOOLS

2.1 Introduction

The changes and demands for changes impinging on school management in South Africa are diverse. The White Paper on Education and Training (1995:21) explicitly states the necessity of the improvement of the quality of education and training services in South Africa. It acknowledges the decline in quality of performance in many educational institutions.

There are several aspects of schooling and school management in the South African education system which still pose problems to managers which need to be improved upon, some of which are:

- Differences in curricula
- Limited resources
- Lack of training of those in managerial positions
- The high dropout rate in schools
- Shortage of learners trained in science and technology
- Poor basic education
- Poor examination results (West-Burnham 1992:4-5; White Paper on Education and Training 1995:21; Education White Paper 2 1996:10).

One of the unique challenges facing schools today is how to manage for quality. In an attempt to manage the changes which always exist, the principles and components of total quality can be investigated as a philosophy and methodology which assists institutions to manage change. The notion of quality is not new (Rinehart 1993:260). What is new is that the quality philosophy which is already being applied in business and industry, is being adapted to problems encountered in schools (Wilson 1993:62). There are several features of total quality management which are valid in an educational context. In the first instance, the holistic nature of

total quality, that is, an integrative approach to managing all aspects of an institution's work is indeed valid and if adopted it will bring to an end the artificial dichotomy between managing and learning. Total quality knows no boundaries and this makes co-operation between teachers, managers, non-teaching staff and learners possible. In other words, for total quality management to succeed all stakeholders must be involved, that is teachers, managers, non-teaching staff and learners.

Total quality management provides a methodology which can assist educational managers to cope with challenges and changes in the social environment (Arcaro 1995:6). It links to the competency and commitment of the teacher, learner, parent, the appropriateness of the curriculum and the way standards are set and assessed. Total quality management should not, however, be regarded as a recipe or instant pudding (Holt 1993:23). It is rather a route for discussing the improvement of education in a particular educational setting. Although it is a modest beginning with great promise, it has the capacity to bring about immense change in the work of the school (Leddick 1993:43).

Total quality management, although a new approach in South Africa, has started to gain ground. The success of a single South African school in the application of the principles of total quality management serves as a motivator to all schools to do the same.

The headmaster of St Andrew's Preparatory School in Grahamstown, South Africa, confirms this: "Our experience has already proved that the continuous application of the principles of total quality management has the power to transform our school into a vibrant centre of learning and teaching, which will cater for the needs of our students, parents, society in general, and all who work in Prep for many years into the new century" (Prep View 1993:1).

In the context of the above mentioned concerns, a thorough understanding of total quality management as a relevant approach to curb mismanagement is therefore imperative (West-Burnham & Davies 1994:50-51). It is therefore the purpose of this chapter to make an in-depth literature review of total quality management and its implementation in schools.

2.2 The nature and importance of TQM

2.2.1 The nature of TQM

Understanding the concept of total quality management needs some information to shape our frame of reference. Knowing the nature of TQM enables one to understand and define total quality management. The following information will help in shaping our frame of reference.

Quality is defined by customer needs. A customer is defined as "… anyone to whom a product or service is provided" (West-Burnham 1992:29). In the educational context, learners are customers in the classroom. The needs of the customer are identified, their concerns and complaints welcomed. The nature of customer needs will determine the type of organisation because quality organisations exist to meet customer needs (West-Burnham 1992:42). In other words, quality organisations always strive towards satisfying the needs of its customers, that is parents and learners, and their needs will in turn determine the course which the organisation should take.

As total quality management had its origin in the business world, some, if not most of the terminology used have business overtones. Ideas of TQM in business organisations were originally developed in the 1930s and 1940s by among others, Edwards Deming (Sallis 1993:15). Deming first visited Japan in the late 1940s and was invited to return in 1950 when he proposed to Japanese industrials that in rebuilding their industry (after the devastation of the Second World War) they should make a nation-wide assault on inferior quality (Sallis 1993:15). Between 1945 and 1949 products from Japan had an international reputation for shoddy mimicry (Horwitz 1990:55). He gave them a simple answer to this predicament – to find out what customers wanted. The result is total quality management. The USA initially ignored him as they were maximising on output and profit, but in the late 1970s American companies were concerned when they lost markets and market shares to the Japanese. They began to take the quality message seriously and by so doing succeeded. The ideas of quality spread to education. Schools which can offer quality in terms of product and customer service will survive and prosper, while those which fail to provide excellent services face the risk of parents removing their children from the school or parents being negative towards the school with detrimental effects on schooling (Leddick 1993:38; Jenkins 1991:97). It is proper that the issue of customers in the educational context be fully explained. Murgatroyd and Morgan (1993:99)

regard the "students and parents as primary customers of the school". On the other hand, Sallis (1993:32) regards the customers of education as follows:

"The learner/student	=	*primary external customer or client*
Parents, Governors, Employers	=	*secondary external customers*
Labour market, Government, Society	=	*tertiary external customers*
Teachers, Support staff	=	*internal customers".*

The primary external customers and the internal customers are both the direct recipients of the quality academic programs and services provided by the school. The only difference is that Sallis views them as primary customers from outside the school, while other authors like Lewis and Smith (1993:92) view them as internal customers as they are the direct recipients of education. They are, however, both the direct recipients of education.

It should, however, be noted that as a customer is defined in terms of relationships and processes rather than relative status, role or function, it implies that everyone in the educational context is a supplier and a customer and is also entangled in the supplier-customer chains (West-Burnham 1992:29). Customers in a school are categorised as either internal or external customers (Fields 1993:23; Sallis 1993:31; Arcaro 1995:31). Internal customers refer to people within the school, that is staff, learners, the governing body and parents. External customers refer to people external to the organisation such as employers, families and higher education (Greenwood & Gaunt 1994:27; Pike & Barnes 1994:35). In the school all are customers and suppliers as they depend on one another. Everyone depends on someone else to ensure his or her success and everyone's success in turn depends on resources, services and goods he or she is provided with to meet his or her customer needs (Fields 1993:23).

In a total quality management organisation everyone is both a customer and a supplier. It is essential to identify one's roles in the two capacities to better understand the systematic nature of the work in which all are involved. The teacher and the school are suppliers of effective learning tools, environment and systems to the student who is the primary customer. Parents and family, businesses, members of the communities and other taxpayers and stakeholders are regarded as secondary customers (Brandt 1992:6).

In the second instance, quality is defined in terms of fitness for purpose. This has to do with the requirements of a good product or lesson, and whether they should be delivered in good quality every time or whether 25% of them are below par. In total quality management, products or service rendered (teaching, results) should be consistent or even exceeding yesterday's performance. The maintenance of a consistent high standard is essential.

In the third instance, quality is achieved through continuous improvement. West-Burnham and Davies (1994:48) put it thus: "This year's quality product is improved upon and the 'customer is delighted' by having his/her expectation exceeded year by year. This moves the thinking away from 'acceptable' to 'always improving'".

Fourthly, quality is managed through prevention and not detection. This is achieved "... by empowering the workforce to take responsibility for quality and not relying on 'checking up on them'. This is a very important concept in education where traditionally the culture has been concerned with professional autonomy" (West-Burnham & Davies 1994:48).

Fifth, quality "... is about getting it right first time and eliminating variation in terms of sub-standard performance" (West-Burnham & Davies 1994:48). The early quality gurus were all drawn from the business and manufacturing sector and they strove for 100% accuracy first time. To design a truly world-class organisation "... we must attempt to imagine that which is beyond our own experience. Quality as a continuous improvement in product and process is more than meeting customer requirements" (Miller 1991:16). The continuous improvement of schools in terms of teaching and management will yield good results, thus delighting parents and learners.

Lastly, quality can be measured. "Levels of consumer satisfaction in terms of lessons taught can be measured just as well as levels of satisfaction with a new car" (West-Burnham & Davies 1994:48). Parry (1993:30) states: "Quality is the integral value that accrues in a product or service as each employee contributes to it". In the school the fact that teachers and learners are engaged in quality teaching and learning can be measured through examination results at the end of the term or year.

The most appropriate definition of quality is by defining it in terms of the skills and competencies that learners need and how they can continually be updated and improved. Its relevancy and appropriateness stem from the fact that it "... incorporates the concepts of fitness

for purpose, customer needs, measuring outcomes and focusing on continuous improvement" (West-Burnham & Davies 1994:49).

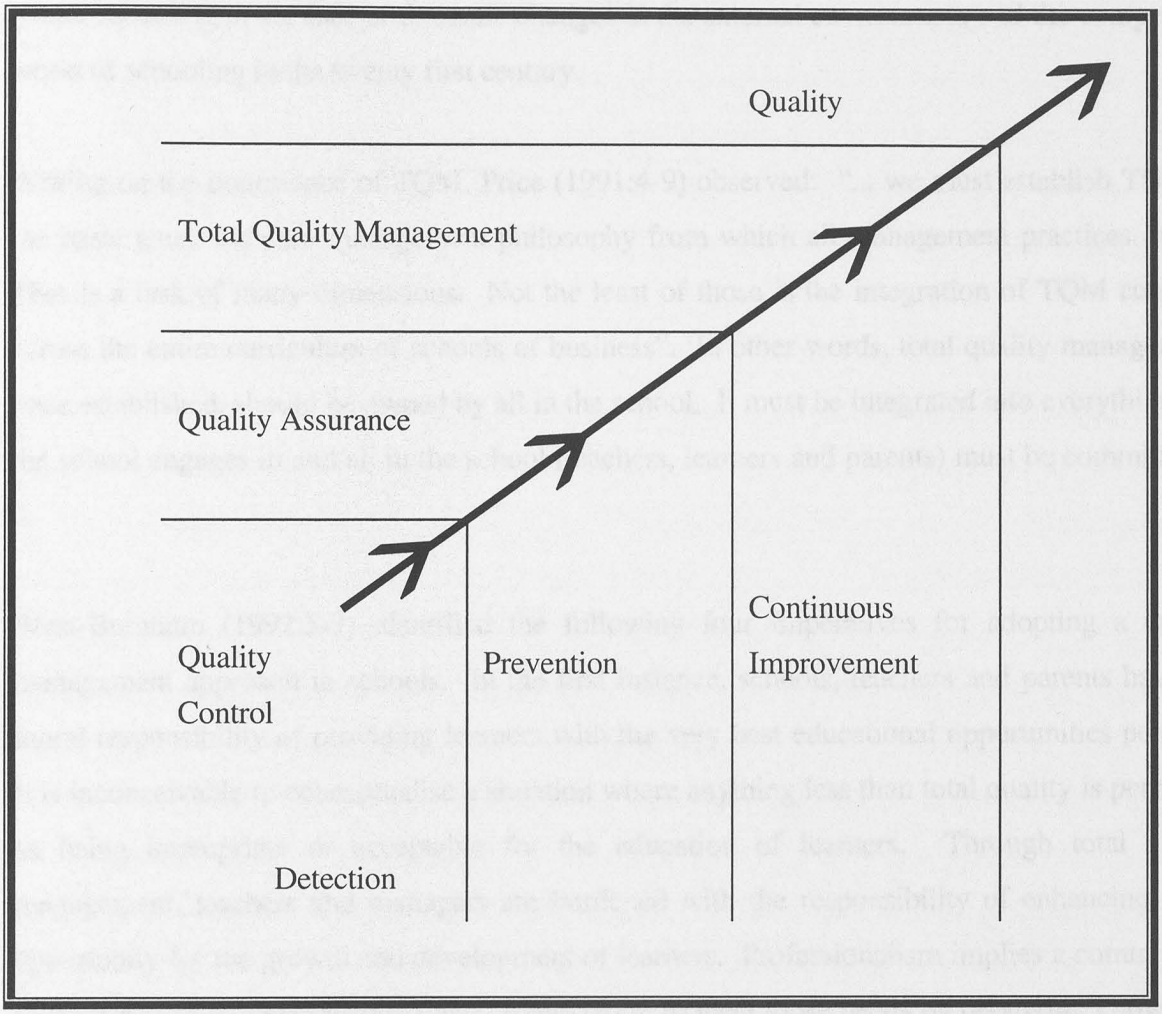

Figure 2.1: Flight Path to Quality (West-Burnham & Davies 1994:49)

In the above diagram (Figure 2.1) there are various stages through which quality passes. The realisation of quality is preceded by a number of strategies which should be employed in order to realise it. Detection and prevention alone does not help, but once barriers to quality have been detected, quality control and quality assurance mechanisms must be put in place and the involvement and commitment of all in the organisation must be sought and this should be continuous if quality is to be sustained.

2.2.2 The importance of total quality management (TQM)

Total quality management is an approach which has great potential for the enhancement of public schooling in the face of dramatic changes in the external environment and the competitive world of schooling in the twenty first century.

Writing on the importance of TQM, Price (1991:4-9) observed: "... we must establish TQM as the basic tenet, the core management philosophy from which all management practices derive. That is a task of many dimensions. Not the least of those is the integration of TQM concepts across the entire curriculum of schools of business". In other words, total quality management, once established, should be owned by all in the school. It must be integrated into everything that the school engages in and all in the school (teachers, learners and parents) must be committed to it.

West-Burnham (1992:5-7) identified the following four imperatives for adopting a quality management approach in schools. In the first instance, schools, teachers and parents have the moral responsibility of providing learners with the very best educational opportunities possible. It is inconceivable to conceptualise a situation where anything less than total quality is perceived as being appropriate or acceptable for the education of learners. Through total quality management, teachers and managers are burdened with the responsibility of enhancing every opportunity for the growth and development of learners. Professionalism implies a commitment to the needs of a client/customer and an obligation to meet those needs by deploying knowledge and skills to best effort. Managers and teachers, being professionals, are therefore charged with the responsibility of conferring a moral imperative to deliver consistent high levels of service. Only total quality management can make this happen.

Secondly, schools are always in a dynamic interaction with the society and community they serve. Societies and communities are now becoming increasingly quality conscious. If schools are to be genuinely responsible and responsive, they should increasingly become aware of and respond to quality issues. Being quality and service minded in schools means relating to and caring about the goals, needs, desires and interests of learners and making sure they are met. In this way schools will be serving their communities well.

In the third place schools must satisfy customer needs and expectations if they are to continue to survive. When learners' involvement in school activities increase, the involvement of parents in school matters increase; requests for admission to institutions also increase when the curriculum motivates learners intrinsically; when morale and motivation amongst learners and teachers has improved the results will be good and the customers (parents and learners) satisfied. Total quality management embodies principles that can achieve this (Moore 1993:7; Rappaport 1993:17; Schargel 1993:67-71). If schools fail to deliver to the satisfaction of their customers then their enrolments will dwindle and they will cease to be viable respectable institutions of learning.

The accountability imperative is the last reason put forward by West-Burnham in support of the adoption of the total quality management approach. The continual emphasis on inspection and reporting of schools requires the development of internal strategies which will accommodate and incorporate reporting and inspection procedures. Total quality management provides the vehicle for making these procedure intrinsic to school management processes and ensuring an effective response. If, for example, reporting and inspection are seen as ways of responding to customer requirements, they will become implicit to school processes rather than a foreign activity. In other words, they should be integrated into total quality management in such a way that they help the teacher in improving his teaching instead of demoralising him as a failure. Total quality management manages staff in ways that encourages them to monitor and inspect their own work and this includes self assessment of work so that learners take ownership of their own educational processes.

TQM provides an integrated response which has the potential of meeting the demands of the above imperatives in a manner which is consistent with the special nature of schools as organisations.

Van Cuylensburg in Chase (1992:6) presents the following reasons for the adoption of total quality management as a strategy:

- The first and fundamental reason is that it works. Its effect, even after only two or three years, can be dramatic, both on employee motivation and on an institution's performance.
- Total quality management provides a means of harnessing every employee's capabilities for improvement and knowledge of his or her job. Its continuous insistence on the

establishment of zero defect goals and continuous improvement encourages employees to improve and strive for excellence in all their endeavours.

- In the third place, total quality management is important because it is based on the need to bring a company and institutional processes under control and build them into self-sustaining modes of continuous improvement.
- The fourth reason is the universal ability of total quality principles to convert the apparent impossibilities of zero defects into a force for continuous improvement.
- In the fifth place, and perhaps the most important of all, is that our customers are beginning to demand total quality. Even learners no longer accept second fiddle service, they demand total quality service and because of this, the adoption of total quality management is imperative.

The last and all-encompassing reason for opting for total quality is that it is a competitive imperative. "Total quality is a competitive imperative for the 1990s. It must become part of the corporate culture. In such a culture employees cannot help but be involved, and through this involvement management can empower employees to continuously improve their performance" (Chase 1992:3). Because it fosters a competitive spirit, every employee will try to do his/her best and always strive towards improving on his/her previous performance, thereby ensuring total quality.

Schools with no continuous improvement programmes in place are more likely to be beaten by their competitors and by their customers. There is thus no better remedy for this than the adoption of total quality management. The above mentioned views by the authors referred to are complementary and interrelated. The adoption of the novel approach of total quality management may help in alleviating various school problems such as:

- students' examination results
- parental involvement
- student attendance figures; and
- staff attendance figures (Bradley 1993:12).

2.2.3 TQM in a classroom setting

In a classroom setting TQM is a way of doing business that must be instigated by top management and flow as a way of life throughout the school (organisation) to focus on the customer and to strive to improve the product performance continually (teaching) to ensure competitive advantage. It is based on the participation of all members of an organisation (school) in improving processes, products, services and the culture in which they work (Babbar 1995:3).

Babbar (1995:3) regards the key elements of TQM to be the following in schools:

- a relentless hunt for ways to improve quality;
- involvement of all employees (educators and support staff);
- managerial leadership;
- corporate culture (teaching and learning culture); and
- customer focus (identifying and satisfying customers needs).

These elements apply just as much to the teaching context as they do to business. The only difference lies in that in the teaching context "teacher" substitutes for "manager", the "students and teacher" for "employees", "class culture" for "corporate culture", and the "student" for "customer" (Babbar 1995:3). These are the essential parallels drawn in applying TQM to teaching.

In a class setting TQM is a process that involves the instructor's adopting a total quality approach to teaching (ie attempting to improve the quality of instruction and, in the process, the students' meaningful learning in every possible way) so that the needs of the students and those of their employers are best served. It is the never-ending pursuit of continuous improvement in the quality of education provided to the student (Babbar 1995:3).

2.3 Conceptual delineation of quality and TQM

The concepts quality management and total quality management are as open to abuse as other concepts and defining them cannot be an easy task as they are interrelated and intertwined.

2.3.1 Quality

Quality should be regarded as a process and not a product. Quality should be seen in terms of relationships rather than intangible (and unattainable) goals. If it is defined by providers then it will always be elusive, but if it is defined by clients in terms of relationships, then it becomes attainable (West-Burnham 1992:15).

Sallis (1993:22) defines quality as follows: "As an absolute, quality is similar in nature to goodness, beauty and truth, an ideal with which there can be no compromise. In the absolute definition things which exhibit quality are of the highest possible standard which cannot be surpassed. Quality products are things of perfection made with no expense spared". In this sense, quality is used "... to convey status and positional advantage and the ownership of things of 'quality' sets the owners apart from those who cannot afford them".

Quality and total quality management are related concepts. Quality can be defined in the sense in which it is used in total quality management. Here quality is viewed not as an attribute of a product or service, but as something which is ascribed to it. Quality can be judged to exist when a product or service meets the specification that has been laid down for it. Quality products or services must do what they claim to do, and do what their customers expect of them. In other words, they must be 'fit for their purpose' and be customer-driven (Murgatroyd & Morgan 1993:50; Sallis 1993:23).

Concentrating on quality will ultimately bring about and improve both profitability and productivity (good results and students of the highest standard/abilities) and failure to concentrate on quality will quickly erode profits as customers resent paying for goods they perceive as of low quality. Likewise in the educational context, students will leave for the one they perceive as of quality. It is in the light of this that Lewis and Smith (1993:30) formulated the following definition: "It is an attempt to identify the causes of defects in order to eliminate them. It is a continuous cycle of detecting defects, identifying their causes and improving the process so as to totally eliminate the causes of defects".

Products or services of quality are products or services which everybody wants. These are products or services of the highest standard which are designed to delight and satisfy customers

as they have very few or no defects at all. Quality education and quality results are what all schools are striving to achieve as these will satisfy both parents and learners.

2.3.2 Total Quality Management

Total quality management is an approach which provides a methodology that can assist educational managers to cope with challenges and changes in the social environment (Arcaro 1995:6). It is also regarded as a "… co-operative form of doing business that relies on the talents and capabilities of both labour and management to continually improve quality and productivity using teams" (Jablonski 1992:21).

Total quality management (TQM) is a way of managing to improve the effectiveness, efficiency, cohesiveness, flexibility and competitiveness of a business as a whole. TQM consists of a "management philosophy and company practices which aim to harness the human and material resources of an organisation in the most effective way to achieve the objectives of the organisation" (Ho & Wearn 1995:1).

Therefore, "… total quality management believes in providing an ever-improving quality of products and services to its stakeholders (customers) and further solicits and utilises customer feedback to develop specifications of the quality levels for both products and services to be strived for and achieved by those managing the quality management operation in the school" (Herman 1992:2).

Plice (1992:21) added: "Thus, total quality management is an all-encompassing approach of managing an organisation in an optimal way so that the goods or services it produces meet the needs of the organisation's customers".

Total quality management (TQM) is process thinking, it is systems thinking with a holistic mental model based on shared and jointly developed vision, mission and goals which are future-orientated. TQM emphasises teamwork, commitment to the purpose of meeting customer needs and expectations, and internal flexibility and process revision with an emphasis on continuous improvement across organisational boundaries (Weller 1998:6).

Striving for total quality management is a quest for excellence or zero defects in the execution of duties with a view to satisfying the people for whom the service is rendered. Of utmost importance is that total quality management is a continuous improvement on the quality of the services rendered. Total quality management is in essence a quality concept in that it is an approach which is aimed at continuously improving the performance of the school in all its different aspects.

2.4 Why holistic (total) quality management?

A relevant question that one can ask is why adopt a holistic quality management approach to school improvement? What are the advantages of a holistic quality approach to school improvement and what are the disadvantages or cautions to be taken heed of?

In response thereto, Herman (1992:43-44) enumerated the following advantages of and cautions with regard to the holistic quality approach:

- A holistic quality approach will avoid an attempt to jump on the bandwagon for every restructuring idea that is recommended.

- It will unify all individuals and organisational efforts focussed on a clear vision, goals, objectives and a series of action programs.

- It will avoid overlap and conflict among the various restructuring programs being attempted.

- Employees and other stakeholders will understand that a well-planned, holistic approach to school improvement is being attempted by the school district and its constituent schools, and they will also realise what will remain in a stabilised condition and what will be changed.

- Change will take place on the basis of data collection, analysis, feedback and recycling activities.

Apart from the foregoing advantages, he also identified some cautions which need to be stressed, namely, that:

- causing holistic transformational and systematic change is much more complicated than merely integrating a single restructuring idea into an existing operational structure.

- implementing a holistic transformational and systematic change is a long-term, working- and thinking-intensive activity and many individuals may not be up to this comprehensive challenge.

- a holistic transformational and systematic change is a continuing, never-ending process and the quest for continual quality improvement may be difficult to maintain as individuals change, as new people enter the employment of the school district and as additional promising restructuring ideas have to be integrated into this holistic approach to transformational and systematic change (Herman 1992:43-44).

Total quality management or holistic quality management (as they mean the same) requires individuals to work co-operatively for the benefit of everyone (Blankstein 1996:28). Its significance for the school lies in that it involves everybody in the school (learners, teachers, parents) and also affects all aspects of schooling, for example teaching, discipline, learning, attendance and punctuality. When the school is engaged in TQM, all aspects of schooling must show an improvement for the better.

2.5 Historical background of TQM

The move towards total quality management had its origin in Japan following the Second World War. This movement was inspired and sustained by two Americans, Deming and Juran. The other quality gurus worthy of mentioning are Crosby and the Japanese Ishikawa and to a lesser extent Taguchi.

An historical overview of these gurus is of importance as it indicates how total quality management originated and developed.

2.5.1 Edward Deming

Deming was born in America in 1900. He was a statistician with a PhD-degree in physics. His influence was first felt in Japan in the late 1940s where he was to work on the Japanese post-war census. Impressed by his work in that short spell, the Japanese Union of Engineers and Scientists invited him to return in 1950 to give lectures to leading Japanese industrialists on the application of statistical process control. The Japanese had problems with the reconstruction of their war-torn industry as most of the industries had been destroyed by American bombing and they thus wanted to learn the lessons of quality control from other industrialised nations.

Deming gave his Japanese audiences a simple answer to their problem: "He told them to start by finding out what their customers wanted. Once they knew that, he suggested that they design both their methods of production and their products to the highest standards. This would enable them to take the lead" (Sallis 1993:16).

The Japanese put into practice the ideas of Deming and of the other gurus, Joseph Juran and others who visited Japan at that time and they developed these ideas into what they called total quality control (TQC) and ended up capturing and creating the lion's share of world markets because of their concern for quality in their products. It is interesting to note that Deming and Juran's ideas on quality were ignored in their native land until the late 70s when they started to take the ideas of these gurus seriously (Sallis 1993:17).

Deming's views on quality management have been synthesised into fourteen points:

- Create constancy of purpose for continual improvement of products and services.
- Adopt the new philosophy and abandon traditional ways of working.
- Move from inspection to building quality into every product and process.
- Stop awarding contracts on the basis of lowest bid-specify and buy quality.
- Engage in a process of continually improving every aspect of company activity.
- Use work-based training techniques.
- The emphasis for leaders and managers must be on quality not quantity.
- Drive out fear by improving communication.
- Break down organisation barriers.
- Eliminate slogans and exhortations.

- Eliminate arbitrary numerical targets.
- Allow for pride of workmanship by locating responsibility with the worker.
- Encourage education and self-development.
- Create a management structure and culture that will drive the preceding 13 points (West-Burnham 1992:18).

The above points brought Deming under fire for their perceived commonness or banality but his philosophy has been widely adopted and applied and it is highly congruent with that of other theorists.

2.5.2 Joseph Juran

The son of an immigrant shoemaker from Romania, Juran began his industrial career at Western Electric's Hawthorne plant before the Second World War. He later worked at Bell Laboratories in the area of quality assurance. Before establishing his own consulting firm called the Juran Institute, he worked as a government administrator, university professor, labour arbitrator and corporate director. He is regarded as the creator of statistical quality control and he authored the book entitled *The Quality Control Handbook.* His definition of quality is described as "... fitness for use as perceived by the customer". His concept of quality included the managerial dimensions of planning, organising and controlling, the so-called Juran Trilogy (Lewis & Smith 1993:53-54).

In line with the other gurus, he summarised his principles of quality management as ten steps to quality improvement:

- Create awareness of the need and opportunity for improvement.
- Set explicit goals for improvement.
- Create an organisational structure to drive the improvement process.
- Provide appropriate training.
- Adopt a project approach to problem solving.
- Identify and report progress.
- Recognise and reinforce success.
- Communicate results.
- Keep records of changes.

- Build an annual improvement cycle into all company processes (West-Burnham 1992:19).

Juran placed great emphasis on leadership and teamwork, arguing that quality management is a balance of human relation skills and statistical process control skills.

2.5.3 Phillip Crosby

The emergence of Phillip Crosby in the total quality management scene began in 1961 when he first developed the concept of zero defects while working as a quality manager at Martin Marcetta Corporation in Orlando, Florida. Known for his motivational talks and style of presentation, he believed that "zero defects" motivated line workers to turn out perfect products (Lewis & Smith 1993:57).

Sallis (1993:53-55) associates Phillip Crosby's name with two very appealing and powerful ideas in quality. His first idea is that "quality is free" by which he means that there is so much waste and inefficiency in most systems that the savings from quality improvement programmes pay for themselves. The other one is the notion of "zero defects" which is his major but controversial contribution to thinking on quality. Zero defects is the commitment to success and the elimination of failure and for him there is only one standard, and that is perfection. This concept is hard to apply to services rather than to manufacturing.

Crosby is known for his four absolutes of quality management:

- Quality has to be defined as conformance to requirements, not as goodness or excellence.
- The system for causing quality is prevention, not appraisal.
- The performance standard must be zero defects not "that's close enough".
- The measurement of quality is the price of non-conformance, not indices (Lesley & Munro-Faure 1992:289-290).

The above four absolutes of quality, according to Lesley and Faure, underpinned Crosby's philosophy. These absolutes of quality have been adopted by many companies and have almost become associated with TQM. In the school situation they cannot be adopted as a whole *per se* as some aspects, like zero defects as a performance, are hopelessly unrealistic.

The above mentionted are three of the most important quality management gurus. All have concentrated on quality in the manufacturing industry but they all claim that their ideas are equally applicable to service industries. None of them has given much consideration to quality issues in education but nevertheless their contribution to the quality movement has been so great that it is difficult to explore quality without recourse to their thinking (Sallis 1993:45).
It is important to note that their approaches have limitations and drawbacks more so as they were developed in an industrial context. However, they are illuminating and can provide direction and there is much that can be learnt from them and be adapted to education. As there is much overlap in their thinking it will therefore be acceptable to mix and match them.

There are also other gurus who made contributions to total quality management. Although their contributions were not as significant as those of the above mentioned gurus, they cannot be ignored. They are Kaoru Ishikawa and Armand Feigebaum.

2.5.4 Kaoru Ishikawa

Ishikawa studied under Edward Deming during the late 1940s and early 1950s. His accomplishments include the success of the quality circle in Japan, in part due to innovative tools such as the cause-and-effect diagram (often called the Ishikawa fishbone diagram because it resembles a fish skeleton). His approach was to provide easy-to-use analytical tools that could be used by all workers, including those on the line, to analyse and solve problems (Lewis & Smith 1993:55).

The quality circle movement first emerged in Japan in the early 1960s and it was used across the world as a strategy to involve "shop floor" and production workers in a drive for quality. It was aimed at creating a sense of involvement and ownership amongst workers. The key characteristics of quality circles are as follows:

- between three and twelve members, doing the same job or process;
- attendance is voluntary;
- meetings are regular, for example one hour per week;
- they are led by the supervisor;
- they identify, analyse and propose solutions to work based problems;
- they recommend solutions to management; and

- they implement those solutions (West Burnham 1992:133-134).

It will not be wise to have teams and quality circles working in parallel as they are more or less the same. It may be argued that quality circles are more valid for non-teaching staff, given their different contracts of employment, however, the answer would seem to combine the principles of effective quality circles to create self managing teams which are essential for total quality management (West Burnham 1992:134).

Kaoru Ishikawa described quality circles as small groups based upon mutual trust, which voluntarily perform quality control activities within the workplace, and which use quality control methods and techniques. The aim of quality circles according to Ishikawa are:

- they contribute to the improvement and development of the enterprises;
- respect humanity and build a worthwhile, to have happy and bright workshop; and
- exercise human capabilities fully, and eventually draw out infinite possibilities (Sallis 1993:98).

Although the major difference between teams and quality circles is voluntarism, what is important is what unites the two, namely that both are based on the idea that there is a synergy to be gained by working together in a structured and self-directed way to improve the service being provided.

He identified seven critical success factors that were essential for the success of total quality in Japan:

- Company wide total quality control (CWTQC) and participation by all members of the organisation.

- Education and training in all aspects of total quality, which often amounts to thirty days per year per employee.

- Use of quality circles to update standards and regulations which are in constant need of improvement.

- Quality audits by the president and quality council members (senior executives) twice a year.

- Widespread use of statistical methods and a focus on problem prevention.

- Nationwide quality control promotion activities, with the national imperative of keeping Japanese quality number one in the world.

- Revolutionary mental attitude on the part of both management and workers toward one another and toward the customer, including welcoming complaints, encouraging risk, and a wider span of control.

According to Ishikawa, Japanese management must include all stakeholders providing guidelines and implementing the policies so that they are followed by all.

2.5.5 Armand Feigenbaum

Feigenbaum did not work with the Japanese. He worked as vice-president of Worldwide Quality for General Electric until the late 1960s when he set up his own consulting firm called General Systems Inc. He is well-known for coining the term total quality control and for his book on total quality control (Lewis & Smith 1993:56).

According to him there are two requirements to establishing quality as a business strategy: establishing customer satisfaction must be central, and quality or cost objectives must drive the total quality system.

Feigenbaum developed a systems theory of total quality control which includes four principles:

- Total quality is a continuous work process, starting with customer requirements and ending with customer satisfaction.

- Documentation allows visualisation and communication of work assignments.

- The quality system provides for greater flexibility because of a greater use of the alternatives provided.

- Systematic re-engineering of major quality activities leads to greater levels of continuous improvement (Lewis & Smith 1993:57).

Feigenbaum focussed his attention on the benefits and outcomes of total quality rather than only the process to follow.

Despite different approaches to and perspectives on quality among the quality gurus there is, however, also much common ground between their approaches and the following commitments are common to all the gurus:

- Quality is the key to a successful business. Inadequate attention to quality will lead to the failure of the business in the long-run.

- Quality improvements require the full commitment of management to succeed. This commitment to quality must be continuous.

- Quality improvement is hard work. There are no shortcuts or quick fixes. Successful quality improvement frequently requires a change in culture for the whole organisation.

- Quality improvement always requires extensive training.
- Successful quality improvement requires the active involvement of all employees and absolute commitment from senior management (Munro-Faure 1992:288).

An historical overview of the above gurus is important as it indicates to us where total quality management originated and how it was then adapted to education. It is also an indication that its effectiveness in the business sectors prompted people to adapt it to education.

Contributions of gurus to the TQM-approach					
TQM Principles	**Deming, E**	**Juran, J**	**Crosby, P**	**Ishikawa, K**	**Feigenbaum, A**
1. Continuous improvement	X	X	X	X	X
2. Constant communication	X	X			X
3. Continuous training	X	X		X	
4. Education for self development	X				
5. Creation of management structure to drive the improvement process	X	X		X	
6. Recognition, report and reinforcing success		X			
7. Emphasis on quality not quantity	X		X	X	
8. Importance of teamwork (involvement of all in the organisation)				X	
9. Setting goals for improvement		X			
10. Use of statistical methods and problem prevention				X	
11. Customer requirements and customer satisfaction			X		X
12. Zero defects			X		

Table 2.1: Summary of contributions of gurus

From the above matrix it is clear that all the gurus agree that:

- Quality is the key to a successful business. Inadequate attention to quality will lead to the failure of the business in the long-run.

- Quality improvement requires the full commitment of management to succeed. For this to materialise a proper management structure is essential to carry this process forward.

- Quality improvement always requires extensive training.

- Successful quality improvement requires the active involvement of all employees and absolute commitment from senior management.

With regard to most of the aspects mentioned above the gurus did not differ much, although there are several aspects which are associated with particular gurus like the zero defect aspect which is linked to Crosby, while the use of statistical methods is linked to Ishikawa. From the above matrix it is clear that most of the total quality management principles originated from these gurus.

2.6 Research done abroad (USA and Britain) on TQM in schools

The movement for total quality in education is of a more recent origin. In both the United States and Britain the surge of interest in education occurred from 1990 onwards (Sallis 1993:18).

The definition of quality which emphasised the satisfaction of customers did not go down well with some educationalists. Many educationalists have disliked drawing analogies between educational processes and the manufacturing of industrial products (Sallis 1993:19). Recent developments, however, such as business sponsoring several educational endeavours like soccer, netball and floating trophies for best students and other contributions, have brought education and business closer together and these have also made industrial concepts more acceptable to education. "Institutions which have wanted to go beyond performance indicators have started to look seriously at TQM as a means of improving their standard of service" (Sallis 1993:19).

As institutions now demand more freedom, "... they need to match this by greater accountability. Institutions have to demonstrate that they are able to offer a quality education to their learners. We live in an era of greater competition where many of the old certainties are disappearing" (Sallis 1993:19). In order to face the competition well, institutions need to focus on the needs of their customers, which is the main aspect of quality. The introduction and

adoption of total quality in education is long overdue and ought to have taken prominence long ago.

Certain concepts like 'right first time' and 'zero defects' are problematical in education but if one views 'right first time' as a concept which applies to both process and products, one will be able to see its relevance. 'Zero defects' will not necessarily mean perfection in education but striving towards it, taking into consideration the weakness of man. Despite these, there is much in total quality that can be accepted and applied and much of what it proposes already exists in the literature for school management. What remains is to "integrate it into a coherent and comprehensive whole" (West-Burnham 1992:26).

Doing it 'right first time' and 'zero defects' are motivation for the teachers. These concepts will motivate teachers to do their work thoroughly and be committed to their work in order to minimise mistakes. The fact, however, remains that they are aimed at motivating all stakeholders to do their best in order to achieve quality.

In defining total quality management in the educational context, Murgatroyd and Morgan (1993:59-61) emphasise that the key word in total quality management is management. They further state "... that quality performance does not occur by chance or accident, it occurs because it is designed into the way the organisation works, it permeates all aspects of the organisation" (Murgatroyd & Morgan 1993:59).

This then boils down to the fact that for quality performance to occur, there should be leadership – the kind of leadership that will ensure that all in the organisation are working in a way that ensures a consistently high performance. All aspects of the organisation have to be dedicated to the goal of achieving the highest standards of performance. Consultation with all stakeholders should be an ongoing process to determine their needs and to provide feedback as this will ensure continuous improvement.

Research done abroad in schools on total quality management reflects that they were able to adapt total quality management in their schools successfully. To cite a practical school-based example: "If we want to achieve the goal of zero truancy, then there are a variety of processes we can set in motion to achieve this objective. These processes may need to be different for

different kinds of truancy and may need to be different for different age groups" (Murgatroyd & Morgan 1993:11).

What is of importance is to make certain what the goal is and to keep on reminding people of that goal (zero truancy, for example) and thereafter focus can frequently be placed on managing the processes for achieving that goal exceptionally well. The outcome will follow from the quality of management being applied to the detail of the processes of the many internal customer-supplier relationships within the school (Murgatroyd & Morgan 1993:61).

Another school which successfully made use of total quality management principles and tools to bring about improvement on the performance of its learners, educators and all stakeholders is the Enterprise School District in Redding, California.

They believed that all learners enter Kindergarten with great potential and that no learners should be losers, instead they should all win together as a team (Jenkins 1995:1).

They thus changed the primary methods of reporting learner progress to eliminate ranking and creating losers. The challenge was thus to provide accurate data on learners' progress without having to rank them thus damaging the growth of other children. This belief was stemmed in the believe that no parent wanted his/her child to be a loser, they all want them to be winners.

They all believed that adults (educators) are in charge of the system (which in Deming's view is the school or the classroom) which discourages or encourages children. Deming believed that most of the problems in any system are related to the system and that the leader (educator) is the only one with the power to change the system (Jenkins 1995:3-4).

Changing Deming's system thinking to fit their system (classroom/school) they further believed that:

- The teacher is in charge of the classroom and has the sole power to change it.

- The teacher enlists the help of learners and parents in improving the classroom.

- He/she establishes a feedback method to give the teacher and learner continual information on how the system is doing.

- Based on this feedback, the teacher adjusts the system so that all learners learn the expected content.

- He/she determines which learners, if any, are excelling beyond expectations or are in danger of failing (Jenkins 1995:4).

They were able to achieve the above through putting into action, quality tools but not before they made a review of Deming's steps, to the following:

- Determine the content learners are to know at the end of the year.

- Starting from week one of the course, quiz on the square root of the total content. Items are to be randomly selected from the total course content.

- Build a scatter diagram displaying the score for each student each week.

- Build a run chart for the total correct for the classroom.

- With this feedback, continuously improve the classroom system.

- Never rank students performing within the system.

- Enlist the help of learners to improve the system.

- If some learners are above or below the system, provide them with special assignments. Those at the risk of failing need help to return to the system. Those exceeding course expectations need special assignments to avoid boredom (Jenkins 1997:7).

The following quality tools were used:

The **scatter diagram** is a plot of two variables. It is used to see patterns that indicate or confirm a relationship between the variables. At least 50 pairs of data are needed to correctly apply this tool. It can also be used to determine the strength or correlation of a relationship between the variables. (See figure 2.2.)

The **run chart** is a line graph of data points in a time sequence and is used to detect changes and determine trends in the process. Generally, at least 20 data points are needed before process performance can be assessed. (See figure 2.3 and 2.4.)

The **histogram** is a bar graph of the frequency distribution of measurements used to determine the shape of the distribution relative to examine the variation pattern. At least 30 observations are required and only one characteristic should be studied in each histogram (Jenkins 1995:7). (See figure 2.5.)

In a classroom situation, the educator can use the run chart and scatter diagram in the following way to assess progress in his/her classroom:

An educator decides that learners need to know, for example, 100 concepts (in Maths), or 100 spelling words or 100 locations (in Geography) that he/she wants his/her learners to know at the end of the year.

He/she quizzes the learner on 10 randomly selected items/spelling words or locations each week. The ten items are not announced ahead of time so learners cannot cram for the test. Rather the items are randomly chosen at quiz time. Each week, the total number of items correct for the whole class is recorded on a run chart, while placing a dot for each learner next to the number of a correct answer in a scatter diagram respectively. The horizontal axis in the run chart represents the time sequence while the vertical axis represents the subject of interest (Jenkins 1995:8). The horizontal axis in the scatter diagram indicate whether a relationship exists between two factors. The horizontal axis represents the time sequence and the vertical axis represents the subject of interest.

Run charts and scatter diagrams were found to be useful in tracking student progress in physical education. One grade 7 educator used a scatter diagram to track each week, the number of laps her individual learners ran in six minutes. She then compiled the data for a run chart that showed the total number of laps run by the class as a whole each week and all other fitness activities can be recorded similarly (Jenkins 1995:21).

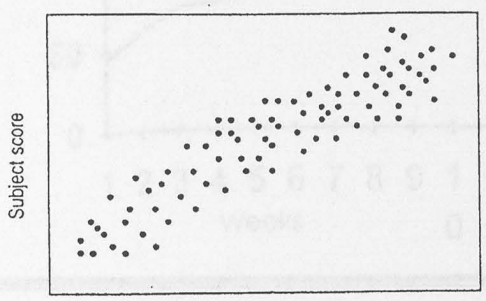

Figure 4: Strong positive correlation

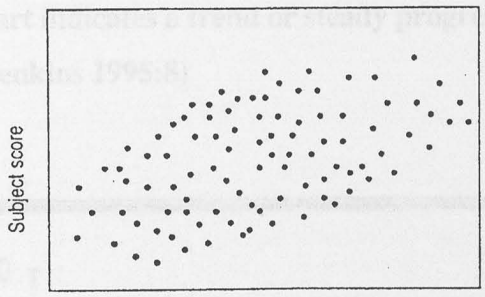

Figure 5: Possible correlation

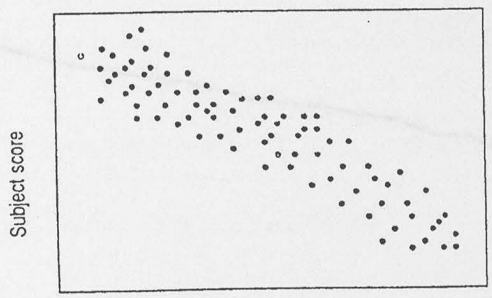

Figure 6: Strong negative correlation

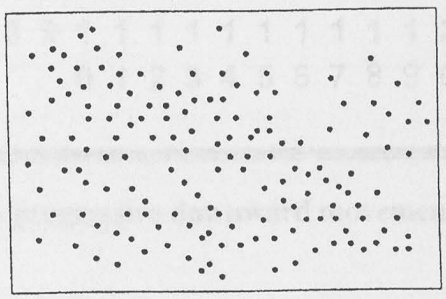

Figure 7: No correlation

Figure 2.2: Examples of scatter diagrams (Jenkins 1995:9)

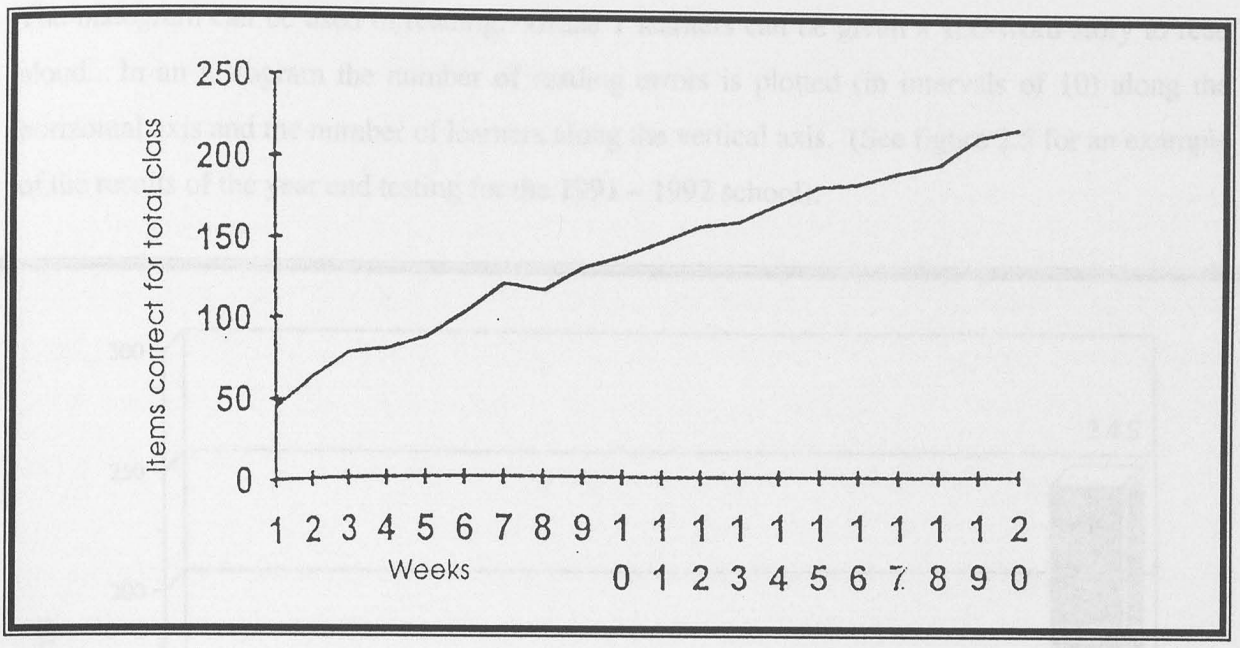

Figure 2.3: Run chart indicates a trend or steady progressive upward movement of at least seven data points (Jenkins 1995:8)

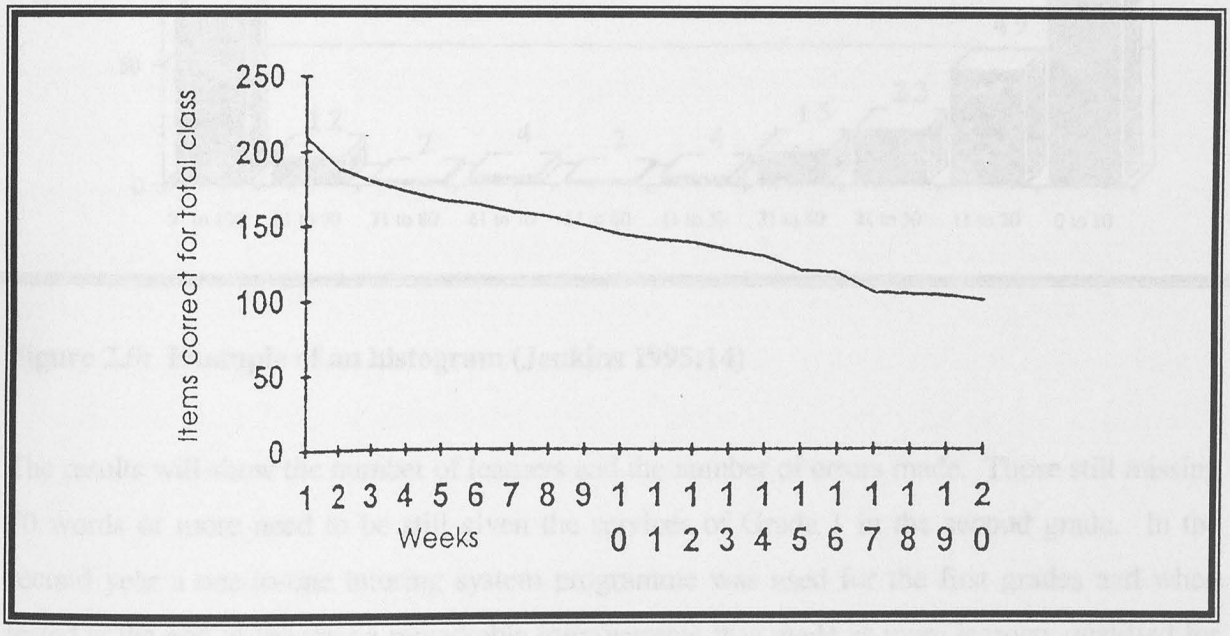

Figure 2.4: Run chart indicates a steady progressive downward movement of at least seven data points (Jenkins 1995:8)

The histogram can be used in reading. Grade 1 learners can be given a 100-word story to read aloud. In an histogram the number of reading errors is plotted (in intervals of 10) along the horizontal axis and the number of learners along the vertical axis. (See figure 2.5 for an example of the results of the year end testing for the 1991 – 1992 school).

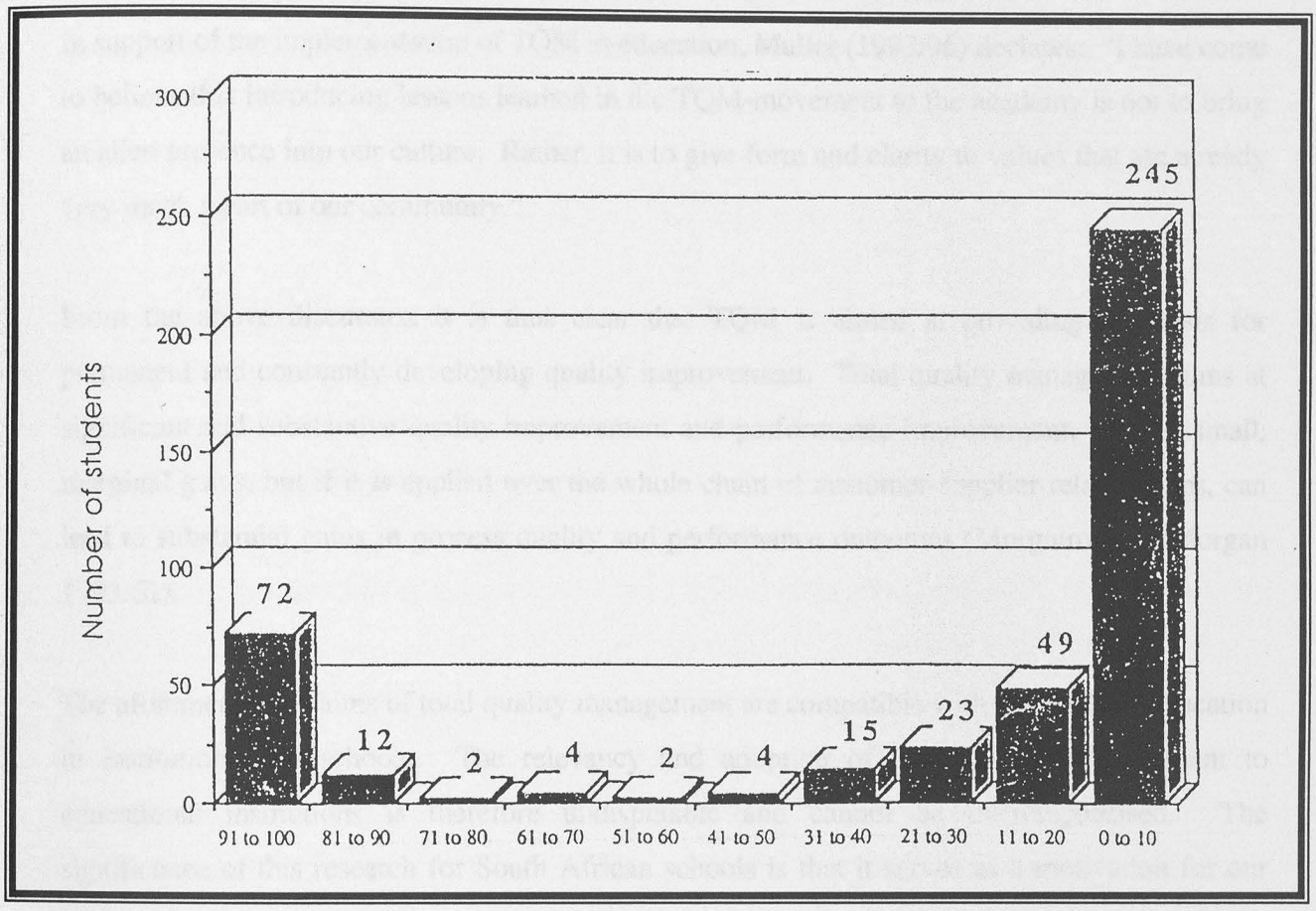

Figure 2.5: Example of an histogram (Jenkins 1995:14)

The results will show the number of learners and the number of errors made. Those still missing 70 words or more need to be still given the services of Grade 1 in the second grade. In the second year a one-to-one tutoring system programme was used for the first grades and when tested at the end of the year a remarkable improvement was made as more learners qualified for Chapter 1 services for the following year (Jenkins 1995:14).

The above three tools, the run chart, the scatter diagram and histogram, give educators a picture of their classrooms. Educators can keep run charts and scatter diagrams in mathematics, geography, writing, spelling, reading and physical education. All these helped in charting learners' progress and proved to enhance performance continuously. The use of total quality

management tools (a TQM principle) transformed Enterprise School District into a quality school using TQM tools. In the end they developed the Enterprise Weekly which is an ongoing assessment, using quality tools to meet all of their needs. The use of the above tools are applicable to all schools and can be applied by all educators.

In support of the implementation of TQM in education, Muller (1993:96) declares: "I have come to believe that introducing lessons learned in the TQM-movement to the academy is not to bring an alien presence into our culture. Rather, it is to give form and clarity to values that are already very much a part of our community."

From the above discussion it is thus clear that TQM is aimed at providing the basis for permanent and constantly developing quality improvement. Total quality management aims at significant and substantive quality improvement and performance improvement, not just small, marginal gains, but if it is applied over the whole chain of customer-supplier relationships, can lead to substantial gains in process quality and performance outcomes (Murgatroyd & Morgan 1993:61).

The aforementioned aims of total quality management are compatible with the goals of education in institutions and schools. The relevancy and adoption of total quality management to educational institutions is therefore undisputable and cannot be overemphasised. The significance of this research for South African schools is that it serves as a motivation for our schools to also adopt TQM as a powerful vehicle to deal with poor quality in schools because it provides a structured, systematic educational delivery system which leads to an improvement in various areas (learner performance and motivation, staff motivation). Total quality management can also help South African schools achieve quality (Weller & McElwee 1997:201).

Total quality management can also help schools bring about systematic change by using tools for data analysis and decision-making instead of using experience (Wiedmer & Harris 1997:315). Because its principles also focus on the importance of each individual in effecting continuous improvement, it therefore means that this approach involves the participation of all in the school.

There are many documented examples of schools which have adopted the TQM principles successfully. English (1994) and Davies (1994) stress the importance of principals in initiating school change but stress that teacher buy-in is essential for cultural change, a true school

transformation. Monk (1993), Murgatroyd and Morgan (1993), Schmoker and Wilson (1993) and Weller and Hartley (1994) document the positive outcomes of TQM as a school transformational process. These include student gains on tests or achievement, improved student self-esteem and increased teacher morale. These schools have vision, mission, and empowered teacher teams who participate in governance. Their constancy of purpose is to improve continuously and they take pride in their work as they strive to achieve quality performance for themselves and their students (Weller 1998:6).

2.7 Research done in South Africa on total quality management

Total quality management in South Africa is still a new approach and not much has been documented regarding research in South African schools. However, in recent years, South African scholars have started to do research on total quality management in local schools (Prep View 1993:1; Hayward 1998:283; Steyn 2001:21; Hayward & Steyn 2001:106).

Total quality management principles have been continuously applied to a South African primary school in Grahamstown. This has proved that TQM has had the power to transform a school into a vibrant centre of learning and teaching. They were able to satisfy the needs of parents, learners, educators and the community. The community (parents) were more involved together with educators and learners in education and hence the change into a vibrant centre of teaching and learning. The headmaster of St Andrew's Preparatory School in Grahamstown confirms this: "Our experience has already proved that the continuous application of the principles of total quality management has the power to transform our school into a vibrant centre of learning and teaching, which will cater for the needs of our students, parents, society in general and all who work at Prep for many years into the new century" (Prep View 1993:1).

The second documented research done on TQM in south Africa is an action research project done at IR Griffith Primary School in the Gauteng Province. RPD Hayward, the researcher, formulated his research question as follows: How can the education offered to learners at a South African school be improved through the implementation of total quality education (TQE) principles and practices?

An action research design was used to focus on areas for improvement which include physical resources, the curriculum, learner management, school uniform, financial management and

parent involvement. An action research focuses on immediate application with the purpose to improve practices and to have a better understanding of these practices (Best & Kahn 1993:24; De Vos& Fouche 1998:80). It is a continuous spiral of looking, thinking and acting which encourages consensual and participatory procedures that enable people to investigate problems and issues systematically, to formulate powerful and sophisticated accounts of their situation, and to devise plans to deal with the problems at hand (Stringer 1996:15). In this study all stakeholders were participants in the continuous action research cycles of looking, thinking and acting. For an example concerning physical resources, the researcher conducted an on-site inspection of the school and its surroundings. Classes, gardens and grounds were in good order. The grade three classes were using a dilapidated pre-fabricated classroom and the staff quarters were unhygienic and overcrowded.

Various stakeholders discussed how the physical resources could be improved. The governing body compiled a list of the desired physical resource improvements. By involving all stakeholders they were able to put up the needed structures within three years (1993 – 1995) (Hayward & Steyn 2001:106).

The involvement of relevant stakeholders in all areas which needed improvement yielded the desired results. While TQM is undoubtedly relevant in education, Hayward (1998:283) regards total quality education (TQE) as having an even greater and unique contribution to make in creating quality schools. He states that the concept TQE gives a distinct identity to those endeavours that improve quality in the educational sector compared to any other sector of the society and secondly, that by using TQE, educators are made aware that to implement TQE, considerably more is required than simply focusing on the management of the institution as might be incorrectly inferred in the concept of TQM (Hayward & Steyn 2001:104). He successfully applied the PDCA cycle to various areas in the school including physical resources, the curriculum, learner management, the school uniform, extramural activities, financial management, marketing, the organisational climate and staff development (Steyn 2001:21).

Another example is of a school which scooped the Presidential Award for being the best South African school in terms of continuous improvement in its grade 12 results since 1998. A look at how it achieved this, revealed that it made use of some of the TQM principles. The school is called Tsoseletso High School in Mangaung in the Gauteng Province. Its motto is: Discipline, commitment and excellence. At its establishment in 1989 its first principal Mr Khoarai Khoarai

said to his teachers: I am committed not to establishing just another secondary school in Mangaung, but a school with a special character, a school that will be the pride of not only the Mangaung community but the province as a whole, and God willing, South Africa. An institution that will nurture the leaders of tomorrow, transform the community, restore the black man's pride and a school that will compete, challenge and beat the best in South Africa (Khoarai 2002:1).

He believed that discipline is the cornerstone of education because it starts with the teachers and ends with the children. It has everything to do with the teacher's attitude towards his work and a teacher's professional attitude and approach to their duties. It also has everything to do with the teacher being totally committed to his or her work and when the teacher is totally committed to his work, the children will have no choice but to follow his or her example. When the teachers and children are totally committed to their work, excellence will surely follow (Khoarai 2002:1). In all its initiatives it involves learners, school governing body, teachers and other parents and this transformed it into a consistently impressive school since its establishment in all activities both academically and in sports and extramural activities. It has dominated local, provincial and national competitions in various sporting codes including netball and soccer and activities such as majorettes and debates. Its matric results showed a continuous improvement since its first batch of matriculants in 1993 (which obtained a 56% pass). Since 1998 they consistently obtained 98% and a 100% in 2001. This school scooped a Presidential Award for being the best school in the country for achieving a 100% pass last year with a record number of 240 pupils and having a consistent matric pass rate of 98% since 1998 (Khoarai 2002:1).

They succeeded because:

- they were prepared to go that extra mile to attain success (commitment);
- they were never ever prepared to do just the minimum or settle for less (a show of commitment);
- the commitment of the top management played a privotal role (a TQM principle);

- the commitment of teachers, learners and parents paid dividends (a TQM prerequisite); and

- concentrated on all grades, as grooming should start very early: They believed that working hard in the final year is futile (Khoarai 2002:1) (a TQM principle).

The above experiences by two South African schools and a third example of Tsoseletso School could well serve as a promising invitation to other South African schools which are in dire need of quality education.

2.8 The pillars of total quality management

If a school is to become a quality school, then certain criteria have to be met. These criteria will distinguish a total quality school from a non-quality school. The criteria for a total quality school are classified as the "pillars of quality" for education (Arcaro 1995: 9; Lewis & Smith 1993:83).

These pillars of quality are universal and applicable to every educational institution and should be present in order to attain the total quality school status. The beliefs and values of a school will determine the success and strength of the quality transformation (Arcaro 1995:10). These pillars are driving forces that support and move the organisation towards the full application of quality service. If total quality management is to be realised, then the focus cannot be limited to one or two pillars but instead focus should be on all pillars and their foundations. Arcaro (1995:10) identified five pillars of quality, namely:

- Customer focus
- Total involvement
- Measurement/managers with facts
- Commitment
- Continuous improvement

Lewis and Smith (1993:91) identified the four pillars of quality as the following:

- Serving the customer

- Continuous improvement
- Managing with facts
- Respect for people

In reality there are only four pillars as indicated above, the only difference is that Arcaro (1995:10) regards total involvement and commitment as different pillars. In reality total involvement and commitment refer to the involvement and commitment of senior managers in total quality management which is the same. Measurements (Arcaro 1995:10) and managing facts (Lewis & Smith 1993:91) are also components of the same aspect.

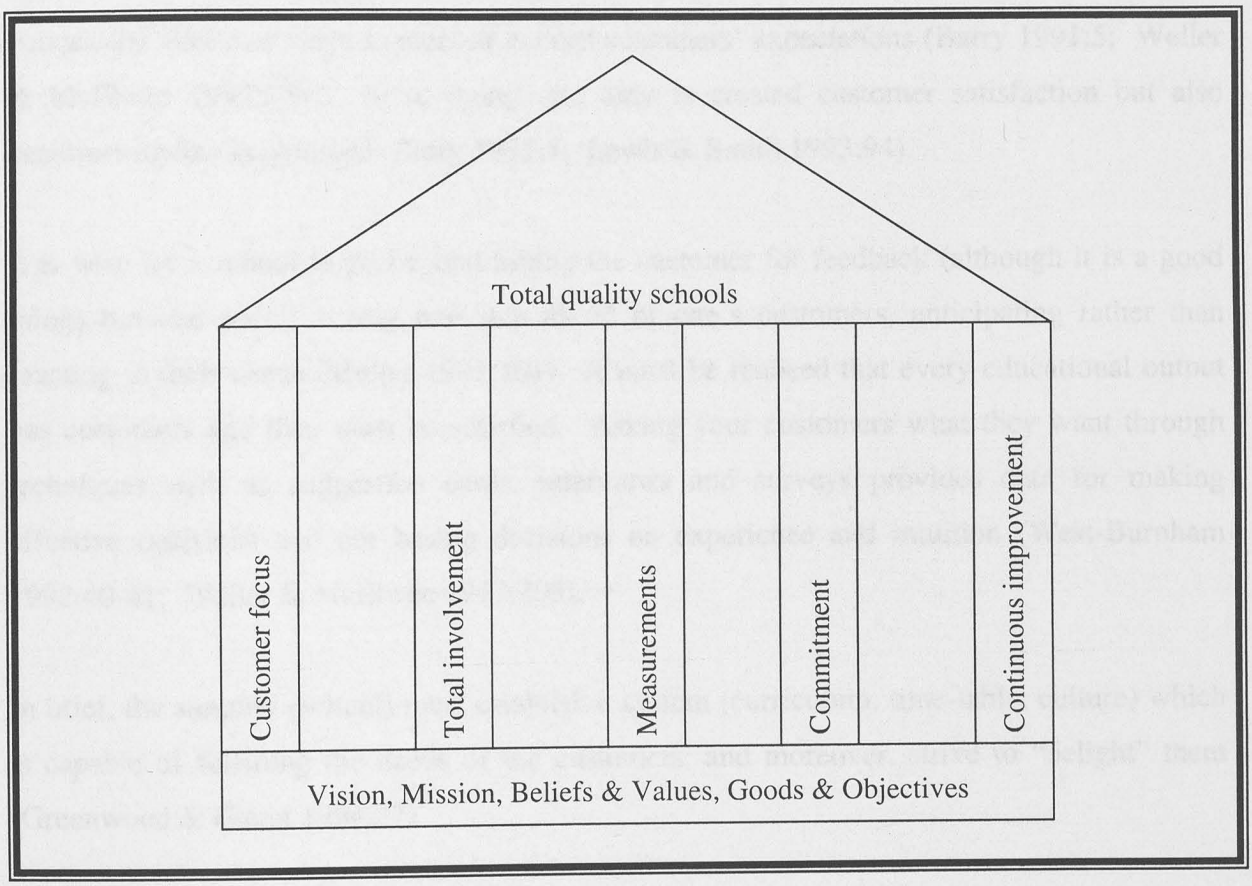

Figure 2.6: Total quality school model (Arcaro 1995:10).

Each pillar and foundation should be understood if a total quality school is to be developed.

2.8.1 Customer focus

If schools are to succeed they should strive towards satisfying their customers who are mainly parents and learners. Parents supply the school with learners and money in the hope that the school will in turn offer them the best education through teachers as suppliers of education. Since teachers also depend on one another and also on learners to succeed, they are always in communication with all stakeholders and this makes them suppliers and customers as well. What is of importance is that schools should focus on satisfying their customers.

Advocates of TQM contend that all stakeholders become so customer focussed that they continually find new ways to meet or exceed customers' expectations (Barry 1991:5; Weller & McElwee 1997:209). In so doing, not only is created customer satisfaction but also customer loyalty is obtained (Barry 1991:5; Lewis & Smith 1993:94).

It is wise for a school to go beyond asking the customer for feedback (although it is a good thing) but one needs to stay one step ahead of one's customers, anticipating rather than reacting to their needs (Muller 1993:101). It must be realised that every educational output has customers and they must be satisfied. Asking your customers what they want through techniques such as suggestion cards, interviews and surveys provides data for making effective decisions and not basing decisions on experience and intuition (West-Burnham 1992:40-41; Weller & McElwee 1997:209).

In brief, the supplier (school) must establish a system (curriculum, time-table, culture) which is capable of fulfilling the needs of the customers, and moreover, strive to "delight" them (Greenwood & Gaunt 1994:27).

Customer satisfaction will ensure continuous support from the customers and thus the continuous existence of the school. If customers are satisfied, then it means the output of the school is of a good quality. Customer satisfaction is considered to be the acid test of any institution's effectiveness.

2.8.2 Total involvement/respect for people/leadership

Total stakeholder involvement and commitment to quality is an integral part of the quality process. If the customer's needs and expectations are to be met, the involvement and commitment of everyone in the school is required (Fields 1993:13; Quong & Walker 1996:224).

Involving all stakeholders in a school entails respect for people – that you value them highly as equal partners to the success and attainment of quality. All will feel part of a common enterprise with a set of mutual obligations and incentives in which the success of any one individual contributes to the success of the whole organisation and the success of the organisation benefits the whole organisation (Williams 1993:233). Every employee in the organisation must be fully developed and involved (Lewis & Smith 1993:99).

This pillar is very important for school leaders. As quality cannot be delegated, the involvement and commitment of the top leadership cannot be over-emphasised. This view is supported by Barry (1991:8) and Arcaro (1995:32) who assert that the commitment of leadership and management is the key to quality improvement. Quality education can only occur when staff are totally committed and this commitment can only occur when they are empowered, and management is therefore crucial in seeing to it that they are empowered. Leadership must build relationships of trust from the top down, must empower all stakeholders to continuously improve and ensure that all fear is removed out of the learning climate. It should be noted that without dynamic and committed leadership, no quality initiatives will succeed.

2.8.3 Continuous improvement

Total quality management focusses on the continuous improvement of all processes and views no process as perfect (Arcaro 1995:9; Beavis 1995:4; Daugherty 1996:86; Bostingl 1996:16). One of the most difficult challenges is to convince an already successful institution to focus on quality improvement (Barry 1991:25). Achieving quality is a journey and not a destination and on the path to quality, processes must be continuously improved by altering, adding to, subtracting from and refining (Williams 1994:3).

The process of continuous improvement emphasises a cyclical process which has four steps, namely (PDSA):

Step 1: The first step entails a plan or process to study and analyse a situation (for example the way a lesson is taught or assessed) (Schmoker & Wilson 1993:18). Questions such as these need to be asked:

* What can be done to improve the situation?
* What data are available?
* How will the data be used?
* What changes are needed?

Step 2: Do it. In this step, the plan should be carried out on a small scale (Schargel 1994:48)

Step 3: Check or study the data. This involves the assessment and measurement of the effects of the change or test. It is necessary to determine whether the changes have worked well and what needs to be improved in order to do a better job.

Step 4: Act on what the small-scale programme shows. The innovation can be either instituted on a permanent basis, discarded or be referred back to Step 1 by modifying the innovation and gathering new data on its effectiveness as adjustments are made (Schmoker & Wilson 1993:18).

Fortuna (1992:144) in *Total Quality a Manager's Guide for the 1990s* by the Ernst and Young Quality Improvement Consulting Group USA, offered the PDCA cycle as follows:

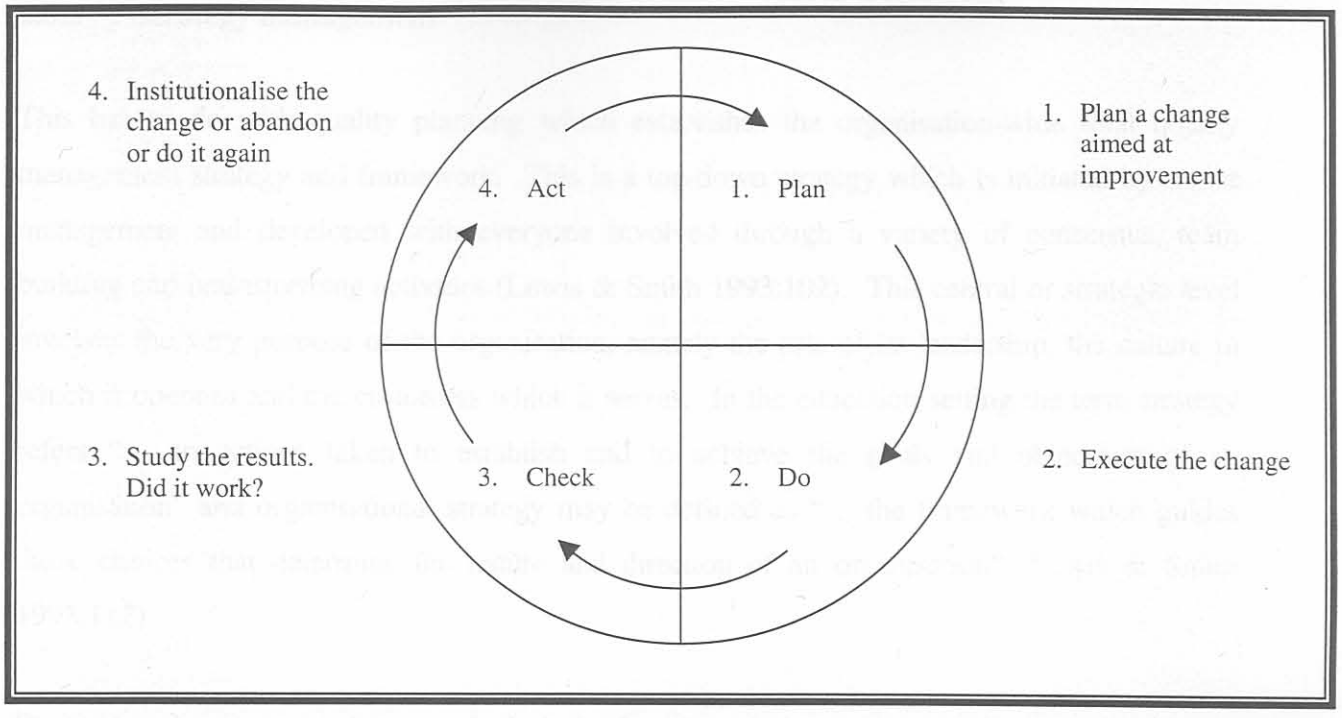

Figure 2.7: PDCA-cycle (Fortuna 1992:144)

2.8.4 Managing with facts/measurements

Total quality management differs from other educational reforms in that it uses rational measurement systems. In TQM there are a number of tools and techniques for measuring customer satisfaction (Daugherty 1996:86). Some of these tools are quantitative (that which can be counted) while others are qualitative and are used to count complex situations, for example people's perceptions.

Although these tools provide more and better information, merely using them does not ensure a high quality school (Latta & Downey 1994:3), but instead quality tools are there to help solve problems, gather information, analyse data and assist in making decisions about the process and systems. There are many tools and techniques that can be used to generate facts which will enable managers to manage with the aid of facts. This aid in avoiding situations where decisions are taken, based on experience or intuition which is unfair.

The above four pillars of total quality schools are anchored in a strong foundation of leadership, vision and mission, beliefs and values, and goals and objectives.

2.8.5 Strategy management

This has to do with quality planning which establishes the organisation-wide total quality management strategy and framework. This is a top-down strategy which is initiated by senior management and developed with everyone involved through a variety of consensus, team building and brainstorming activities (Lewis & Smith 1993:102). This central or strategic level involves the very purpose of the organisation, namely the role of its leadership, the culture in which it operates and the customers which it serves. In the education setting the term strategy refers "... to actions taken to establish and to achieve the goals and objectives of an organisation" and organisational strategy may be defined as "... the framework which guides those choices that determine the nature and direction of an organisation" (Lewis & Smith 1993:112).

Strategy management endeavours include leadership, mission, vision, goals and objectivesas well as culture (values, norms, attitudes and behaviour). In the TQM-context, strategy management will be looked at in terms of the total organisation (the entire school). These components also serve as functions which are critical in setting and maintaining a direction driven by the principles of total quality management and continuous improvement. Because of their critical importance for the total implementation of strategy management, they deserve a brief description.

2.8.5.1 Leadership

This is the first function of quality implementation. In the first instance this concept is a central principle of quality improvement. Leadership is "... a catalyst for positive change, and quality management efforts require positive change" (Lewis & Smith 1993:113).

Deming's seventh principle: *adopt and institute leadership*, stresses the importance of leadership but a review of all fourteen principles reveals that success in the total implementation of quality demands leadership. For instance, a new philosophy cannot be adopted without leadership, barriers to pride of workmanship cannot be achieved without leadership, fear cannot be eliminated without leadership, etc. (Lewis & Smith 1993:114).

It must be noted, however, that differences do exist between a manager and a leader and the following best illustrates this. For total quality management, both leadership and management are important and necessary as they complement each other.

Bennis, in Lewis and Smith (1993:114), summarised the differences between a manager and a leader as follows:

MANAGER	LEADER
* Administers	* Innovates
* Is a copy	* Is an original
* Maintains	* Develops
* Focuses on systems and structure	* Focuses on people
* Relies on control	* Inspires trust
* Has short-range view	* Has long-range perspective
* Asks how and when	* Asks what and why
* Has eye on bottom line	* Has eye on the horizon
* Imitates	* Originates
* Accepts status quo	* Challenges status quo
* Classic good soldier	* Own person
* Does things right	* Does the right thing

Table 2.2: Management vs leadership (Lewis & Smith 1993:114)

For the realisation of an effective and efficient organisation, both management and leadership are necessary. It is interesting to note that most managers have at least some leadership skills and most leaders have some management skills but it takes leadership to introduce the principles of quality and sustain the practice of quality management in an organisation.

It can be said that leadership in the school situation requires the incumbent to possess both leadership and managerial skills. However, leadership must take the upper hand as it not only encourages innovation and originality but also focusses on people and inspires trust which is conducive to total quality management.

2.8.5.2 Vision and mission

A school with no vision lacks direction and future because the vision points to a future and the mission reflects the purpose or reason of the school. The vision, mission, foundations and pillars of quality will now be discussed.

2.8.5.2.1 Creating a vision

The importance of a vision in any organisation cannot be overemphasised. The old biblical saying: "Where there is no vision, the people perish" (Proverbs 29:18) further emphasises this. The establishment of an organisational direction is the development of a "... vision or a common belief, of what the school, college or university should be like at some point in the future" (Lewis & Smith 1993:120). A vision statement "... should be a clear, positive, credible, engaging, challenging and shared image, a collective 'video' of the desired future" (Lewis & Smith 1993:120).

The creation of an organisational vision is important for three reasons. In the first instance, a number of organisational studies have reported greater success in vision-directed organisations. In schools, colleges and universities, the concept of vision and the visionary leader have taken hold in particular and in society in general.

In the second instance, accrediting bodies have begun to emphasise the need for strategic planning, with the criteria usually including the development of an institutional vision statement.

Thirdly, total quality improvement guidelines placed a major emphasis on institutional vision statement and their adoption by schools encouraged this development.

Murgatroyd (1992:190) regards powerful visions as "... those which challenge the school to shift from its current reality to some new reality". A vision "... takes you from the past and commits you to the future". According to Murgatroyd, excellent vision statements are those which pass the following tests:

- The vision statement that makes clear what the school's priorities and commitments are.

- The vision statement provides a torch and touchstone - it is a statement that can be used repeatedly to inspire, encourage and evaluate.

- It is a statement that can be used to re-focus energy when energy is being dissipated.

- It is a measure by which the school wishes to be judged.

- It excites, inspires and concentrates the minds of all associated with the school.

Murgatroyd (1992:189) regards school vision statements as of great value because "... they are used to defend ideas or to advance ideas. They are used to shape behaviour and response to concerns. Vision statements give both direction and meaning to the work of the school".

Since vision is concerned with what is to come, once it is developed, awareness and acceptance should be initiated and commitment to its reality should be fostered at all levels of the school. Its creation involves hindsight, foresight and insight and this makes it an indispensable tool of total quality management and implementation.

2.8.5.2.2 Identifying the mission

The mission of an organisation "... is the basic purpose it seeks to accomplish - the reasons why the organisation exists, and the development of a mission statement is the formal expression of the purpose for members of the college or university, its constituents and the public at large" (Lewis & Smith 1993:118).

For strategy development to be successful, it must be driven by a clear sense of organisational mission and its development. In developing a mission statement, leaders of schools, colleges or universities together with all stakeholders of the particular organisation should be involved. An organisation geared to total quality should be able to answer the following questions:

- Is there a clear statement of the mission of the school?

- Has this statement been shared with all members of the institution?

- Do members of the institution know about the mission statement? (Could they describe it if asked?)

- Is there consensus on the institutional mission?

- Is the behaviour of institutional members influenced by the mission?

A mission statement that an organisation and its stakeholders can own and identify with in order to develop related processes, projects and tasks, is a necessity. An organisation with no purpose has no reason to exist and the same applies to a school. It should be purposeful and striving towards attaining its purposes.

2.8.5.2.3 Establishing goals and objectives

This is the fifth and last function for quality implementation. The establishment of the goals and objectives of the school provides the link between the macro-level focus of mission, vision and culture and the operational activities of the organisation (Lewis & Smith 1993:127).

The provision of well-established goals and objectives has the following advantages:

- Operationalisation. Overarching goals and objectives provide a new level of specificity needed for the operationalisation of the mission and vision of the school, college or university.

- Define the desired future. They define the desired direction and future (*the should be and the could be*) and help prepare everyone for change.

- Goal-directed behaviour. Enhances organisational planning and encourages the assessment of resources needed to achieve the desired goal(s).

- Engagement and motivation. Well articulated and well-communicated goals and objectives will engage and motivate people to achieve the vision of the school, college or university and fulfil its purpose.

- Common (shared) framework:. Goals and objectives can provide a common framework or larger picture and can help unite everyone, focussing their efforts toward the institutional mission and vision (Lewis & Smith 1993:129).

As soon as the mission, vision and values have been established, they should be translated into achievable goals and these are often expressed as aims and objectives. Of importance is that they be expressed in a measurable way so that the eventual outcomes can also be evaluated against them. For these goals to be achievable, they must be realistic (Sallis 1993:111).

It must, however, be emphasised that the identification of overarching goals and objectives and the development of a plan for their implementation is not sufficient. They must be communicated and their awareness and acceptance should be initiated. For total quality management to come to fruition, it must be preceded by the establishment of goals and objectives.

2.9 The importance of teams in TQM

The importance of teams and teamwork in total quality management cannot be overemphasised. In the past the focus of human resource management has been on the recruitment, placement, compensation, development and evaluation of individuals rather than groups which led to rivalries, competition and self-centredness which counter the focus on the most important function of accomplishing the mission and service to customers.

Oakland (1989:236) contends that "... teamwork throughout any organisation is an essential component of the implementation of TQM for it builds up trust, improves communication and develops independence".

On the other hand Sallis (1993:92-93) regards teams as the essential building blocks for delivering quality in schools: "The team is a powerful means of making and proposing changes. The team should not be just an instrument for gathering data. It should use the data it gathers to improve the opportunities for its learners".

He warned, however, that "... teams, like people need nurturing and mentoring if they are to function well and give of their best. Their contribution has to be recognised and supported" (Sallis 1993:93).

In further highlighting the critical importance of teams in the success of any TQM-strategy, Murgatroyd (1992:196) views the following as reasons thereof:

- they facilitate dynamic learning;
- they provide a fulcrum in which the organisation can be viewed holistically;
- they provide a relational base for testing assumption ideas and for reviewing progress; and
- they are the mechanism by which individual learning and personal mystery can be transferred to others.

The central role of teams and teamwork is that they encourage the need "... for such team skills as co-operation, interpersonal communication, cross-training, and group decision-making" and "... the success of every organisation fully rests on the effectiveness of each work group – each team (Lewis & Smith 1993:191).

As total quality management is an approach which seeks the involvement and commitment of all in the school, this means that the different individuals should co-operate. Effective co-operation is possible if they work together as a team who want to achieve certain shared set goals. Teamwork is highly essential for total quality management to take place in a school.

For the above to be realised, the words of Crosby (1979:126) that teamwork does not just happen, become relevant: "Being part of a team is not a natural human function: it is learned. Training in teamwork and problem-solving skills often necessary. The members of a team have to learn to work together. Teams are made up of individuals with different personalities, ideas, strengths, weaknesses, levels of enthusiasm and demands from their jobs".

2.9.1 The key differences between groups and teams

The following are differences that exist between groups and teams.

GROUPS	TEAMS
1. Members think they are grouped together for administrative purposes only. Individuals work independently, sometimes at cross purposes with others.	1. Members recognise their inter-dependence and understand that both personal and team goals are best accomplished with mutual support.
2. People tend to focus on themselves because they are not sufficiently involved in planning the unit's objectives. They approach their jobs simply as hired hands.	2. Members feel a sense of ownership toward their jobs and units because they are committed to the goals they helped establish.
3. Members are told what to do rather than being asked what the best approach would be. Suggestions are not encouraged.	3. Members contribute to the success of the organisation by applying their unique talents and knowledge to team objectives.
4. Members are so cautious about what they say that real understanding is not possible. Game playing may occur and communication traps may be set to catch the unwary.	4. Members practice open and honest communication. They make an effort to understand each other's point of view.
5. Members distrust the motives of colleagues because they do not understand the roles of other members. Expressions of opinion or disagreement are considered dismissive or non-supportive.	5. Members work in a climate of trust and are encouraged to openly express ideas, opinions, disagreements, and feelings. Questions are welcomed.

GROUPS	TEAMS
6. Members find themselves in conflict situations which they do not know how to resolve. Their supervisor may put off intervention until serious damage is done.	6. Members recognise conflict as a normal aspect of human interaction, but they view such situations as an opportunity for new ideas and creativity. They work to resolve conflict quickly and constructively.
7. Members may receive good training but are limited in applying it to the job by the supervisor or other group members.	7. Members are encouraged to develop skills and apply what they learn on the job. They receive the support of the team.
8. Members may or may not participate in decisions affecting the team. Conformity often appears more important than positive results.	8. Members participate in decisions that affect the team, but understand that their leader must make a final ruling whenever the team cannot decide or an emergency exists. Positive results, not conformity, are the goal (Lewis & Smith 1993:192).

Table 2.3: Groups vs Teams (Lewis & Smith 1993:192)

2.9.2 The stages of team formation

As teamwork has to be based on mutual trust and established relationships, it has to go through several stages. The following stages of team formation can be identified and several authors are in support of these stages (Sallis 1993:93-94; West-Burnham 1992:125; Murgatroyd 1993:150):

2.9.2.1 Forming

This is the first stage of group formation. The team is still just a collection of individuals. A range of emotions associated with this stage includes excitement, optimism, idealism, pride,

anticipation, fear, suspicion and anxiety. The main discussions will centre on philosophical issues concerned with concepts and abstractions or on the organisational barriers to successful working.

2.9.2.2 Storming

If teams form, they proceed to a storming stage. In this stage members realise the scale of the task ahead and may react negatively to its challenges – others will want to lay down personal agendas and interpersonal hostilities may arise. In this stage the team leader must help members to search for common ground and this is the period when members begin to understand each other. Humour and patience are important qualities for a team leader at this stage, as are firmness and resolve.

2.9.2.3 Norming

This is where a team decides and develops its methods of working. It establishes its own rules or norms and sorts out the roles which its members should play. Once the rules are well defined and understood, the team has a good chance of functioning properly.

2.9.2.4 Performing

The team members have worked out their differences and established their ways of working and can now start the process of solving problems and improving processes. A fully mature team has been created which can work together for the common good.

2.9.3 Types of teams

For the effective implementation of total quality management, four types of teams are needed, *viz*:

2.9.3.1 The lead team or quality council

This team is responsible for the strategic management of the quality process and it functions as a steering committee in that it sets policy, establishes guidelines and handles overall logistics and

communication for the teams operating under it. Membership of the lead team differs in accordance with its position in the organisation.

At the executive level the lead team is composed of the president and vice-presidents. The activity-centred level is led by a vice-president, director, or manager who provides leadership for a specific activity, for example admissions, registration, etc.

The location-centred level is led by the chief officer and staff of a campus or centre. It gives the same kind of leadership at the local level that the executive level lead team provides overall. The other teams operate under the lead team and are found throughout the school, college or university.

2.9.3.2 The functional team

This is a work-group from a single work or functional area and membership of this team is voluntary but the team is continuous. Its ideal size is six to eight persons.

2.9.3.3 The cross-functional team

It includes people from more than one work area and is responsible for projects that cut across functional lines and like the functional team, membership is voluntary and the team is ongoing.

2.9.3.4 The task team

It also includes people from one or more functional areas and it is formed to solve a specific problem or group of problems and is thereafter disbanded. Members of this team are selected on the basis of background; experience and membership and tasks are assigned by management (lead team) (Lewis & Smith 1993:193-194).

2.9.4 Team development

Team development is a process which is beneficial for all four types of teams mentioned above, but it is most effective for the three continuous teams (lead, functional and cross functional) because this process involves a long-term commitment.

Creating powerful and effective teams involves a process of four facilitative steps:

2.9.4.1 First step: Create a vision statement

This statement describes what the team will be like five to ten years into the future. This statement should be clear, inspiring and 'owned' by everyone in the team and should be consistent with the vision and mission of the organisation.

Building vision and mission statements and determining the school's core values is the next step in the transformation process. Vision comes from agreed upon core values, desired patterns of behaviours, and commonly held attitudes and aspirations. Vision is a futuristic statement which clearly projects the organisation's direction for at least 3 – 5 years. A school's vision embodies beliefs about schooling and its purpose for the future (Weller 1998:8).

2.9.4.2 Second step: Define the purpose

The need and importance or advantages of having teams in schools, colleges and universities should be spelled out.

2.9.4.3 Third step: Define the principles and values

These will help in guiding the actions of the team members, ensuring that they relate to the principles and values of the school, college or university. It should answer the question: What are the principles and values we consider most important in working toward our vision?

2.9.4.4 Fourth step: Develop a unit mission

This will serve as a guideline for decision-making by everyone on the team. It should answer the question: "How will we move toward our vision?" The mission should be consistent with the mission of the school, college or university and identify areas for which the team has responsibility (Lewis & Smith 1993:194; West-Burnham 1992:132).

Mission statements also come from agreed upon core values, desired patterns of behaviour and commonly held attitudes and aspirations. A mission statement provides a specific image of the future, is broad in scope and allows for dreaming, but paints a realistic, attainable future (Weller 1998:8).

Although there is no single recipe for successful or effective teams, Sallis (1993:95-96) identified the following salient points as of importance in this regard:

- A team needs the roles of its members to be clearly defined. It should be clear who is the leader (the person who provides the mission and the drive to the team) and the facilitator (assists the team to make the best use of problem solving and decision-making tools).

- Teams need clear purposes and goals – they need to know where they are going and to have clear goals to achieve (West-Burnham 1992:132).

- A team needs the basic resources to operate – people, time, space and energy.

- A team needs to know its accountability and the limits of its authority. Before a team embarks on its work, a clear brief of the purpose of the team is highly necessary.

In concluding this aspect it is important to note that the formation of teams is a recipe for success in all organisations. This will lead to continuous improvement in their performance, thereby ensuring total quality management in organisations. Without teamwork no work of quality can be achieved. Effective teamwork, where every team member contributes fully to the activities and performance of the team, will need to be trained in various skills to empower them to execute their various tasks effectively.

Figure 2.8 reflects the map of effective team functioning. The centre of success is their explicit shared values. The diagram is about effective team work. Team members are bound by explicit and shared values and this makes them co-operate effectively in order to accomplish their task effectively.

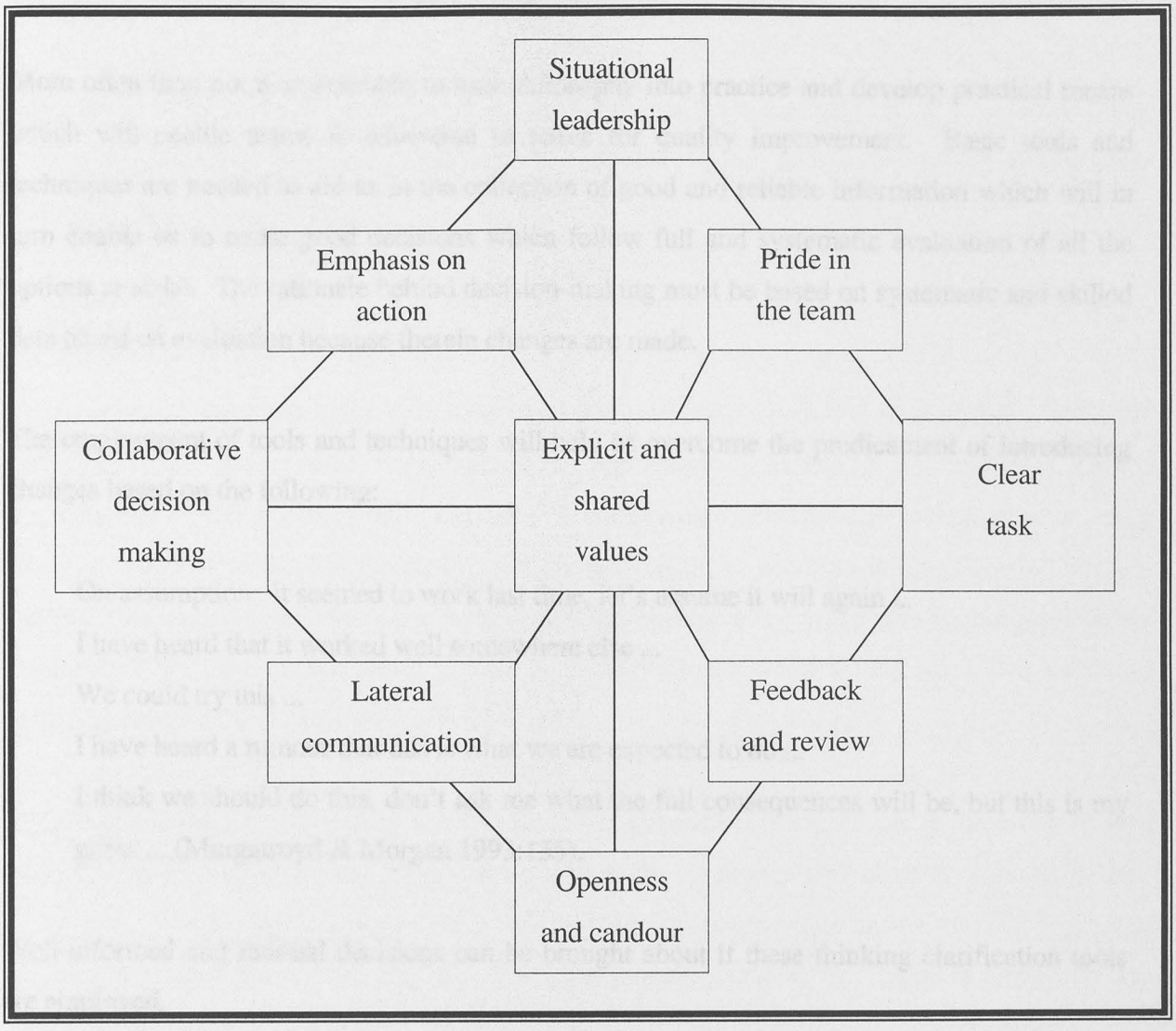

Figure 2.8: Components of effective team work (West-Burnham 1992:121)

2.10 Daily management tools and techniques for effective total quality management

It is through measuring outputs that we can ensure quality. There is thus a growing interest in performance indicators in education and this stems from the assumption that quality is revealed by these indicators.

It should be understood that although the outcomes of schooling are a part of what TQM is concerned with, it is not an end in itself but a means towards an end. This is obviously so because "TQM is a comprehensive approach to the management of well being and effectiveness

in organisations, so that the organisation can achieve sustainable steep-slope quality improvement" (Murgatroyd & Morgan 1993:155).

More often than not it is desirable to turn philosophy into practice and develop practical means which will enable teams in education to strive for quality improvement. Basic tools and techniques are needed to aid us in the collection of good and reliable information which will in turn enable us to make good decisions which follow full and systematic evaluation of all the options at stake. The rationale behind decision-making must be based on systematic and skilled data based on evaluation because therein changes are made.

The employment of tools and techniques will help us overcome the predicament of introducing changes based on the following:

- On assumption: it seemed to work last time, let's assume it will again ...
- I have heard that it worked well somewhere else ...
- We could try this ...
- I have heard a rumour that this is what we are expected to do ...
- I think we should do this, don't ask me what the full consequences will be, but this is my guess ... (Murgatroyd & Morgan 1993:155).

Well-informed and rational decisions can be brought about if these thinking clarification tools are employed.

Care should, however, be taken that the right tool to improve the particular process should be found. Bonstingl (1992:51) quotes Sashkin and Kiser who have issued the following warning: "The tools are not TQM … not sufficient for TQM … When made the focus of TQM, tools and techniques can even prevent the organisation from taking the additional steps needed for TQM."

2.10.1 Total quality management tools and techniques

Tools and techniques are the means of identifying and creatively solving problems. However an overemphasis on their utilisation can bring more harm than good to total quality management. To this end, Bonstingl (1992:51) quotes Sashkin and Kiser who issued the following stern warning: "The tools are not TQM ... not sufficient for TQM ... When made the focus of TQM,

tools and techniques can even prevent the organisation from taking the additional steps needed for TQM".

Hereunder follows the TQM-tools and techniques that are most useful and applicable in the school situation and if properly employed will help educators and school teams in their journey of never-ending improvement.

2.10.1.1 Benchmarking

This is one of the most used techniques in TQM-organisations and West-Burnham (1992:54) regards it as "... essentially an exercise in comparative analysis". For example, in the commercial world, benchmarking examines a competitor's product to establish in what ways they are better or worse, test the quality and examine customer satisfaction. In education it is one of the main reasons why in-service courses and conferences and reading educational journals are important. In other words, benchmarking is about finding good ideas and ways to improve on existing practice (West-Burnham 1992:54-55).

Sallis (1993:105) views benchmarking as a "... standard against which to measure present performance". He further reiterates that "... teachers can simply visit other institutions in their area and see how things are done. They can discover best practice and ensure that theirs matches it, and then seek to improve on it". This saves re-invention as "... there is almost always someone somewhere who has solved your problem" (Sallis 1993:106).

Benchmarking indicates service commitment or guarantees and establishes ways of ensuring that these systematic ways of service performance level is maintained and constantly improved. Schools are also called upon to engage in these processes as well.

2.10.1.2 Brainstorming

This technique is familiar to most teachers as they employ it in their classroom activities. This technique is used to stimulate a group to generate as many ideas as possible in a short time, thereby promoting group involvement and participation.

It "... taps into the creativity of a team and allows them to generate ideas and issues quickly. A successful brainstorm allows staff to be inventive and free from restriction" (Sallis 1993:100).

Murgatroyd and Morgan (1993:168) see the importance of brainstorming in its ability to:

- get at the basic ideas of solving a problem that the school faces;
- map the key elements of a customer's expectations for a process;
- looking creatively at a new process or a new idea; and
- beginning to work on the task of achieving outrageous goals.

Brainstorming works best in small groups of 5 to 10 and each session should last ten to twenty minutes. The following procedure for brainstorming can be followed:

When faced with a problem, teachers can come up with different ideas as to how it can be solved. Everybody is encouraged to come up with ideas without any discussion. The following steps will best illustrate how it is to be done:

Step 1: Getting to understand

Be clear what the brainstorming is about

- The problem or issue being reviewed is written on a flipchart or blackboard.
- Choose one person/facilitator to facilitate the process Murgatroyd and Morgan (1993:168) insist that he should be neutral to the issue or problem.
- The facilitator encourages everyone involved to suggest ideas or solutions or aspects of the problems by shouting out their suggestions.
- Record all these on the board/flipchart as succinctly as possible.

At this stage, it should be noted however, that the following rules are observed:

- no criticisms or judgement
- no evaluation
- no discussion
- no problem solving

- anything goes! All ideas are valid.
- everybody is asked for one more idea (West-Burnham 1992:56).

Step 2:

- The facilitator takes each suggestion in turn and checks/reviews with all members of the team to ensure understanding and accuracy of recording. During this process of review, any duplicate items are removed with the agreement of the members concerned.

Step 3:

- Spend five to six minutes removing clearly outrageous or unworkable proposals, suggestions that are irrelevant to the problem in hand or ideas that are inappropriate for this group to work with.
- Give each person four to six 'stick-on' dots (available from stationers) and ask them to place their dots against the ideas/suggestions that they think should provide the focus for subsequent discussion.
- Count the dots to establish which issues have the most support for exploration in the team (Murgatroyd & Morgan 1993:168).

Step 4:

- The outcomes that remain, meet all the criteria and are potential solutions which may require further discussion in order to produce a rank-order.
- Call a second or subsequent meeting to explore the issues identified.

Brainstorming also helps in familiarising all stakeholders with the problems the school is facing and it is again in line with what TQM advocates, namely that involvement and commitment of everyone in the organisation is essential.

2.10.1.3 Cause and effect diagram/Fishbone or Ishikawa diagram

This technique is known by several names. The cause and effect diagram is also known as the Ishikawa diagram (named after the Japanese, Kaoru Ishikawa who invented it) and the fishbone diagram because it resembles the skeleton of a fish with the problem statement represented by the head of the fish (Murgatroyd & Morgan 1993:169). This technique is mostly used in quality circles and is one of the most powerful diagnostic and team development activities. Although it

resembles brainstorming in some respects, it is more structured and focussed. It can be used to identify the causes of a problem by structuring and displaying them in relation to each other, analysing a process by reviewing factors which may be problematic. Furthermore, its application can help in:

- identifying all the causes of a problem;
- distinguish causes from symptoms;
- analyse the relative significance of related causes; and
- provide data for use with other techniques (West-Burnham 1992:57-58).

Sallis (1993:107) regards the Ishikawa diagram as a "... visual list drawn up in a structured fashion. It illustrates the various causes affecting a process by sorting out and relating the causes to each other. For every effect there will be a number of causes and it is usual to group these in a number of major categories".

This tool is used and is more effective, when:

- the school is seeking to diagnose a particular problem with more than one cause;
- the school wishes to change processes and needs to understand these processes better before doing so; and
- when a team within the school is seeking to understand the links between its work and that of others (Murgatroyd & Morgan 1993:169).

To complete a basic cause-effect diagram, some steps are necessary:

Step 1:

- Display the diagram on a flipchart or blackboard and state the problem briefly at the 'head' of the fish
- Identify the four basic parameters of the cause of the problem that need to be examined by the team. The most common causes of problems in the use of this tool in schools are; policies, procedures, people and equipment (Murgatroyd & Morgan 1993:168).

Step 2:

- Using brainstorming techniques, generate the causes of the problem, placing each on the appropriate rib.

Step 3:

- The facilitator checks understanding with each member of the group.

Step 4:

- The diagram is analysed for duplication, ambiguities and inappropriate categorisation. Corrections are then made.

Step 5:

- Team members are asked to identify those factors which they perceived to be least significant. Those that receive the most 'votes' are deleted.

Step 6:

- Team members select the most significant factors and prioritise them. Votes are again collected and the outcome recorded on the diagram. The process has thus identified possible causes, categorised them, reviewed their relative significance and produced a prioritised list of causes.

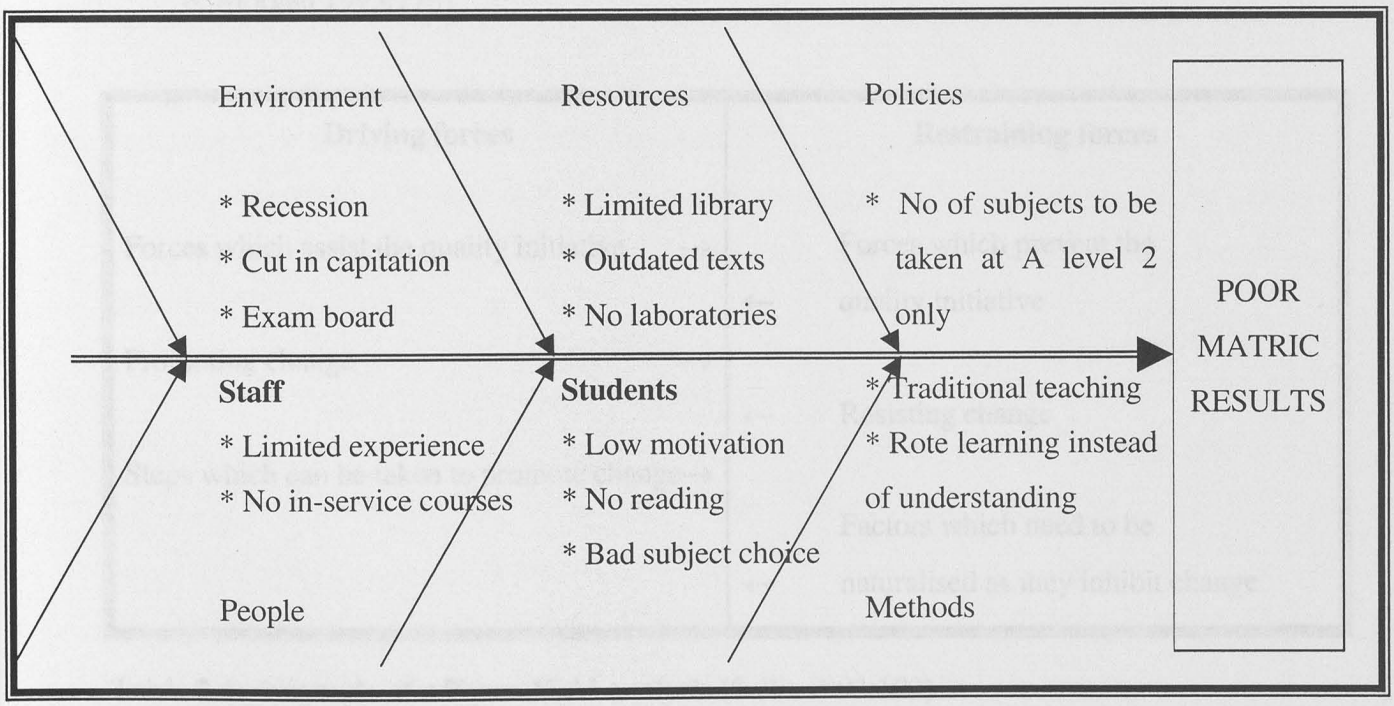

Figure 2.9: Cause-effect diagram (West-Burnham 1992:57)

2.10.1.4 Force field analysis

When a change is proposed or when a process is in trouble, it is often proper to look systematically at the forces driving the change or supporting the process and those opposing the change or restraining the process.

This process involves the following three steps:

Step 1:

- Define the current problem (possible with cause-effect diagram or any other tool).

Step 2:

- Identify the drivers and restrainers for this problem and record them in the form of a balance sheet with the driving forces on the left and restraining forces on the right. Brainstorming can be used as a basis for performing this task..

Step 3:

- Have team members evaluate, agree, prioritise and record the most important tensions in the balance sheet so that these can become the focus for planning and action (Murgatroyd & Morgan 1993:176).

Driving forces			Restraining forces
Forces which assist the quality initiative	→		Forces which prevent the
		←	quality initiative
Promoting change	→		
		←	Resisting change
Steps which can be taken to promote change	→		
			Factors which need to be
		←	naturalised as they inhibit change

Table 2.4: Example of a Force-Field analysis (Sallis 1993:103)

2.10.1.5 Pareto charts

Pareto charts are named after their founder, an eighteenth century mathematician and economist Wilfred Pareto who suggested that 80% of a problem is due to 20% of its total set of causes. For this reason it is sometimes known as the 80/20 Rule or the Pareto Rule (Sallis 1993:105).

These charts direct attention to the most pressing problems facing a team or an institution. The following steps can be followed:

Step 1:
Identifying the problems to be compared by brainstorming or cause-and-effect analysis. An appropriate unit of measurement should be identified and a time period for the collection of data specified.

Step 2:
Gather results and display them using a histogram and re-order the histogram so that it displays declining frequency from left to right.

Step 3:
Label the right-hand vertical axis to show the cumulative percentage of the total distribution (West-Burnham 1992:63-64).

For example, if say 200 teachers from one school system are asked to indicate on a card the single most important problem they had with staff meetings, on counting the cards the results were as in Figure 2.10 below. This helps the school or a system on what to focus on to make a difference to the problem at hand.

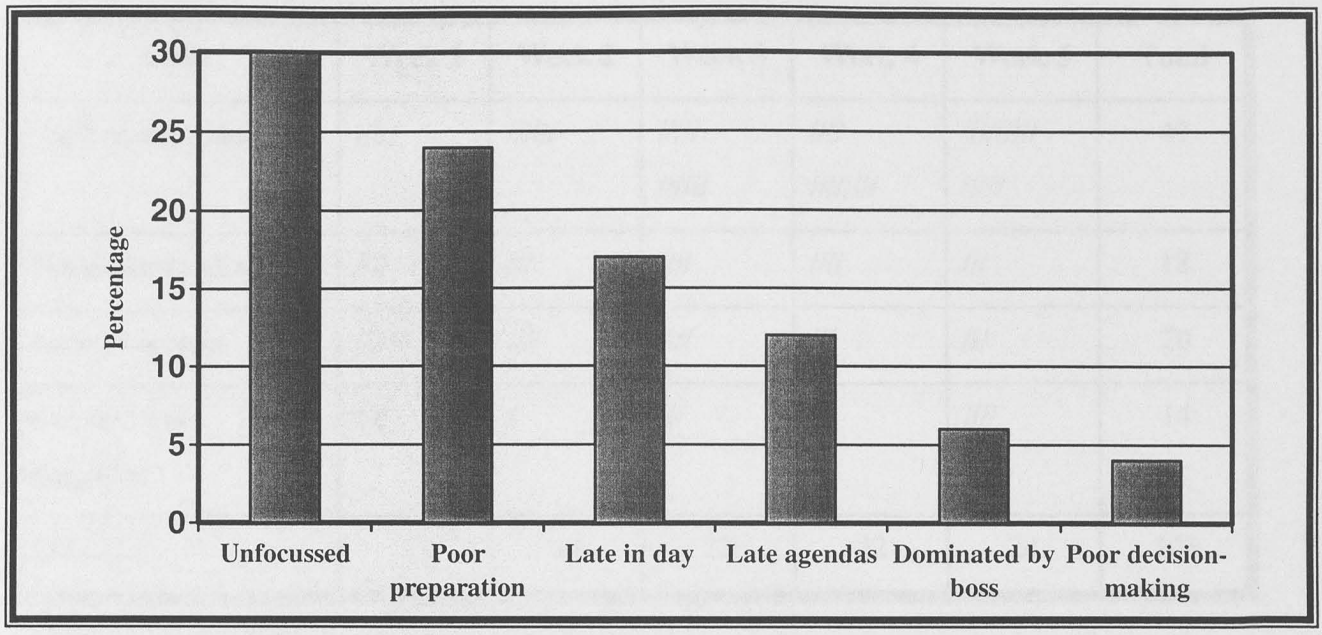

Figure 2.10: School staff meetings in our system – Why they are not as useful as they could be (Murgatroyd & Morgan 1993:180)

2.10.1.6 Check sheets

These are simple recording devices for events. Each time an event occurs, a checkmark is made on an appropriate recording sheet and at the end of an agreed time period, a count is made to see how many times the event has occurred.

As an example, a school may decide to keep a record of parental complaints for five weeks. In doing this, the school should firstly look at four areas of complaint:

- lack of information;
- concern about a decision;
- not understanding information provided; and
- lack of personal contact.

The incidents of parental concerns are recorded against this list each time they occur as shown in Table 2.4 below (Murgatroyd & Morgan 1993:172).

Table 2.5 reflects how check sheets are used to enhance total quality management in schools.

Issue	Week 1	Week 2	Week 3	Week 4	Week 5	Total
Lack of information	/////	//////	///// //////	//// ////////	///////// /////	49
Not understanding	////	///	////	////	///	18
Lack of contact	//////	////	////	///	///	20
Concern over decisions	////	/	///	//	////	14
TOTALS	19	14	22	22	24	101

Table 2.5: Check sheet – Parental complaints (Murgatroyd and Morgan 1993:172)

2.10.1.7 Five 'hows' and five 'whys'

These are similar tools with a different focus. The aim with both is to explore a problem or solution until it is expressed in the simplest, most basic terms. A skilful facilitator is needed who will then examine 'how?'/'why'? and each proposal is then subjected to further questioning until the root cause is felt to have been reached (West-Burnham 1992:59).

The extension of the working life of textbooks may be used as an example: We need to extend the working life of textbooks.

- How?
  By encouraging children to take better care of them.

- How?
  By making them personally responsible for them.

- How?
  By introducing a better monitoring scheme.

- How?

  By designating someone as being responsible.

- How?

  By the HOD reviewing job descriptions and negotiating the new responsibility (West-Burnham 1992:59-60).

The following is an example from a 'five whys' exercise completed by a team looking at 'why parents did not attend the annual parents meetings held to discuss the progress of students:

Problem: A large number of parents do not attend parents meetings (approximately 60% do not do so).

- Why?

  They have traditionally not done so.

- Why?

  They do not see a relationship between their attendance and changes in the performance of their son or daughter.

- Why?

  Because we use the evening more as a report-on-progress session than as a contracting-for-change session.

- Why?

  Because we have not trained our staff to develop change and performance contracts with parents and students.

- Why?

  Because systematically improving performance of a student with the full involvement of parents is not a priority in this school at this time (Murgatroyd & Morgan 1993:176).

By using the five 'hows' and five 'whys', the team gets a better understanding of the problems at hand.

2.10.1.8 Histograms

These are bar graphs that are used to display the frequency of distribution of continuous data. Most effective histograms show the average (as means, mode or media) over a period of time for some behaviour or activity. They can be used in a variety of ways in a school and are most useful as indicators of how the team is performing against some kind of benchmark (Murgatroyd & Morgan 1993:176).

An example of a zero-discipline target set by a certain school is as follows:

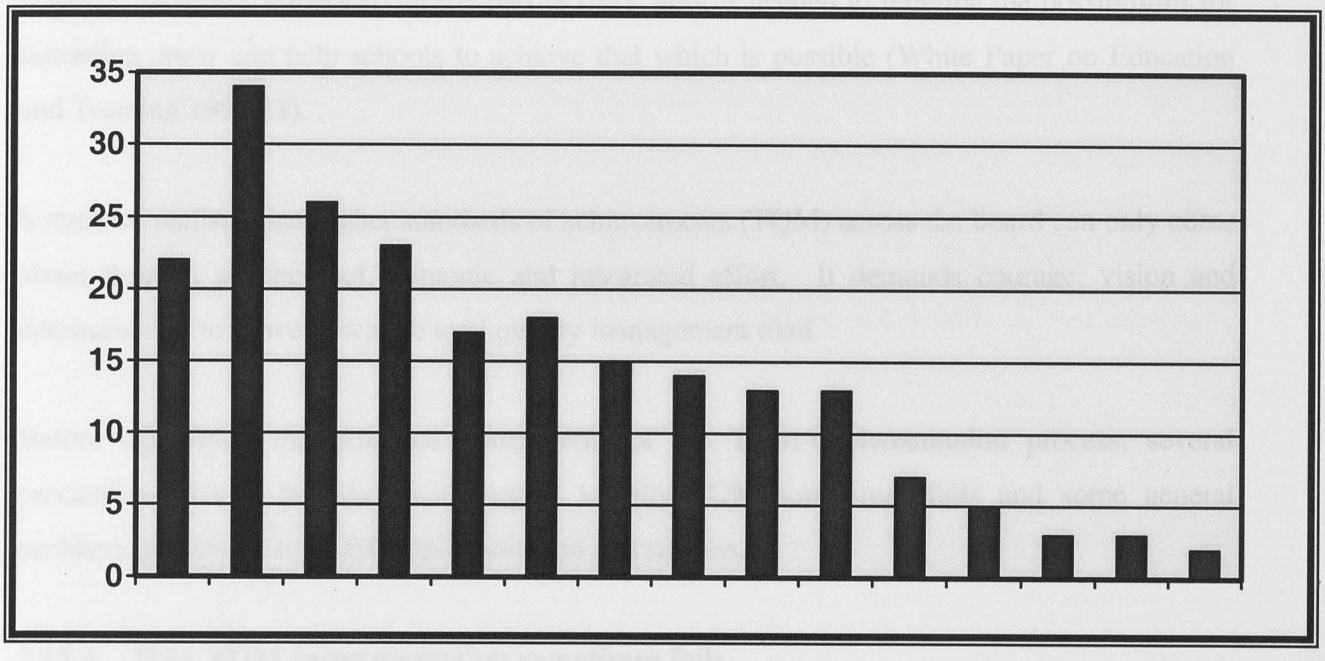

Figure 2.11: Histogram – Achieving zero discipline problems (Murgatroyd & Morgan 1993:178)

The field of tools and techniques is a very large one and not all can be applicable to the school situation. However, not all tools that are applicable to the school situation have been mentioned but those mentioned above, if employed effectively, will help the team in developing competencies that will in turn improve the quality of the team's thinking and decision-making. The extensive use of a variety of tools as shown above, will help a great deal in the gathering and analysis of data and the making of decisions which will be based on facts, not hearsay, experience or intuition.

2.11 Guidelines for the implementation of total quality management in schools

Total quality management in education cannot just happen. It must be caused to happen. The environment which will be conducive to its implementation must be created, nurtured, maintained and protected by all involved. In the South African education system TQM is an approach whose time has come because of the dramatic and significant changes now unfolding both politically and educationally. Institutions and schools must now achieve higher standards of performance for their customers – students – and must furthermore add more value for its stakeholders – the parents and the communities at large. The call for their total involvement in the education of their children, belated as it seems, can no longer be stalled. For this ideal to be realised, visionary leadership on the part of the school is needed to redefine the possibilities for schooling anew and help schools to achieve that which is possible (White Paper on Education and Training 1995:21).

It must be realised that higher standards of achievements (TQM) across the board can only come about through a concerted, dynamic and integrated effort. It demands courage, vision and determination to move down the total quality management road.

Before examining the principal components of the TQM-implementation process, several precautions should be taken with regard to why TQM sometimes fails and some general problems pertaining to TQM-implementation and success.

2.11.1 Why TQM-implementation sometimes fails

More organisations have failed to implement TQM than have successfully implemented it and hence the call for many organisations to first understand and then implement TQM. A lack of commitment to TQM and a failure to appreciate the totality of the impact of TQM on an organisation have led many organisations to fail. Paying only lip service to TQM is not enough and piecemeal involvement is also a non-starter in TQM.

In the second instance, TQM fails because it is often positioned as just another programme which is being enforced from the top. Regarding TQM as an imposition from the top will not only render it unacceptable but will also prevent it from taking off. TQM must be owned, lived, embraced and appreciated by all to enable it to take off.

2.11.2 Guidelines for effective development of TQM

The following are some of the guidelines for the effective development of TQM in all organisations. These guidelines are applicable to any organisation pursuing the total quality management philosophy.

2.11.2.1 Guideline 1: Management commitment

It is an absolute necessity that for TQM to get off the ground the top manager in the organisation must have a complete pre-occupation with quality. In other words, all the persons who hold positions of responsibility in any organisation and to whom "... others look to for guidance and leadership should all buy into the TQM-strategy and act accordingly" (Murgatroyd & Morgan 1993:196). This commitment must be demonstrated in their day-to-day life by not just being merely observers but by being active players and propagators on the quality advancement team.

Tunks (1992:226-227) identifies the following as some of the observable characteristics and actions that identify with truly committed management:

- Use of quality language: How they talk about quality and their performance on a daily basis evinces their commitment. Their positive stand and desire to succeed will also inspire other members.

- Action at meetings: The way they handle quality advancement in management meetings also demonstrate their commitment. TQM is placed high on the agenda and adequate time is given to the examination, discussion and planning of specific actions to advance quality in the organisation.

- Willingness to attend meetings: Their willingness to get out of their office and attend quality meetings with all levels of employees also demonstrates commitment. Visiting with employees on the job and talking with them as well as attending management forum meetings where employees give presentations on quality progress, including participation in the celebration of success with employees to recognise and reinforce the accomplishment, are all signs of total commitment to the advancement of TQM.

- Allows participatory decision-making: Involving more individuals in decision-making at all levels of the organisation is a recipe for success in the advancement of TQM. Autocracy and dictatorship are a clear sign of lack of understanding the value and importance of participatory decision-making in TQM.

- Willingly share information: This is an important tenet of TQM. Successful total quality managers encourage and demonstrate open communication. This will ensure that the lines of communications between departments and between individuals are opened and broadened. Furthermore, employees at all levels are encouraged to ask questions of one another, share information as well as co-operate in reaching solutions and in allocating resources.

- Patience: Embarking on a TQM-track may raise the organisation's expectations and rightly so. TQM being a long-term process as it is, may fail to yield results until after six or even more months. More time is therefore needed for the realisation and advancement of quality and for this reason patience is required.

- Allocation of resources and training: Like any undertaking, successful TQM-implementation demands that managers, supervisors and employees at all levels be provided with the necessary training and for this to be realised, the necessary resources required to advance quality must be provided.

The drive of senior management initiatives is a *condicio sine qua non* for the successful implementation of TQM. Still on this note Sallis (1993:126) also contends that: "Unless the chief school officer leads the way, the concept is doomed to failure. Middle level managers alone cannot ensure success. The school head must demonstrate strong and sustained commitment and lead the way while encouraging principals, vice-principals and other supervisors to take the effort seriously".

The issue at stake here is that the members of the top team in any organisation, understand what it is they are getting into, recognise the work it will create and commit themselves to achieving their vision through TQM. For them to succeed, the following three stages should be their stepping stones (Sallis 1993:126).

Stage 1: Induction and training a school's senior staff in TQM

The top team members need to understand all of the key ideas with regard to TQM. This should entail reading, discussion and site visits to schools, hospitals, businesses and other organisations that have adopted TQM. They should understand the leadership roles they will be expected to play. For all these, induction and training will be indispensable tools.

Stage 2: Apply TQM to the school

After subjecting the top team to the key ideas of TQM and having seen them in action in some location, they then need to put this into practice. Each group will have to customise and refine TQM for their particular organisation. In applying TQM to their school, the team will have to brainstorm until they reach a consensus as to whether to proceed with TQM or review their former strategies. After passing this stage they will then reach the last stage.

Stage 3: Commitment

After clearing all doubts, misunderstandings and misconceptions, the team then commits itself to the cause of total quality management (Murgatroyd & Morgan 1993:196-197).

From the above it is clear that TQM will only work if management has an explicit single-minded and unwavering commitment to quality. Open-minded discussions should be the order of the day for reservation and compromise may render the whole exercise futile.

The single most important determinant of the success of any TQM-implementation strategy is the behaviour of senior managers. For implementation to succeed, senior managers should guard against actions which are incompatible with the quality approach and language which implies scepticism or cynicism as this will diminish any hope of successful implementation and create chaos.

2.11.2.2 Guideline 2: Planning the programme

For any venture to succeed, prior planning is necessary. The implementation of TQM is no exception. All the stakeholders must know how the implementation will be initiated and the

TQM-strategy or plan should therefore be integrated into the particular institution's development plan. The plan will pave the way for the path that the TQM-implementation would follow and this plan will also serve as a reminder of what should be achieved and how the achievement will come about.

In initiating this development plan, several elements need mentioning:

- Mission statement and objective: A mission statement provides direction without being specific as to how success will be measured. Even criteria for measuring the success is not provided. The following are examples: "improve the culture of learning", "quality learning for all". It is "an intent that is measurable on a nominal or ordinal scale" (Kaufman & Zahn 1993:73).

- On the other hand, mission objectives include specific criteria to a mission statement. "It is a clear and unmistakable declaration of where we are going and how we can tell when we've arrived" (Kaufman & Zahn 1993:73).

As they form the basis of personal target setting, all objectives "... should have clear, unmistakable and precise criteria for both guiding us to get to that destination as well as providing criteria for an evaluation level of accomplishment" (Kaufman & Zahn 1993:74).

Planning the programme is of the utmost importance because it enables you to know beforehand what you intend to achieve and how you will go about achieving it.

2.11.2.3 Guideline 3: Training

Training must start at the top and initial training must be given to the top boss and all those comprising the top management (president, vice-presidents, executive directors, deputy directors, managers, assistant managers, division managers, etc).

Reilly (1994:89) views the PDCA (Plan, Do, Check, Act) cycle of importance to the top management, middle management and also for all participants in the programme. In order to advance quality in any organisation, training is a must. Successful TQM-top teams "... demonstrate their commitment to the quality process by making sure managers, supervisors and employees at all levels have the training and resources they need to advance quality. This

does not mean just awareness and skill training in the early stages of TQM development, but ongoing training that enables them to continuously improve quality within the organisation" (Tunks 1992:227).

Training involves change and this bodes well for the success of TQM-implementation. Training should form an integral part of managing quality and in training all involved with its implementation should take cognisance of the following principles:

- Training and development should be specific to the school and not "off the shelf", the language of training should grow out of the school's mission.

- Trainers, consultants and training materials should work to the specific needs of the school; customer needs must be stated.

- Training should not be restricted to attending courses or 'training days', all meetings and activities should be examined for their training potential.

- Training activities should be designed to include feedback-coaching as an essential component to ensure that there is genuine change (West-Burnham 1992:142).

Training will enable the staff to have knowledge of the key tools such as teamwork, evaluation methods, problem solving and decision-making techniques. Sallis (1993:128) regards training as "... one of the most important motivators in an organisation's armoury". It will also be necessary and helpful to "... visit other organisations, whether educational or business, which are developing total quality initiatives" (Sallis 1993:128).

Murgatroyd and Morgan (1993:200) echo this when they agree that "... one or more days should be set aside for teams to visit other locations – other TQM schools, colleges, businesses, hospitals and other organisations – to try and learn just what issues they are tackling from a TQM perspective, what skills they find make the difference to continuous improvement work, and how the teamwork in these organisations adds value to their work".

Training at all levels of total quality management implementation will not only ensure success, but will also empower visions and shared values.

2.11.2.4 Guideline 4: Choose good quality techniques

Tools and techniques are important because they help in how to do it order to obtain the required results. Once we know what we want to achieve and how, then the most appropriate tools and techniques for the situation are chosen and employed.

Kaufman and Zehn (1993:85) indicate that tools and techniques may be sensibly selected after knowing the needs to be reduced or eliminated and the objectives for what has to be delivered in the system.

Correct tools to tackle the things that the organisation wishes to improve should be selected. As there are a number of tools, only those relevant to the specific situation at hand should be selected. As all staff members will have undergone training for the uses thereof, their utilisation will therefore go a long way in facilitating total quality management implementation.

2.11.2.5 Guideline 5: Positive launch

Top management commitment will enable them to do thorough planning before implementation. Once the necessary planning will have been done, the need for training personnel will follow, and once personnel is trained in dealing with all the issues of implementation including the use of tools and techniques, total quality management implementation should also take off.

Total quality management should be launched as a naturally occurring strategy in response to educational changes and it should not be regarded as another management strategy from the west or the USA. The launching should inspire and engage all staff members and stakeholders by its honesty and not by making unrealistic and unachievable promises.

2.11.2.6 Guideline 6: Monitor the process not the product

Once the TQM-process is underway, it must be monitored and consistency in basing decisions on data must not only be maintained, but this data must also be used for improving the process and identifying opportunities for actions that will help in further improving the process. Blaming will only help in stalling the process and must never feature in total quality management.

2.11.2.7 Guideline 7: Install and institutionalise

Once the decision to take the TQM-route has been taken, this should be made part of the corporate culture. Everyone in the organisation "must live quality and all be on one quality team (to achieve the ideal vision), have a passion for quality (again, getting continuously closer to the ideal vision), and make data-based decisions" (Kaufman & Zahn 1993:86).

Quality must be viewed as the way we do business around here. It must be emphasised, however, that this will require patience as this is a process. With application it will be clear as to which parts proceed smoothly and which parts still need some attention. In other words, once TQM has been installed, it must form part of the institution's corporate culture.

2.11.2.8 Guideline 8: Refocus and re-invigorate/review/evaluate

After a period of time has elapsed, the whole staff of the organisation/institution needs to evaluate the progress made thus far. This will entail reviewing what the TQM-investments and efforts have brought about and what needs to be done to sustain the work and to maintain further alignment and commitment (Murgatroyd & Morgan 1993:200).

This issue of systematic evaluation of development should not only be confined to top team members but this should be done as a self-evaluation by all teams in the organisation in different stages of development, co-ordinated by the top team and key implementers.

Sallis (1993:131) argues that in order to ensure that the TQM-programme is not derailed, "… regular review and evaluation needs to be an integral part of the programme". The steering group should undertake its regular 3, 4, 5 or 6 monthly reviews and the senior management team should consider their reports and also carry out its own monitoring, and until the successes and failures of the existing initiatives are fully understood, no new initiatives should be undertaken.

Reviews or evaluations serve to establish *inter alia*:

- current levels of satisfaction;
- the extent to which needs are being met;
- how the school (institution) compares with other schools;

- identification of areas of waste; and
- suggestions for improvement (West-Burnham 1992:139).

As TQM is geared to customer satisfaction, reviews are aimed at listening to customers at the very onset and measuring their changing levels of satisfaction.

The above guidelines can help in successfully implementing TQM in any organisation. Problems and pitfalls in the implementation of TQM are many but if close attention is paid to the above guidelines, effective implementation can be obtained. The road to TQM is a tough one as it is strewn with failure and success, but the key to success is "… commitment, communication and the development of a culture which is dedicated to making vision a reality through actively pursuing a focussed strategy dedicated to meeting and exceeding customer needs" (Murgatroyd & Morgan 1993:201).

The effective implementation of TQM will help in creating quality institutions. There are a number of characteristics which differentiate quality institutions from ordinary ones.

Edward Sallis (1993:82) identifies the following differences between a quality institution and an ordinary institution.

QUALITY INSTITUTION	ORDINARY INSTITUTION
* Customer focussed	* Focussed on internal needs
* Focus on preventing problems	* Focussed on detecting problems
* Invests in people	* Is not systematic in its approach to staff development
* Has a strategy for quality	* Lacks a strategic quality vision
* Treats complaints as an opportunity to learn	* Treats complaints as a nuisance
* Has defined the quality characteristics for all areas of the organisation	* Is vague about quality standards
* Has a quality policy and plan	* Has no quality plan

QUALITY INSTITUTION	ORDINARY INSTITUTION
* Senior management is leading quality	* The management role is seen as one of control
* The improvement process involves everybody	* Only the management team is involved
* A quality facilitator leads the improvement process	* There is no quality facilitator
* People are seen to create quality – creativity is encouraged	* Procedures and rules are all important
* Is clear about roles and responsibility	* Is vague about roles and responsibilities
* Has clear evaluation strategies	* Has no systematic evaluation strategy
* Sees quality as a means to improve customer satisfaction	* See quality as a means to cut costs
* Plans long-term	* Plans short-term
* Quality is seen as part of the culture	* Quality is seen as another and troublesome initiative
* Is developing quality in line with its own strategic imperatives	* Is examining quality to meet the demands of external agencies
* Has a distinctive mission	* Has no distinctive mission
* Treats colleagues as customers	* Has a hierarchical culture

Table 2.6: Quality vs Ordinary institutions (Sallis 1993:82)

2.12 Summary and conclusion

The purpose of this chapter was to make an in-depth literature study of quality and total quality management in schools. Guidelines for the implementation of TQM in schools were also given.

The nature and importance of TQM was investigated and its meaning was also expounded. An historical overview of TQM was made and prominent gurus' contributions to TQM were also highlighted. A brief overview of research done abroad on TQM in schools was also investigated.

The pillars of quality and the foundations on which the pillars have been anchored were also discussed. The importance of teams and their formations was also extensively dealt with.

TQM-tools and techniques that are relevant to the school situation were also identified and discussed with a view to their employment in daily management to enhance TQM and finally several guidelines were given as to how TQM can be implemented in schools so as to change schools into quality schools or institutions.

It is interesting to note that quality institutions embrace all the qualities that successful institutions have. All institutions or organisations have one goal in mind and this is to be successful and reach their set goals. The only sure way of achieving this is through the adoption of TQM. The changes in our education system which demand delivery of services to the customer's satisfaction, is a demand to transform ordinary institutions and organisations into quality institutions and organisations. This move, belated and long overdue as it seems, can only bear fruit if TQM as a management strategy is adopted and implemented by all institutions and organisations.