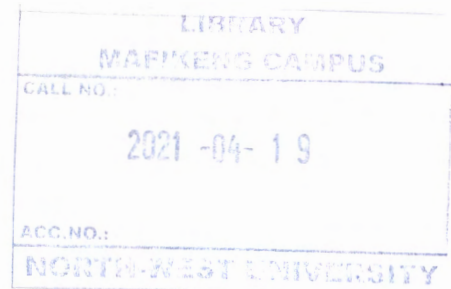


**TOTAL QUALITY MANAGEMENT (TQM) AS A TOOL
TO IMPROVE THE QUALITY OF EDUCATION RESULTS
IN ATAMELANG DISTRICT SECONDARY SCHOOLS OF
NORTH-WEST PROVINCE.**

BY



TISETSO PATRICK RAMOTSE

**A MINI DISSERTATION SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENT FOR THE DEGREE
OF MASTER OF BUSINESS ADMINISTRATION IN THE
DEPARTMENT OF COMMERCE AND ADMINISTRATION IN
THE FACULTY OF COMMERCE AT THE UNIVERSITY OF
NORTH WEST.**

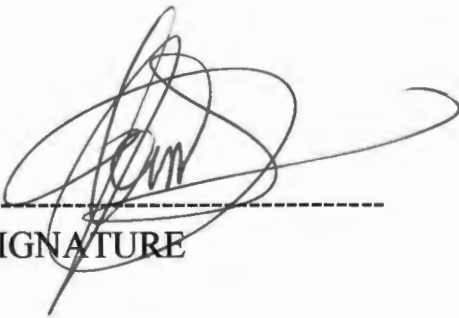
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DATE SUBMITTED : March 2002

DECLARATION

I TISETSO PATRIC RAMOTSE declare that the dissertation for the degree of Masters of Business Administration at the University of North-West hereby submitted, has not previously been submitted by me for a degree at this or any other University, that it is my own work in design and execution and that all materials contained herein have been duly acknowledged.



SIGNATURE

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ABSTRACT

Total Quality Management (TQM) as a tool to improve the quality of education results in Atamelang District Secondary Schools of North West Province.

The purpose of this study was to determine how total quality management can be used as a tool to improve quality of education results in Atamelang district secondary schools of North West Province.

A thorough literature review was conducted. Furthermore, a questionnaire was developed, pre-tested and administered. A random sample of sixteen ($n = 16$) secondary schools in Atamelang District of Education was conducted. The questionnaire was exposed to two hundred and fifty ($n = 250$) respondents. The subjects of the study were management, e.g. principals, deputy principals, HODs ($n = 94$) and teachers ($n = 156$).

The study survey revealed that most of the respondents were of the idea that Total Quality Management is a methodology relevant to help educators and schools to improve the quality of education in the district. From the qualitative and quantitative data analysed, the following emerged as some of the strong facts for improving the quality of education results: commitment by all stakeholders, teamwork, government supply of resources, effective school management, positive attitude towards work, proper and continued service by subject advisors, training of educators and management, good communication within the school, monitored attendance of educators and learners, class attendance by educators and discipline to all law transgressors (educators and learners).

From the literature review, it is evident that TQM helped to improve education quality in countries like USA, Britain and Australia. Schools that implemented Total Quality Management produced a coherent and integrated approach and goodwill of staff plus good education results.

In conclusion, the study revealed that TQM can help improve the quality of education in Atamelang District of Education when there is commitment and quality work done by all involved in education. The study and understanding of TQM principles by management and educators will also help them succeed in implementing TQM in their schools and district.

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CHAPTER ONE

1. INTRODUCTION

This research focused on Total Quality Management (TQM) as a tool in improving quality of Education in the Atamelang Secondary Schools of the North West Province. Teachers' perceptions on the implementation of Total Quality Management (TQM) in secondary schools in the Atamelang district of the North West Province was studied.

Total Quality Management is a vehicle that education professionals can use to cope with the forces of change that are buffeting our nation's education system. The major difficulty that education professionals face today is their inability to deal with the system's failures that are preventing them from developing or implementing new educational processes that will improve the Total Quality Management in education (Arcaro, 1995).

In the context of this chapter, the background to the study will be outlined, first to be followed by the statement of the problem, methods of research, significance of the study, scope of the study and organisation of the study.

1.1 BACKGROUND TO THE STUDY

This study dealt with teachers' perceptions - including management - towards TQM in the Atamelang Secondary Schools of the North West

Province. The other related problem to be looked into, is the poor performance by matric candidates in their final year. Steyn (1995:15) comments as follows in relation to the problem: "South Africa is currently faced with serious problems in schools: for example, the drop out rate of pupils; poor basic education; poor pupil's performance ...". The role of management and the influence of teachers on the results was also looked into. Total Quality Management is creating a culture where the aim of every member of staff is to delight their customers, and where the structure of their organisation allows them to do so. It is a philosophy of continuous improvement, which can provide any educational institution with a set of practical tools for meeting and exceeding present and future customers needs, wants and expectations (Sallis, 1993, Murgatroyd and Morgan, 1993, Davies and Burnham, 1997).

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Total Quality Management came into existence because of crisis. The Japanese economy was destroyed and TQM boosted it (Schargel 1996). Due to the crisis in schools, the education officials also decided to use TQM to correct the ills. The use of TQM as a school restructuring paradigm has been recently applied in the USA and has yielded varying degrees of success (Schmoker and Wilson, 1993). For example in 1970 the Johnson City School in New York was the lowest achieving among the 14 districts with scores showing that 45% to 50% of students were at or above grade level in 1972. According to Schmoker and Wilson, (1993:99), TQM was introduced and in 1977, 70% scored at or above grade level. In 1984, it ranged between 80% and 90%.

Poor School results, especially matric results, led to total quality intervention strategies by education officers in the North West Province and also in Atamelang District Secondary Schools. The department of education introduced the culture of learning and services (COLTS); Batho-pele (People first); Tirisano; and Quality Learning Project (QLP) to improve the quality of services and learning. Out of twelve districts, the Atamelang district has always, for more than four years been the lowest achiever in matric pass percentage. This is a point of concern and an area to be researched, so as to see what the causes of such a poor performance are, to see how the problem of poor performance occurs, and also to see how best Total Quality Management could be implemented to help remedy the problem. Table 1.1 lucidly shows that performance of Atamelang District as compared to other districts in the province and table 1.2 shows the performance of some secondary schools within the district. The latter comparison of some schools is also shown by means of a graph in figure 1.1.

PERFORMANCE COMPARISON OF THE NORTH WEST PROVINCE
DISTRICTS

REGION	DISTRICT AND POSITION IN 1999	1997 % PASS RATE	1988 % PASS RATE	1999 % PASS RATE	INCREASE / DECREASE %
1	Atamelang (12)	29,7	36	23,5	-12,5
2	Brits (4)	58,3	58,3	59,6	+1,3
3	Klerksdorp (6)	43,5	52,6	51,2	-1,4
4	Lichtenburg (3)	58,3	66,6	60,2	-6,4
5	Mabopane (7)	52,1	52,6	49,0	-3,6
6	Mafikeng (8)	53,2	50,2	47,2	-3,0
7	Mothibistad (11)	49,2	50,6	36,2	-14,4
8	Potchefstroom (2)	65,5	59,2	63,0	+3,8
9	Rustenburg (1)	53,6	61,7	64,9	+3,2
10	Temba (5)	53,9	52,2	56,4	+4,2
11	Vryburg (10)	48,2	51,7	43,1	-8,6
12	Zeerust (9)	49,3	54,2	46,3	-7,8

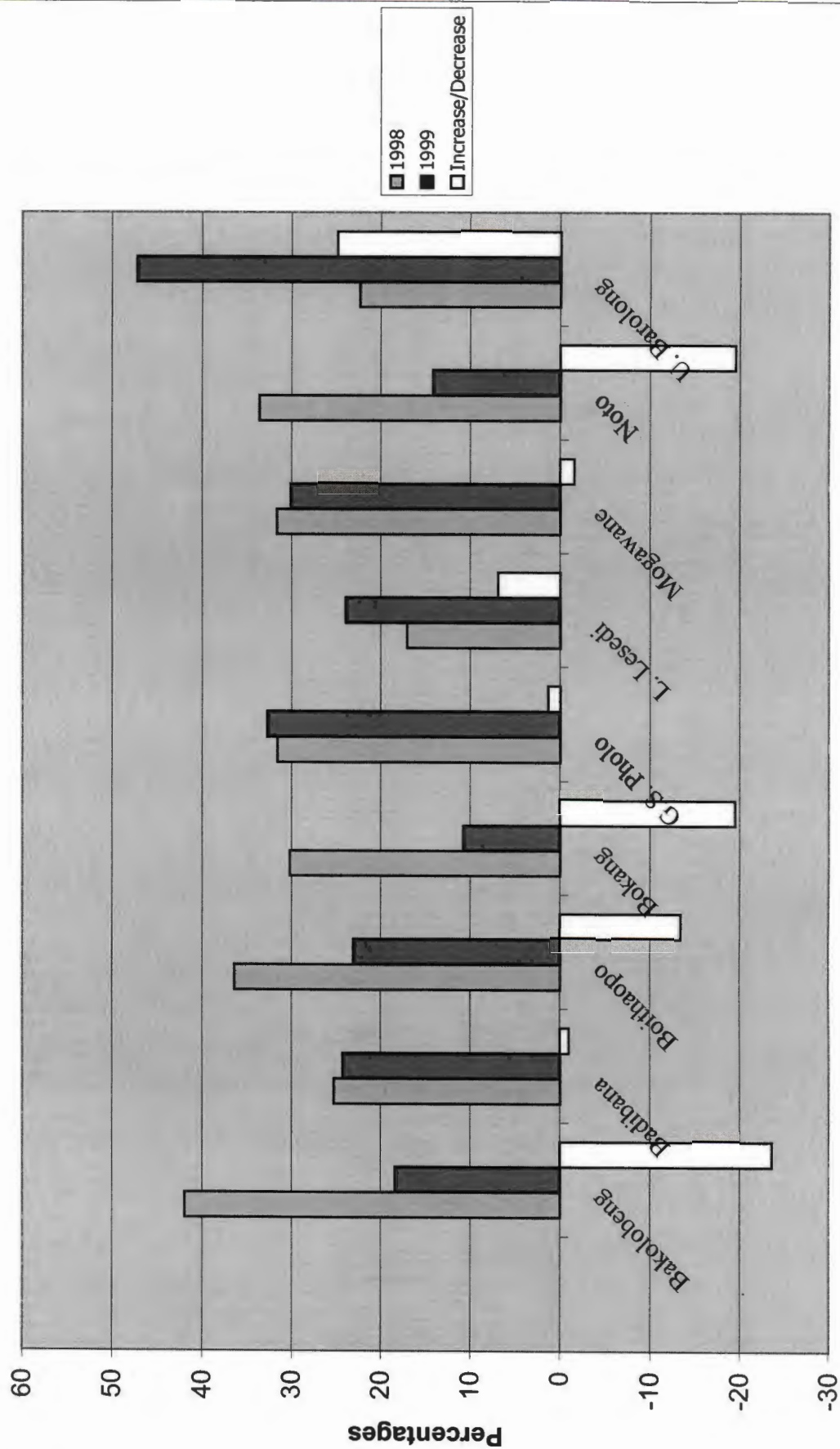
Table 1.1 (Adapted from NWP Matric Results 1999)

ATAMELANG DISTRICT STATISTICAL COMPARISON OF SOME SECONDARY
SCHOOLS MATRIC PERFORMANCE IN 1998 AND 1999

	SECONDARY SCHOOL	1998	1999	INCREASE/ DECREASE
1	Bakolobeng Sec School	41,96	18,40	-23,56
2	Badibana Sec School	25,26	24,29	-0,97
3	Boithaopo Sec School	36,42	23,08	-13,34
4	Bokang Sec School	30,21	10,77	-19,44
5	G.S. Pholo Sec School	31,63	32,76	+1,3
6	Leruntse Lesedi Sec School	17,06	23,96	+6,90
7	Mogawane Sec School	31,68	30,12	-1,56
8	Noto Sec School	33,64	14,17	-19,47
9	Utlwanang Barolong Sec School	22,39	47,27	+24,88

Table 1.2 (Adapted from NWP Matric Results: 1999)

ATAMELANG DISTRICT STATISTICAL COMPARISON OF SOME SECONDARY SCHOOL MATRIC PERFORMANCE IN 1998 AND 1999



1.2 STATEMENT OF THE PROBLEM

The study focussed on areas such as schools' final year results (matric), teachers' commitment, management roles and relationships with the results. From the background to the study, the advanced poor results issue portrays lack of TQM assurance.

The purpose of this study is to investigate the application of TQM; the cause of poor performance, and what is done about it.

The following questions by McFarlane (1994) were also aligned with the study to see how they affect education in the Atamelang district Secondary schools:

- a. Can School principals and other authorities risk TQM approach of trusting and empowering their employees, and infuse them with the high ideals of quality shared by all?
- b. Is it possible for the majority of principals to change their Philosophy and practice from the autocratic approach to the new leadership style advocated by TQM?
- c. Will principals who have viewed their staff members as subordinates, ever be able to really meet with them as teammates who need to be involved in the decision-making and problem-solving processes?

These are some of the questions that lead to the assumption that there is a lack of continuous improvement in the secondary schools in Atamelang district.

1.3 OBJECTIVES OF THE STUDY

The specific objectives to be covered by the study include:

- ◆ a determination of the nature and scope of Total Quality Management,
- ◆ an examination of the implementation of Total Quality Management in Atamelang Secondary Schools of the North West Province,
- ◆ an investigation of the relationship between matric results and school management (this is the main objective).

1.4 OPERATIONAL DEFINITIONS OF VARIABLES

Quality is meeting customers requirements right first time, on time, every time and delighting them in the process by doing that little bit extra that they do not imagine possible (Joyce, 1995, Greenwood, and Gaunt, 1994, Allen, 1990).

Total Quality Management: "is a new way of thinking and living that pervades all aspects of life, which requires efforts by the team, working towards common objectives" (Bonstingl, 1992). This definition will be the main pillar of this study for it encourages togetherness and also focuses on working towards common objectives by all. TQM is a technique developed by Deming W.E. to improve the efficiency of flexible work teams. It is an important set of tools that can be employed in the management of educational institutions (Sallis, 1996). Oakland (1995), defines TQM as an approach to improving the competitiveness, effectiveness and

flexibility of a whole organisation. It is essentially a way of planning, organising and understanding each activity, and depends on each individual at each level. TQM incorporates quality assurance, extends and develops it. It is about creating a quality culture where the aim of every member of staff is to delight their customers, and where the structure of their organisation allows them to do so (Peters & Waterman, 1982).

Secondary Schools: refer to post primary schools with grade 12 as the highest class (Van Dou, 2000).

District: refers to an enlarged educational area sub-divided into a number of circuits. This area is led by the district manager.

This research focussed mainly at the Atamelang district area of Education.

1.5 SIGNIFICANCE OF THE STUDY

The significance of this study is to attempt to examine learning and teaching in the schools to be studied by developing new knowledge about effective management qualities such as:

- ◆ Creation of a positive school climate
- ◆ creation of open communication channels
- ◆ empowering others
- ◆ developing vehicles for teamwork

- ◆ envisioning and energizing others
- ◆ organising and motivating others
- ◆ giving feedback
- ◆ managing change (Bonstingl, 1992)

This study also focussed on the need for institutions to use Total Quality Management to boost their performance levels as proven by literature. The study lucidly explains Total Quality Management as a technique developed by Deming to improve the efficiency of flexible work teams. Deming cited continuous improvement as the broad goal of TQM. Total Quality Management is emphatic on the philosophy of quality throughout an organisation (Sallis, 1996; Berry, 1991).

All the organisations focussed on growth and improvement and should strive to introduce and sustain the TQM culture and values.

This study is important for it focuses on the implementation of TQM in selected secondary schools in Atamelang district. It also looks at how TQM brought the improvement in both private and public sectors in other countries and how TQM is applied in schools and how best it can be used as a tool to improve the quality of education in the Atamelang Secondary Schools (Brown, et al, 1990, Cullen and Hollingum, 1987, Weller and McElwee, 1997).

1.6 METHOD OF RESEARCH

Data for this study was collected through literature search, with relevant data collection tools and case study methods.

On perusal of the literature concerning Total Quality Management, it would appear that the qualitative method would be suitable for this study.

The reasons are that quantitative methods are more concerned with maximizing the objectivity and testing the validity of what we think we are observing, whereas qualitative methods are more concerned with subjectivity and tapping the deeper meaning of human experience. Crabtree and Miller (1992) also lucidly explain that the qualitative method is being used for identification, description, explanation and generalization. Rubin and Babbie cited by Sepuru (1996) say, qualitative method is empirical in that, it utilizes experience and observation en route to knowledge.

1.6.1 Literature review

In the literature review, a thorough study of the secondary and primary source nature and scope of TQM in education and in the private sector was conducted. A dialogue search with the following information on: how TQM can be used in improving the quality of education in schools was also gleaned. The literature study covered a wide spectrum of primary and secondary resources, i.e. books, journals, reports, documents, newspapers,

dissertations, etc. Literature study promoted critical thinking and brought insight to various approaches, perspectives, and methods for examining TQM. Cresswell (1994), in Phendla (1996), argue that the purpose of a literature study is to relate a research study to a larger, ongoing dialogue in the literature about a topic, filling gaps and extending prior studies. For the purpose of this study, literature study was related to TQM successes, failures and as a tool to improve quality of education.

1.6.2 Empirical investigation

In this study data was collected by means of:

1.6.2.1 Questionnaire

A questionnaire was developed and pretested. The aim of the questionnaire is to collect information from secondary schools principals, deputy principals, heads of departments and teachers on their perception on the implementation of TQM in secondary schools. The roles of management and teachers in improving performance, and how Total Quality Management can be used as a tool to improve the quality of education in secondary schools in the Atamelang district of the North West Province was looked into.

1.6.2.2 Population and Sampling

Sampling in this study was drawn from selected secondary schools in Atamelang district. It was a random sampling because "each

individual person in the sample had an equal probability of being selected" (Cresswell, 1994, Krathwohl, 1993).

1.6.2.3 Data analysis

In this study data was analysed through the quantitative and computer aided statistical analysis. The SSPS - programme was used to compute the results of the study. The first step was to compute descriptive data for each respondent in the study. These included statistics like chi-square test, frequency distribution, mean and standard deviation. Some information was be analysed through the qualitative method.

1.7 SCOPE OF THE STUDY

This study is limited to Atamelang district secondary schools. Atamelang district has sixteen secondary schools and 302 educators. This district is located in the North West Province and is one of the poorly performing districts. The district is largely rural. While a study in Atamelang district secondary schools can serve as an example for other areas, its results cannot be taken as completely referring to other districts in the Province.

1.8 ORGANISATION OF THE STUDY

The chapters in this study took the following order:

- a. Orientation and introduction
- b. TQM background, successes and failures in different work environments and countries.
- c. Research methodology
- d. Data analysis and interpretation
- e. Summary, recommendations and conclusion.

1.9 CONCLUSION

This chapter clearly highlighted everything that the researcher went through in the study. It articulated the topic, background to the study, aims and objectives of the study, significance of the study, problem statement, research methodology, scope of the study and organisation of the study.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter an overview of Total Quality Management (TQM) research is provided. Schools are currently in the midst of numerous changes in education. The rate of change is accelerating at a pace that soon the school principals, deputies, heads of departments and teachers will be compelled to adopt a new approach towards quality management (Karimulla, 1994:1). Quality school management means establishing a school climate conducive to quality professional development, improving overall pupil performance at a school and helping teachers to prepare effectively for quality teaching to take place. Quality in school in turn refers to the quality inputs, processes and outcomes (Genck, 1983:67).

Declining and poor schools performance is not usually recognized to be caused by the inadequacy of traditional school administrative practices to meet today's requirements. People usually look for something wrong with teachers, children and parents or teaching techniques and resources. Seldom we look for the cause on the human side of school management, that is, changes in the internal operations and outside circumstances of schools, and how these are impacting on the people involved, that is, teachers, principals, parents and learners. These statements are supported by Genck (1983) when he says that the cause of declining performance lies in

challenging circumstances combined with inadequate management services. He continues by explaining that in the absence of management techniques suited to new circumstances, and to the nature of education offered, most schools are in a situation of internal disruption that is demoralizing and damaging to performance and productivity (Genck, 1983). In spite of the widely documented and perceived decline, neither complaining nor setting higher standards will help schools improve without the internal management practices that are required.

Even though Genck (1983) has lucidly highlighted that some schools perform poorly, he also indicated that other schools are performing well in spite of these circumstances. Some schools are functioning successfully. These successful schools have created a more participative and humane process of management that emphasizes performance and results as well as people and relationships. Key features of these successful schools' management process as propounded by Genck (1983) are that:

- ◆ they evaluate performance, using information whenever possible, even in a field like education that sometimes defies any quantitative indications,
- ◆ they accept responsibility for performance, organising teachers and administrators to strive for and achieve good results,
- ◆ they maintain teamwork and constructive working relationship among teachers, administrators, and students in spite of universal pressure towards conflict and fragmentation

Due to mentioned key features, successful schools realize the ultimate objective of all education - the academic achievement and development of students. They sustain high levels of public confidence, parent and community satisfaction, staff morale, productivity, and job satisfaction (Genck, 1983).

2.2 DEFINITION OF MAIN CONCEPTS IN THE STUDY

In this section, a brief attention was paid firstly to the definition of the concept Total Quality Management (TQM) and Total Quality Management movement. Focus was also on models of Total Quality Management in schools and Total Quality Management research in developed and developing countries highlighted by various literature sources.

2.2.1 Total Quality Management (TQM)

Total Quality Management (TQM) is a philosophy and a methodology that assists institutions to manage change, and to set their own agendas in dealing with the plethora of new external pressures (Sallis, 1996). TQM does not and will not bring results overnight neither is it a panacea for all the problems that beset education. TQM is an important set of tools that can be employed in the management of educational institutions (Sallis, 1996). Total Quality Management (TQM) is a technique developed by W. Edwards Deming to improve the efficiency of flexible work teams. The broad goal of TQM is continuous improvement. Jones cited by Van Dou (2000)

argues that TQM aims to impress upon workers the importance of continuously improving the efficiency of the production process in order to reduce costs, increase quality, and reduce waste. Workers in the TQM systems are expected to make suggestions for improving all aspects of the work and are expected to share their specialized knowledge with management so that it can be communicated throughout the organisation (Van Dou, 2000).

Oakland (1995) defines TQM as an approach to improving the competitiveness, effectiveness and flexibility of a whole organisation. It is essentially a way of planning, organising and understanding each activity, and depends on each individual at each level. For a school or any organisation to be truly effective, each part of it must work properly together towards the same goals, recognizing that each person and each activity affects and in turn is affected by others.

TQM is a way of ridding people's lives of wasted effort by bringing everyone into the processes of improvement so that results are achieved in less time. The impact of TQM on an organisation is firstly, to ensure that the management adopts a strategic overview of quality. The approach must focus on developing a problem prevention mentality. Oakland (1996) propounded that if things are done correctly first time round, the usual problems that create the need for inspection will disappear. It is stated that sorting good products from bad was not the most efficient way to assure a quality output (Berk, 1993). A more efficient management philosophy must focus on actions to prevent a defective product from ever being created, rather than simply screening it out.

The employees identify problems and opportunities for improvement and engage in endeavours which determine root causes of these problems, generate and choose solutions and implement improvement. TQM proposes that all employees can make an impact on the quality of goods and services provided, thus the organisation's system and processes are regarded as highly as its products and outputs (Harris, 1998).

Total Quality Management incorporates quality assurance, extends and develops it. TQM is about creating a quality culture where the aim of every member of staff is to delight their customers, and where the structure of their organisation allows them to do so. In the total quality definition of quality the customer is sovereign. This is the approach by Peters and Waterman as cited by Van Dou (2000).

Quality management is a set of concepts, strategies, tools, beliefs, and practices which is aimed at improving the quality of products and services, reducing waste and saving cost. TQM is related to the way in which all employers of the organisation work and contribute to meet quality standards set by customers (Navaratnam and O'Connor 1993). According to Greenwood and Gaunts (1994:204), "TQM requires the recognition of customer-supplier relationships which are both internal and external to the school, requires the prevention rather than detection of faults and failures at all points in the system".

In this study, Total Quality Management refers to an organisations'

wide effort to:

- ◆ focus first and foremost on its suppliers and customers
- ◆ dedicate its efforts to continuous improvement, and
- ◆ make the organisation be viewed as a system, and the work people do within the system be seen as an ongoing process.

The essence of Total Quality Management is leadership - the kind of leadership required to ensure that everyone in the organisation is working in a way that ensures consistently high performance and constant improvement. Murgatroyd and Morgan (1993) suggest that leaders or principals should improve communication, remove obstacles to improvement, and empower teachers, learners and parents. Power should rest on the hands of teachers and students, who can deliver quality improvement directly. In other words, power is bottom-up, not top-down. Empowerment of teachers, performance and good strategies will help the school to achieve challenging goals that meet or exceed the expectations of stakeholders. The TQM management encourages a visionary kind of leadership (Murgatroyd and Morgan, 1993).

From an analysis of high performing organisations and those that can be described as permanently successful, there are five critical features of successful TQM organisations that are required to achieve sustainable and steep slope quality improvements Murgatroyd and Morgan (1993:159) lucidly table the following features of organisations:

- ◆ Alignment within the organisation (everyone pulling towards the

- same strategic ends) and commitment to a shared vision;
- ◆ an extended understanding of the customer-driven and process-oriented basis for quality;
- ◆ an organisation designed around teams, with investments made in team development and changes made in performance management systems to reflect teamwork as the basis for the organisation's activities;
- ◆ the setting of particularly challenging or outrageous goals, which commit the organisation to significant increases in performance outcomes, and;
- ◆ the systematic daily management of the organisation through the use of effective tools for measurement and feedback.

Where all of the above mentioned elements are strong, they provide the focus for the work in the organisation. TQM has proven remarkably successful. Without these elements, TQM is likely to be ineffective (Murgatroyd and Morgan, 1993). Each of these features, namely: shared goals, knowing the customer, the primary responsibility of teams, outrageous goals and effective feedback by measurement can be regarded as a task that the management team within a TQM organisation has to achieve if it wishes to be successful (Murgatroyd and Morgan, 1993).

2.2.2 Quality Education

According to Tofte (1995:470), "quality education means providing teaching and challenging educational situations fit for students' needs, interests and expectations, working for continuous

improvement in all processes to make students satisfied, and working to maintain and adding value to life. Quality is meeting customers requirements right first time, on time, every time and delighting them in the process by doing that little bit extra that they do not imagine possible (Joyce, 1995, Allen, 1990). It is referred to by Bradley (1993:65) as meeting and exceeding client needs and expectations". Greenwood and Gaunt (1994:204) succinctly define it as, "satisfying agreed customer requirements".

2.2.3 Quality assurance

Quality assurance refers to the determination of standards, appropriate methods and quality requirements by an expert body, accompanied by a process of inspection or evaluation that examines the extent to which practice meets these standards (Murgatroyd and Morgan, 1992:45-46). The matric examinations systems can be seen as quality assurance systems. Students sit for examinations set by a national or provincial body of examiners, with all students from different schools sitting for the same examination. The idea is that students will have an equal opportunity of succeeding in the examination and that the results will perfect standards set by the provincial body for conformance to their expectations (Van Dou 2000). Quality assurance in schools is also reflected through, teacher evaluation methodologies and inspection of schools.



2.2.4 Contract conformance

Contract conformance in education is defined in terms of meeting or exceeding contract requirements like meeting deadlines of submission

of homework and assignments by learners or performance of assigned duties and tasks by teachers (Phendla, 1995). Under contract conformance it means some quality standard has been specified during the negotiation of forming a contract. Tenner and DeToro (1992:63), argue that contract performance is the degree to which a product's design and operating characteristics meet established standards.

2.2.5 Customer-driven quality

Murgatroyd and Morgan (1992:46-47) contend that customer driven education can be seen through the activities of pupils, parents and teachers in a school, where they indicate what they want to be done to make changes in order to improve the school. For effectiveness, the stake-holders' ideas, concerns and suggestions should be seen being implemented on a regular basis.

Customer-driven quality refers to a notion of quality in which those who are to receive a product or service make explicit their expectations for this product or service and quality is defined in terms of meeting or exceeding the expectations of customers.

2.2.6 The principles of Total Quality Management

Total Quality Management guiding principles are main cornerstones on which the concept of TQM revolves. They succinctly give a clear guideline of what is expected of everybody in the organisation.

These guiding principles highlight the whole process of TQM.

The principles of Total Quality Management may be lucidly summarized as follows (Greenwood and Gaunt, 1994:76, Harris, 1998:204):

- ◆ quality is conceptualized as customers' perceptions;
- ◆ a customer is defined as anyone who receives a product or service, whether inside or outside the organisations;
- ◆ the aim is to identify and meet the customer requirement through the design, development and management of processes which are error free, that is by concentrating on prevention to eliminate waste and reduce cost;
- ◆ by utilizing the internal customer concept, the result of each process is viewed as a product, consequently evaluation takes place immediately, possibly by the immediate customer but preferably by the processor;
- ◆ central to TQM theory is the idea of continuous self-improvement, therefore TQM organisations are essentially learning systems;
- ◆ TQM requires the involvement and commitment of all organisational improvement; and
- ◆ TQM requires superior quality information systems to provide timely measures of and feedback on performance.

2.3 THEORETICAL CONSIDERATION

A brief discussion of the theoretical consideration of Total Quality Management is as follows:

2.3.1 Conceptual framework of Total Quality Management

In this section the framework of existing quality initiatives will be described and there will also be focus on planning and implementing new ones. This study is designed to assist institutions both in managing quality and in using quality management as a means of institutional development. Even though there are guides on quality management, institutions should find their own route to quality, and it must be clear that externally prescribed approaches will sometimes be least effective (Dale and Boaden, 1994).

According to Van Dou (2000), a quality framework needs to meet the special requirements of education and must make sense within the context of the pedagogic developments currently taking place. To be appropriate in the educational context, a quality framework must concern itself with teaching and learning. The framework is on Total Quality Management and educational quality. The quality in Education has ignored schools initiative focusses on improving school efficiency and effectiveness in its core business - student learning (King, 1999). As Warren (1992) has pointed out, in a higher education context, what students learn, is the most critical element of educational quality, and one that has been virtually ignored. The delivery of learning to students, who are the primary customers of the process must therefore form the central focus of the framework. Spanbauer (1992) has similarly argued that, 'No school reform or restructuring is worth its salt unless its major focus is the teaching/learning process.

2.3.1.1 Developing leadership and strategy

Strategy is a product of leadership and both leadership and strategy are key elements in any quality framework. Leadership is an observable, learnable set of practices. Practices which challenge the process inspire a shared vision, enable others to act, model the way and encourage the heart (Kouzes and Posner, 1987). Caroselli (1990:94), states that leadership is about challenging the prevailing wisdom, the capacity to influence and organise meaning for the members of the organisation. Kawalski and Reitzug cited by Squelch and Lemmer (1994:2) refers to leadership as a process that results in the determination of organisational objectives and strategies that entail building consensus to meet these objectives and involve influencing others to work towards these objectives. Bongstingl (1992a) states that successful leadership in Total Quality Management is shown by growth and development of people through encouragement, empowerment and enabling rather than temporary acquisition of artificial symbols of short term gain through command, control and compliance.

Quality management requires a commitment from management for quality initiatives to succeed. This is the view of quality gurus (Deming, 1987, Juran, 1989). Linked to purposeful leadership, effective educational institutions need well worked out strategies to deal with the competitive results-oriented environment in which they operate (Van Dou, 2000).

Together with effective teamwork, leadership and strategy provide the engine for the transformational process for development. To be effective, educational institutions require processes for developing their quality strategy. These include:

- ◆ a clear and distinctive mission;
- ◆ a strategy for achieving that mission;
- ◆ the involvement of customers, both internal and external, in the development of strategy; and
- ◆ the assessment and evaluation of the institution's effectiveness against the goals negotiated with customers (Spanbauer, 1992).

According to Spanbauer (1992), leadership and commitment to quality must come from the top. All models of quality emphasize that without the drive of management quality initiatives will be short lived. Spanbauer (1992) stated that it is leadership that puts strategy into action and communicates the vision to the staff. Quality management requires a particular style of leadership, which is as characterised as transformational management. The function of school management is to provide both the vision and the culture of a mutually supportive environment in which teachers and managers realize that their individual successes are interlocked with team action - their achievements rise and fall together, Spanbauer (1992).

2.3.1.2 Delighting customers

According to Sallis (1993:126), delighting the customers is the purpose of Total Quality Management. This is achieved by a continual striving to meet both internal and external customers' needs and expectations. Customers' needs are established by regularly soliciting their views (Sallis, 1993). There are various methods of doing this - focus groups, questionnaires, advisory groups, open days, and informally talking to people. Sallis (1993) lucidly explains that it is important that work is done systematically, and that the view of people who decide not to attend the institution are also solicited. The information from these consultations must be collated and analysed and used when taking decisions in a learning environment. It is important to involve the customers in the process because, at the end of the day, it is their views that count, not those of the institution's management. Students do not come to the college because there is a great budget, to them quality is about convenience, promptness, courtesy and reliability (Sallis and Hingley, 1992).

2.3.1.3 Designating quality champions

In every institution there must be an appointment of the quality champion or facilitator. The designated quality champion should report directly to the Head teacher or principal. It is the responsibility of the facilitator to publicize the programme, and to lead the quality steering group in

developing the quality programme (Sallis, 1993). In exception to designating quality champions, Sallis (1993) also highlights that there is a need for forming a quality steering group and appointing quality co-ordinators.

Quality steering group represent key interest and must have representation from the senior management team. Its role is to drive and support the quality improvement process. Quality steering group is both the powerhouse of ideas and the initiator of projects (Sallis, 1993).

Quality co-ordinators are people appointed to coach and mentor others. Their role is to assist and guide teams in discovering new ways to tackle and solve problems (Sallis, 1993).

2.3.1.4 Initiating staff training for quality

Staff development can be seen as an essential tool for building the awareness and knowledge of quality (Weller, 1993). It can be the key strategic change agent for developing the quality culture. If TQM is largely about culture then a means has to be found of capturing the hearts and minds of staff. It has long been recognized by motivational theorists that training is one of the most important motivators in an organisation's armoury (Weller, 1993).

It is important in the initial stages of implementation that

everyone is trained in the basics of TQM. Staff need a knowledge of some of the key tools including teamwork, evaluation methods, problem solving and decision-making techniques. Both internal and external trainers have their part to play. It can be helpful to visit other organisations, whether educational or business, which are involved in the process of developing total quality initiatives (Sallis, 1993, Schmoker and Wilson, 1993). Peters, cited by Sallis (1993), provides a prescription on what constitutes a successful organisational training programme.

Training should be used as the flagship for strategic change. Peters also cited by Sallis (1993) argues that management in the future will flow through empowering vision and shared values. Training is a prime opportunity to underscore the organisation's values. To do this, top management must be closely involved in training programmes (Sallis, 1993).

2.3.2 QUALITY MANAGEMENT AND MONITORING

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2.3.2.1 Communicating the quality message

The strategy, relevance and benefits of TQM need to be effectively communicated. There can be a great deal of misunderstanding about the purpose of quality. The long-term nature of the programme needs to be made clear, as do the reasons for embarking on it. Staff development, training and

team building are some of the most effective of achieving it. Staff need to be regularly informed with either special newsletter or regular reports in the in-house journal. The importance of good communications and their feedback to management cannot be overemphasized. It is important to highlight good practices so that positive attitudes and goodwill can be drawn on. An institution will need to find its champions and leaders and to recognize the successes. Achievement needs to be celebrated, and there needs to be public recognition of good work. This does not have to be monetary recognition, but the motivational effects of public recognition and praise should not be underestimated. All the staff need to be involved in the quality process. The quality system needs to be the institution's own. The importance of staff ownership of the quality improvement process cannot be overstated (Sallis, 1993, Dale and Boaden, 1994).

2.3.2.2 Ensuring that the management team monitor progress

The management team will not be committed to the process unless it is well informed about both the philosophy and the methods of quality management. It is necessary to build up a well integrated and robust management team which can set an example to the teams in the rest of the institution. If TQM requires a 180 turn this can only happen if they are as well trained as anyone else in the institution, and are prepared to change their working patterns to support the development of new ways of working. Strategic training in evaluation strategies will probably be necessary. The management team must lead the quality

cascade (Burnham, 1997).

2.3.2.3 Supporting teams

West Burnham (1992:119) perceives team as a “quality group”. Rowland and Birkett (1992) extend this further and assert it as a group who feel energised by their ability to work together. Katzenbach and Smith (1993:45) also state that, “it is a small number of people with complementary skills who are committed to a common purpose. Performance goals, and approach for which they should hold themselves accountable”.

Teamwork is the element that links teacher professionalism to the quality development process. It is the framework in which innovation and change become an accepted fact of life. Without teamwork quality development cannot be instituted (Schotles et al, 1990). The key aspect of teamwork in this framework is recognition of other people's roles within the institution and the need to deliver services internally to agreed standards. Teaching a modern curriculum requires the close integration of academic staff together with support staff, particularly learning resource professionals.

Teams can be seen as the engine of quality improvement. They make quality management work. Teams can clarify issues and ideas, and they are the means by which conflicts over direction and policy can be constructively handled. Working in teams can provide every person in the organisation with a means of

expressing their views and making a contribution to the quality improvement process (Schotles et al, 1990).

2.3.2.4 Monitoring the delivery of the curriculum

Monitoring is the stage where quality systems are vital (Van Dou, 2000). The methods of learning need to be established and followed for each aspect of the programme. The type of information which needs to be part of the curriculum includes syllabuses, course admissions, schemes of work, the records of achievements. The recording of failure and below - average performance and the actions taken to correct them, should be documented (Sallis, 1996).

The stage of documentation includes the aims and objectives of each programme. What needs to be included, where relevant, is the evidence for the demand of the programme and the resources devoted to it. Evidence of learners' or sponsors' inputs into the design will be a feature of this part of the quality system (Sallis, 1996). The process of curriculum and programme management needs to be specified, including arrangement for teamwork. The roles within the team and their responsibilities and levels of authority should also be clarified (Sallis, 1996).

2.3.2.5 Verifying the assessment of student performance

The details of both formative and summative assessment and the criteria for grading and the award of qualifications are necessary

elements of the quality framework. A system for the internal verification of the assessment arrangement needs to be in place and documented. External examiners, moderators' and verifiers' reports will provide important evidence, where available, of the quality of learning (Arcaro, 1995).

2.3.2.6 Measuring the costs of quality

It is important to know both the cost of implementing the quality programme and the costs of not undertaking it. The costs of ignoring the quality message could involve lost enrolments, student failures, damage reputation, and lost opportunities. The exercise is important as it highlights many of the reasons for pursuing quality improvements and provides a motivation for sticking with the programme (Rooney, 1988)

2.3.2.7 Developing a self-assessment culture

Institutions should have means for evaluating their total performance. External inspectors may undertake this. Institutions may also decide to undertake their own audit (Dale and Boaden, 1994).

Staff can assess areas other than their own. Outsiders may be included in the audit. A system of peer preview can build confidence and trust, and can act as significant staff development. Mechanisms need to be developed to feed the results of this auditing back into the strategic planning process.

Feedback loops are vital for assessing and assuring quality. The quality system will need to document the evaluation mechanisms that the institution has in place to monitor both the achievement of individuals and the success of its programmes. The participation of the learner in the assessment of their own progress and their experience of the programme is an important element in this assessment. The methods include records of achievement, review meetings, questionnaires and internal audits. Whatever the method employed, it must be appropriate to the process (Dale and Boaden, 1994).

Regular review and evaluation need to be an integral part of the programme. The steering group should undertake regular reviews and the management team should consider their reports and carry out its own monitoring, (Van Dou, 2000).

2.4 Applying quality tools and techniques for quality improvement

Quality tools and techniques are most needed in the whole TQM process. Through the application of quality tools and techniques, there are greater changes of achieving the intended goals. Total Quality Management as a philosophy of continuous improvement, needs the practical tools and techniques for meeting and exceeding present and future customers' needs, wants and expectations (Sallis, 1993:34, Murgatroy and Morgari, 1993:167-170, Cullen and Hollingum, 1987:76-79).

To improve performance people need to know what to do, how to do it, have the right tools and techniques to do it, to be on current levels of achievement (Kani, 1995:3).

Quality tools and techniques are the means of identifying and creatively solving problems. One of the powerful aspects of TQM is bringing together a range of useful tools to implement its underlying concepts. However, the power of the tools can only be experienced by regular use. Most are simple and some, like brainstorming, are already in regular use. The important thing is to find the right tool for the job. Staff need to be trained in their proper use. There is often embarrassment in using such tools, but with practice they can become part of the decision-making culture of the institution (Sallis, 1993).

The following is a summary of TQM tools:

2.4.1 Tools

Brainstorming

Brainstorming is an ideal TQM tool. It is also enjoyable to use and productive. 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. Brainstorming does not provide objective assessment of a situation. As a result it needs to be used together with other tools. A team using brainstorming should follow some simple rules:

- ◆ be clear what the brainstorming is about;

- ◆ nominate someone to write the ideas down somewhere visible (a flip chart is ideal);
- ◆ list all ideas as they are expected;
- ◆ not to discuss or criticize ideas; and
- ◆ build on previous ideas.

Brainstorming can be either a structured or an unstructured activity. Structured involves every member of the team in turn giving ideas in rotation until the ideas run out. This forces everyone to take part. Unstructured simply allow people to express ideas as they come to mind. This method stimulates creativity, but it does enable the more vocal members to take control (Sallis, 1993).

Affinity networks

This technique is used when there is the need to group a large number of ideas, opinions or issues and to categorize them. The aim is to identify which ideas have more affinity than others and to group them accordingly. The affinity network makes use of creative rather than logical processes. It helps make order out of chaos and stops a team drowning in a sea of ideas (Sallis, 1993).

Fishbone or Ishikawa diagrams

This technique goes by a number of names including cause and effect, fishbone or Ishikawa diagrams. The technique allows a team to map out all the factors which affect the problem or a desired outcome. The mapping may best be carried out through a brainstorming session. The aim is to list all the factors which affect

the quality of a process and then to map the interrelationships between them. This tool is used when an institution or a team needs to identify and explore the possible causes of a problem or look for the factors which could lead to an improvement (Sallis, 1993). The Ishikawa diagram in figure 2.1 lucidly shows all the processes necessary for quality improvement

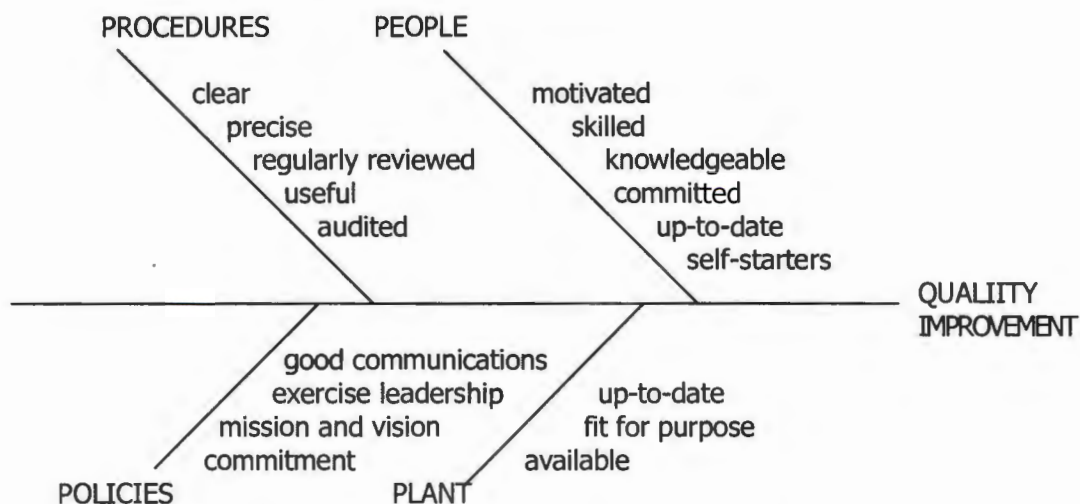


Fig 2.1 Ishikawa diagram (Adapted from Sallis, 1993 : 102).

Force-field analysis

Force-field analysis is a useful tool for studying a situation which requires change. It is based on the idea that there are two opposing forces to change. One set of forces is driving the change while the other set resists. It is a helpful tool because it promotes identification of all the forces which are involved.

Process charting

This technique can be used to ensure that the institution knows who its customers are and can identify the resources required to service them.

Flowcharts

Flowcharts are an important tool when a problem needs a systematic approach, or where an activity needs to be charted. They assist in identifying the steps in the process. They record the necessary sequence of stages, decisions and activities required. As part of an improvement process they provide a simple method of taking a critical approach to a problem. They also provide a clear and easily understandable diagrammatic representation of a process. Figure 2.2. shows a clear picture of the flowchart.

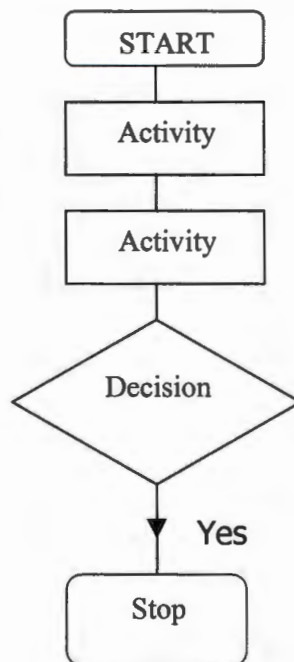


Fig. 2.2: Flowchart (Adapted from Sallis, 1993 : 104)

Pareto analysis

Pareto charts are named after the Italian economist Vilfredo Pareto. From this analysis he developed the famous Pareto Rule that 80% of problems arise from 20 percent of processes. Sometimes known as the 80/20 rule, the Pareto Rule is an important idea. If the 80

percent problem areas can be identified they should be tackled first in any quality improvement process. Effort should be put into the areas which cause the most difficulty. Pareto charts are simply special forms of vertical bar charts which assist in the solving of quality problems. Pareto charts direct attention to the most pressing problems facing a team or an institution (Sallis, 1993). Figure 2.3 gives a clear picture of the Pareto Chart.

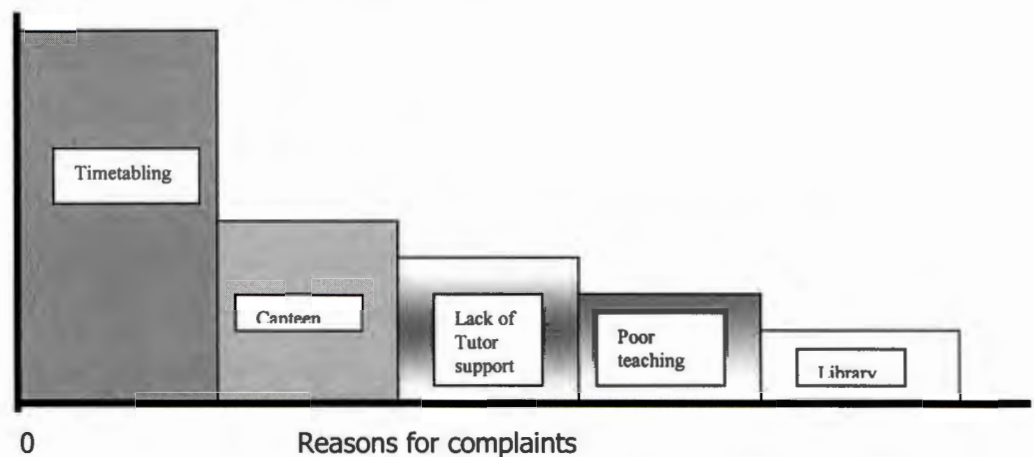


Fig. 2.3: Pareto Chart (Adapted from Sallis, 1993 : 105)

Benchmarking

A benchmarking is a standard against which to measure present performance. It is usually undertaken by seeking the best of the competition and understanding the way they produce quality. In manufacturing, benchmarking is a powerful tool in new product development. It involves evaluating any new product against that of the industry leader. It can be taken a stage further so that not only the product, but also the systems used to produce the product are compared.

Benchmarking is a means of establishing a competitive advantage. It is about finding out who is the best and seeking to better it. Benchmarking provides a means of learning from and doing better than the market leader. It can considerably speed the development of a new curriculum and assure that quality standards are built in at the planning stage.

The point of benchmarking is to ensure that your standards are at least as good if not better than those of your competitors.

In education there are various simple means of benchmarking which can be carried out as staff development exercises. Teachers can simply visit other institutions in their area and see how things are done. They can discover the best practice and ensure that theirs match it, and then seek to improve on it. The importance of benchmarking is that it saves re-invention (Sallis, 1993).

2.4.2 Characteristics of Total Quality Management (TQM)

Quality is, according to Stebbing cited by Van Dou (2000), a valuable criterion for gauging the effectiveness and efficiency of an action since it encompasses both outcome and process. Quality refers to features and characteristics of a service that bear on its ability to satisfy stated or implied needs (Rooney, 1988). TQM can be seen as an approach to improving quality. Quality management will include in its totality a continuous cycle of planning, training, actioning, monitoring, improving and reviewing the performance of an organisation (Stebbing, 1990).

Rooney (1988), stipulates the following as the characteristics of TQM:

- ◆ total commitment from all involved;
- ◆ active involvement of everyone throughout the organisation; and
- ◆ the breakdown of professional and functional barriers.

TQM has the following four main components:

- ◆ problem-solving the ability to break down complex series of issues to a set of manageable tasks requiring a solution, a decision, a plan or an idea;
- ◆ getting decisions right the first time - decision-making requires a method or organising information and evaluating the benefits and potential problem of each alternative;
- ◆ preventing problems through a process of analysis, potential and actual problems can be identified, assessed and eliminated or catered for by contingency planning; and
- ◆ establishing an innovative attitude, so that opportunities for making improvements can be identified.

2.5 Some general inhibitors to TQM implementation and success

Implementing TQM is essentially about improving all customer-supplier processes, with the consequence of enhanced performance as evidenced by hard and fast measures. Implementing TQM is not easy and the process of achieving the Hoshin goals and securing steep-slope quality improvement is long and often arduous: there are no short cuts for the development of teams, for training team members in the thinking skills and systematic tools required for effective TQM implementation (Murgatroyd and Morgan, 1993).

The experience of applying TQM to date suggests that there are four common problems in the start-up of TQM initiatives. These are: (i) lack of visible enactment by the senior staff of the school; (ii) poor plan for the deployment of TQM in the school; (iii) lack of adequate database on which to develop TQM initiations, and (iv) lack of appropriate skills within the organisation to secure TQM advantage (Murgatroyd and Morgan, 1993).

The following are the TQM start-up problems:

Lack of viable commitment by leaders when a principal/head teacher seeks to initiate change the critical question for staff concerns his or her level of commitment is measured in terms of visible and tangible things, not in terms of rhetoric. Staff will look to the behaviour and actions of the principal and the team rather than the words spoken. If they do not see in the behaviour of the top team a genuine and sustained commitment to quality, then it is unlikely to be produced from below. The behaviour that will be examined critically will include: (i) how quality is demonstrated in the way staff matters (recognition, rewards, promotion, workload allocations, etc.), are treated within the school, (ii) the extent to which data drive decisions in the organisation, (iii) the extent to which the skills required for TQM and the tools of TQM are demonstrated by the top team, and (iv) the way in which recognition and rewards are distributed in the organisation. If no substantial behaviour change is noticed, then TQM will be seen as a rhetorical programme, not an

action oriented programme. Where TQM is lived daily by the top team and all of their actions can be seen as TQM centred, then TQM will become well established in the organisation (Murgatroyd and Morgan, 1993).

2.5.1 Poor plan for TQM deployment

When TQM developments begin in an organisation there is often a focus on quickly forming teams and getting the teams to start to work. A number of problems then arise. These include: (i) just what should these teams focus on? (ii) do all teams need to do the same thing, or can teams work in their own way towards their quality goals? and (iii) do all the teams need to develop the same skills or can skill development be a team responsibility? These questions can delay effective implementation or stall it to a point where the team no longer functions.

The view of many TQM developers is that teams should form when teams are ready to form and that they should work on real problems that, if only they were dealt with, would make a substantial difference to the way in which the school works as a centre for learning and achievement (Murgatroyd and Morgan, 1993).

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2.5.2 Lack of data on which to build TQM initiatives

Many organisations and schools are shocked at how little they actually know about their operation in measurable terms. While

many collect a great deal of information, when they seek to use it to actually change the operation or affect behaviour within it, they find the data to be lacking or weak in some or several respects. For example, schools collect attendance data but experience suggests that this data is kept for one purpose (generalized record keeping) rather than for changing behaviour. Data should be designed as the primary mechanism for showing how a process operates and what the outcomes of the process are. Schools need to undertake a data audit of the available data and to look at what this data could be used for in terms of managing systematic change and quality improvements. In many cases they will be surprised at the paucity of the data available.

2.5.3 Lack of appropriate skills

TQM leaders in school systems are not 'seats of their pants' managers. They are strategically focussed leaders who use data to make decisions and seek to empower their staff. They have strong people skills, a strong ability to communicate vision, optimism and purposiveness.

This has a high level of tolerance for ambiguity, patience and integrity. They are respected both for what they themselves have achieved but, more importantly, for what they have enabled their staff to achieve. They are insightful about people and can demonstrate their trust in others through delegation. They do not panic easily, take a long-term view of issues and are not driven by expediency or opportunism. These are the leadership skills required

for effective TQM implementation.

The organisation also needs to develop other skills. First, there needs to be a skill-set within the school that enables the staff to go beyond the 'quick fix' mentality and look at the medium to long term. This skill is referred to as 'sightedness' referring to short-sightedness (adopting quick fixed solutions that often fail) and long-sightedness (doing what is necessary now to aid the long-term achievement of goals). Staff within and outside the top team need to be long sighted. The school also need to develop critical thinking skills (Murgatroyd and Morgan, 1993).

2.5.4 Barriers to be overcome when implementing Total Quality Management (TQM) in schools

TQM is a whole-school, whole-staff, whole-issue strategy, which can be especially helpful in dealing initially with some long-standing problems. If presented solely in terms of the long-standing problems, then TQM will be seen as the solution box for these problems and not as a general way of working (Murgatroyd and Morgan, 1993). Sallis (1996) states that TQM is hard work. It takes time to develop a quality culture. Hard work and time are two of the most formidable blocking mechanisms to quality improvement. TQM needs a champion in the face of the myriad of new challenges and change facing education. Quality improvement is a fragile process. Cultures are essentially conservative and homeostasis is the norm. Most staff is most comfortable with what they know and understand. However, to stand still while

competitors are improving is a recipe for failure Sallis (1996).

If TQM is to work, it must have the long-term devotion of the staff of the institution. They must back it and drive it (Van Dou, 2000). Management may themselves be the problem. They may want the results which TQM can bring, but be unwilling to give it their wholehearted support. Many quality initiatives falter because managers quickly return to traditional ways of managing. Fear by managers of adopting new methods and approaches is a major barrier. This is potentially the most serious of blockages. If management does not give TQM their backing, there is little that anyone else in the organisation can do (Sallis, 1996).

The sheer volume of external pressures also stands in the way of many organisations attempting TQM. Although quality programmes are introduced with considerable publicity, too often they can be overtaken and submerged by other initiatives. There is a need to ensure that despite other pressures, quality always has an important place on the agenda. This is where strategic planning plays such an important role. If TQM is firmly a part of the strategic role of the institution, and if there are good monitoring mechanisms in place, then there is a good chance that quality will keep a high profile. This makes it harder to ignore, and increases the chances of it being taken seriously (Sallis, 1996).

The strategic plan can help staff understand the institution's mission because it helps to bridge gaps in communication. There is a need for staff to know where their institution is going and how it will be

different in the future. Management must trust their staff sufficiently to share their vision for the institution's future. Visions are often not shared because of a fear of a loss of status and disempowerment by managers. When coupled with a fear of delegation by managers this can make quality development nearly impossible. Managers have to be able to let their staff take decisions and be willing to see them make honest mistakes (Schmoker, 1993).

A potential problem area in many institutions is the role played in it by management. They have a pivotal role because they both maintain the day-to-day operation of the institution and act as one of its most important communications channels. They can often block change if they have a mind to or they can act as the leaders of teams spreading the impetus for quality improvement. Manager may not define their role as one of innovation unless management communicates to them their vision of a new future (Schmoker, 1993). Managers must be consistent in their behaviour when advocating and communicating the message of quality improvement. They cannot say one thing and do another and then expect to engender enthusiasm among their staff or loyalty and commitment. They have to persuade others that new working methods will pay dividends (Schmoker, 1993).

Barriers to quality are not the sole prerogative of managers. Many staff members fear the consequences of empowerment, especially if things go wrong. They are often comfortable with sameness. They need to have the benefits demonstrated to them. For this reason

TQM must avoid being about nothing but jargon. This can easily lead to TQM involving an element of fear and uncertainty. Fear of the unknown, of doing things differently, of trusting others, and of making mistakes, are powerful defence and resistance mechanisms. Staff cannot give off their best unless they feel that they are trusted and their views are listened to. Deming argues that it is essential when undertaking the quality revolution to 'drive out fear' (Sallis, 1996).

2.6 THE TOTAL QUALITY MANAGEMENT PHILOSOPHY'S ORIGIN

The TQM philosophy emerged under W. Edwards Deming's guidance whom many regard as the father of what is now known as TQM. The broad goal of TQM is continuous improvement. Deming believed the responsibility for quality should be shared by everyone in an organisation (Berk, 1993).

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The study of TQM as a discipline can be traced at least to the period just after the second world war in Japan. The TQM "gurus", who inspired it and sustained it were among others, W.E. Deming, Joseph Juran and Philip B. Crosby (Bonstingl, 1992, Holt, 1993, Schargel, 1996). The TQM ideas of Deming and Juran were initially ignored by the Americans in the 1950's and 1960's when their businesses were booming (Bonstingl, 1992; West Burnham, 1992 and Sallis, 1993). The dramatic loss of the market share by American industry in the 1960's provided the impetus for the adoption of TQM. The Americans saw TQM as the answer to boosting their market share (Schargel, 1996).

2.6.1 Models of Total Quality Management in Schools

Three of the most important models of quality management are those of W. Edwards Deming, Joseph Juran and Philip B. Crosby. These quality “gurus” concentrated on quality in the manufacturing industry, although all claim that their ideas are equally applicable to service industries. None of them has given much consideration to quality issues in education. Nevertheless, their contribution to the quality movement has been so great that it is difficult to explore quality without recourse to their thinking (Arcaro, 1995).

When discussing the ideas of Deming, Juran and Crosby, it is necessary to realize that their approaches have their limitations and drawbacks, especially as they were developed in an industrial context. Even so, they are illuminating and can provide direction. There is much that can be learnt from them and be readily adopted to education. There is much overlap in their thinking and their general conclusions complement each other (Sallis, 1996).

2.6.1.1 W.E. Deming's fourteen points for management

Deming's view is that the cause of inefficiency and poor quality is the system, not the employees. It is the responsibility of the school management to correct the system to achieve the desired results.

Bergman and Klefsjo (1993) discuss the application of Deming's fourteen points to improve the quality of education as follows:

Create constancy of purpose for improvement of product and service

Schools must focus on helping students to maximize their own potential through continuous improvement of teachers and students work together. Maximization of test scores and assessment symbols is less important than the progress inherent in the continuous learning process of each student.

Adopt the new philosophy and abandon traditional ways of working.

School teachers must adopt and fully support the new philosophy of continuous improvement through greater empowerment of teacher-student teams. Cynical application of the new philosophy, with the sole intent of improving district-wide test scores, destroys interpersonal trust which is essential to success.

Move from inspection to building quality into every product and process.

Reliance on tests as the major means of assessment of student production is inherently wasteful and often neither reliable nor authentic. It is too late at the end of the unit to assess students' progress if the goal is to maximize their productivity.

Tests and other indicators of student learning should be given as diagnostic and prescription instruments throughout the learning process. Learning is best shown by student performance, applying information and skills to real life challenges.

Students must be taught how to assess their own work and progress if they are to take ownership of their own educational processes.

Stop awarding contracts on the basis of lowest bid-specify and buy quality.

Build relationships of trust and collaboration within the school and between school and the community. Everyone's roles as supplier and customer must be recognized and honoured. Work together whenever possible to maximize the potential of students, teachers, administrators and the community.

Engage in a process of continually improving every aspect of company activity.

School administrators must create and maintain the context in which teachers are empowered to make continuous progress in the quality of their learning and other aspects of personal development, while they learn valuable lessons from failures.

Use work based training techniques

School leadership must institute programmes of training for new employees unfamiliar with the specific culture and expectations of the school. Effective training programmes show new teachers how to set goals, how to teach effectively, and how to assess the quality of their work with students.

The emphasis for leaders and managers must be on quality, not quantity

School leadership consists of teachers, students and members of the community as coach and mentor. The organisational context in which all students growth and improvement is valued and encouragement can be maximized by teachers and students, parents and community members who support the common effort. Leading is helping, not threatening or punishing.

Drive out fear by improving communication

Fear is counter-working with production in school as it is in the workplace. Fear is destructive for the school culture and everything that is intended to take place within it. Institutional changes must reflect shared power, shared responsibilities and shared rewards.

Break down organisation barriers

Teacher and student productivity is enhanced when departments combine talents to create more integrated opportunities for learning and discovery. Create cross-departmental and multi-level quality teams to break down role and status barriers to productivity. Teachers must also institute programmes which students learn how to set learning goals, how to be more effective in their school work and how to assess the quality of their own work. Teachers should show students by attitude and actions what a good learner is all about. Educators learn how to be educators from the modeling they receive as students.

Eliminate slogans and exhortations

Teachers, students, administrators, families and community members may collectively arrive at slogans and exhortations to improve their work together, as long as power, responsibility and rewards are equitably distributed. When educational goals are not met, fix the system instead of fixing blame on individuals.

Eliminate arbitrary numerical target

Assignments and tests that focus on numerical or letter symbols of learning and production often do not fully reflect the quality of students' progress and performance. When the grade becomes the bottom line product, short-term gains replace student investment in long-term learning, and this may prove counter productive in the long run.

Allow for pride of workmanship by locating responsibility with the worker

Teachers and students generally want to do work and feel proud of it. Schools must dedicate themselves to removing the systemic causes of teacher and student failure through close collaborative efforts.

Encourage education and self-development

All of the school's people benefit from encouragement. To enrich their education by exploring ideas and interests beyond the boundaries of their professional and personal worlds.

Create a management structure and culture that will drive the preceding 13 points

School personnel at all levels, including students, must put this new philosophy into action so it becomes embedded into the deep structure and culture of the school. Teachers and students alone cannot put the plan into effect. Constant top-level dedication to full implementation must be supported by a critical mass of school and community people to implement the plan and make it stick (Bonstingl, 1992).

2.6.1.2 Deming's PDSA Cycle Model

PDSA stands for Plan, Do, Study and Act. The concept came to industry from education, from no less an educator than John Dewey himself. Figure 2.6 shows the PDSA Cycle.

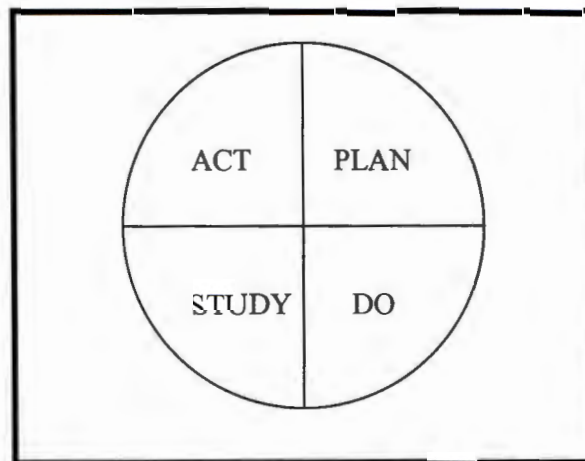


Figure 2.4: PDSA Cycle: (Adapted from Berry, 1991 : 46)

Step 1: Plan

This first step is developing a PLAN or process to study and analyse (for example, the way a lesson or unit is taught or an assessment process is developed). What can be done to improve it? Firstly you must organize the team to develop the plan. Thereafter determine what data you currently have, what additional data you need to assess the improvement, and possibly how the data will be used. You cannot proceed without a plan (Schmoker, 1993).

Step 2: Do

Carry out the plan, institute the improvement, preferably on a small scale or pilot basis (Schmoker, 1993).

Step 3: Study

Study or check the data on the effects of the improvement or innovation (Schmoker, 1993).

Step 4: Act

Act on what the pilot programme teaches you. Either institute the innovation on a permanent basis, discard the innovation, or go back to Step 1 by modifying or refining the innovation and gathering new data on its effectiveness as you make adjustment to it (Schmoker, 1993).

2.6.2 Juran's ten steps to quality improvement

Juran defines quality as 'fitness for purpose' and identifies the

principal outcome of quality management as reducing the cost of quality and increasing conformance. He identifies the following three important steps to quality improvement (West-Burnham, 1992):

- Step 1: Structural annual improvement plans;
- Step 2: Training for the whole organisation; and
- Step 3: Quality directed leadership

Juran lucidly summarized his principles of quality management into a series of epithets as follows:

Juran's ten steps to quality improvement (West-Burnham, 1992):

- Step 1: Create awareness of the need and opportunity for improvement
- Step 2: Set explicit goals for improvement
- Step 3: Create an organisational structure to drive the improvement process
- Step 4: Provide appropriate training
- Step 5: Adopt a project approach to problem solving
- Step 6: Identify and report progress
- Step 7: Recognise and reinforce success
- Step 8: Communicate results
- Step 9: Keep records of changes
- Step 10: Build an annual improvement cycle into all company processes.

Juran believes that the most quality problems can be traced back to management decisions. Since eighty five percent of an organisation's

quality problems are the result of poorly designated processes, putting the system right can often mean putting the quality right (Sallis, 1993).

2.6.3 Crosby

Crosby has been the quality magnate for nearly forty years. Crosby advocates that quality means conformance to requirements (Caroselli, 1991). West-Burnham (1992) proffers the notion that Crosby is best known for his four absolutes of Quality Management.

1. The definition - Quality is conformance to customer requirement not intrinsic goodness.
2. The system - Prevention, not detection.
3. The standard - Zero defects.
4. The measurement - The price of non-conformance.

From Sallis, (1993) cited by Phendla, (1995) Crosby's contribution on quality is the idea that quality is free. Quality is efficient and does not waste. His second idea is the notion that errors, failures, waste and delay can be totally eliminated if the institution has the will. Prevention is better than detection because it does not waste time. This is controversial notion of zero defects. Sallis (1993) claims that unlike Deming and Juran, Crosby does not believe in statistically acceptable levels of quality. For Crosby, there is only one standard, and that is perfection and zero defects or prevention model with a philosophy of delivering error free work.

Crosby's other gigantic contribution towards quality is his Improvement Programme based on fourteen steps which are a plan of action to attain quality. Adapted from Sallis (1993), the steps are as follows:

- ◆ **Management Commitment:** The quality initiative must be sanctioned and led by senior management.
- ◆ **Quality Improvement Team:** Sets and directs the programme which will be implemented across the organisation.
- ◆ **Quality Measurement:** It is important to be able to measure the current potential non-conformance in such a manner that it permits objective evaluation and corrective action.
- ◆ **The cost of quality:** The cost of quality consists of having to do things again, inspection, testing, scrapping and so forth.
- ◆ **Quality awareness:** Information about the quality needs to be communicated.
- ◆ **Corrective Action:** Supervisors need to work with staff to eliminate poor quality.
- ◆ **Zero Defects Planning:** Zero defects programme to be introduced and be led by the quality Improvement Team.
- ◆ **Supervisor Training:** Formal training for managers and middle managers to enable them to understand their role in the improvement process.
- ◆ **Zero Defects Day:** The day to highlight and celebrate the work being carried out on quality and to emphasize the management's commitment to it.
- ◆ **Goal setting:** The goals which teams set must be specified and measurable.

- ◆ Error Cause Removal: By designing a standard form to communicate difficulties with implementation to the management.
- ◆ Recognition: Recognition of staff's achievement and contribution is more important than the money they work for.
- ◆ Quality Councils: To monitor the effectiveness of the programme and to ensure that the improvement process continues.
- ◆ Do It Over Again: The quality programme never ends. Once goals are reached the programme needs to start over again.

This is the same as education, once the school has produced quality results they should maintain that quality and produce quality results over and over again.

Crosby (1979) cited by Caroselli (1991) believes in people being fanatics about their work and about satisfying the customer. Fanatics who, he claims, "leave footprints instead of just dust". Crosby's fanatics may be represented as follows:

- F - First, decide you want zero-defect strategy
- A - Announce a clear, specific quality policy.
- N - Next, display management commitment through action.
- A - Assure that everyone is educated so they can perform
- T - Then eliminate opportunities to compromise conformance.
- I - Insist that every supplier do the same.
- C - Convince everyone that they are dependent on each other.

The contribution made by the three quality gurus, introduced the Total Quality Management Vocabulary in both the private sector and

education. They played a pioneering role in quality improvement in different work stations. From these quality gurus, continuous improvement is the key in TQM. Quality improvement - methods advocated by Dr W. Edwards Deming, Kaoru Ishikawa, Joseph M Juran, P. Crosby and others brought a lot of success in various organisations and institutions. People following the quality principles are learning to work smarter - not harder. They have embraced the concepts behind the tenet, Quality is never the problem. Quality is the answer to our problems (Lutes, 2000).

2.7 AN OVERVIEW OF TQM RESEARCH IN DIFFERENT COUNTRIES

TQM was researched in many different countries in the world. This study will focus on TQM in Australia, America, Britain and South Africa.

2.7.1 Total Quality Management Research in Australia

In Australia, in 1966 Kew High School was the first school to be recognized in the Australian Quality Awards for Business Excellence process. Kew High School was awarded a certificate of Achievement. In the same year, Mr Geoff Spring, then secretary of the Department of Education in Victoria examined education reform in the USA, and noted the increasing application of Quality Management methods in the reform of education (King, 1999:4).

In term 3 of 1997 the Australian Quality Council started a two year Quality in school pilot project with 28 primary, secondary and special schools across three geographic regions in Victoria and formally concluded it in August 1999 (King, 1999:4). The Quality in schools initiative focussed on improving school efficiency and effectiveness in its core business, student learning. The first year of the pilot focussed on the leadership and management processes within the school. The second year brought the principles to bear on practice in the classroom (King, 1999).

These principles are derived from theory and experience, developed and tested over decades, applied in an amazingly diverse range of organisations. The following are principles developed by the Australian Quality Council (King, 1999:3):

- ◆ clear direction allows organisational alignment, and a focus on the achievement of goals;
- ◆ mutually agreed plans translate organisational direction into actions;
- ◆ understanding what clients value, now and in the future, influences organisational direction, strategy and action;
- ◆ to improve the outcome, improve the system and its associated processes;
- ◆ all people work in a system, outcomes are improved when people work on the system;
- ◆ effective use of facts, data and knowledge leads to improved decisions;
- ◆ all systems and processes exhibit variability, which impacts on predictability and performance;

- ◆ the potential of an organisation is realised through its people's enthusiasm, resourcefulness and participation;
- ◆ continual improvement and innovation depend on continual learning;
- ◆ the organisation's actions to ensure a clean, safe, fair and prosperous society enhance the perception of its value to the community;
- ◆ sustainability is determined by an organisation's ability to create and deliver value for all stakeholders; and
- ◆ senior leadership's constant role-modelling of these principles, and creation of a supportive environment are necessary for the organisation to reach its potential customer's goals.

Through Quality in schools, teachers learn to work with students to study and improve the system of student learning. This involves teachers assisting and encouraging students to take responsibility for their own learning, using standard quality improvement tools (King, 1999).

One of the greatest challenges of Total Quality Management in schools lie in helping students and teachers move from a "control" environment, where teachers are "all knowing" providers and the students passive recipients, to an empowered environment, particularly in the middle and senior years of schooling. In an empowered environment students become actively involved in the learning process through intrinsic motivation and trust. They are assisted in setting their learning and improvement goals, and provided with the means to evaluate and achieve them. The teacher plays an important role in mediating the students' learning (King, 1999).

2.7.2 Total Quality Management in America

In America and Britain Total Quality Management is being implemented to restructure and improve educational outcomes. The adoption of Total Quality Management as a vehicle to improve educational outcomes is largely due to successful results in practicing the TQM principles in both business and education. Today in both America and Britain, the constituency of public education is vocal about their schools excelling in their educational goals and doing so through cost effective measures (Weller & McElwee, 1997). In reforming schools to be TQM compliant educators are pressured to be cost effective. To be market competitive, customer needs and expectations, which reflect the value of the service and product, must be met. (Weller and McElwee, 1997). To be market competitive, educators must provide a quality education which is cost-effective. The 14 points of Deming's quality model provide a systematic, structured template to promote educational excellence and meet the demands of the external environment's social, political, and economic forces (Weller and McElwee, 1997).

TQM became the fiscal management philosophy which helped many Georgia School systems cope with their economic crisis by identifying areas of wasted resources and the inefficient use of human capital and in developing practices to turn ineffective, high cost programmes into efficient, low cost quality-producing operations (Weller, 1995). Chappel (1994) notes that the Deming quality principles are practised in over 400 public school districts with many of these districts using TQM to reduce costs and increase quality performance in administrative and business services.

Case studies in Alaska, New York, Texas and California, reported by Schmoker and Wilson (1993) cited by Weller and McElwee (1997) parallel the findings of Weller and Hartley (1994) and relate the highly successful outcomes of TQM regarding gains in student achievement scores for both at risk and traditional students, increased student self-esteem, and greater pride in doing one's best. Decrease in student dropout rates, student absenteeism, and cases of vandalism were also reported. Teachers have reported higher morale, enhanced self-concept, and renewed commitment to teaching through their participation on empowered teams. Schmoker and Wilson (1993) are cited by Weller and McElwee (1997) saying that TQM is not just another educational faddish scheme to cosmetically enhance the outcomes of schooling, but a management paradigm which really works. They state that the emphasis on customer satisfaction, continuous improvement, and the fourteen points provide a structured, systematic strategy for restructuring and constitute American educator's best hope to revitalize education.

Some American schools that registered great success through TQM are:

- Mt Edgecumbe High School
- Gilbert High School
- Schenley High School.



2.7.3 Total Quality Management research in Britain

British Educators, like their American counterparts, are concerned with producing quality learning at less cost. In Britain, the government's

pressure to produce more for less at the local level is constantly increasing, but at the same time pressure exists not to reduce, but to increase educational standards (Cullen and Hollingum, 1997).

Many applications of Total Quality are being reported across the U.K. These are spread across the spectrum of educational establishments. Often these initiatives came with different labels such as School Improvement or Effectiveness, but they embrace many of the underlying principles of Total Quality. Hamblett School in St Helens was one of the first special schools to officially introduce TQM (Brownlow, 1994). Many secondary schools in Britain have been making gains out of total quality.

Somervale Comprehensive School, Midsomer Norton, have been implementing total quality for years. They were supported by Avon Training and Enterprise Council, a Government funded organisation aimed at improving prosperity by increasing investment in education and training throughout the community. Somervale, exchanges students with Mt Edgecumbe High School, started with a strategic review involving all stakeholders, including students. This identified the critical processes for improvement. Improvement teams involving parents, teachers, support staff and students were established and facilitated through a cycle of Process Improvement (Marsh, 1993). A major breakthrough occurred when some teachers, support staff, student and parents went through a training process spread over six months to become facilitators. These people then went on to lead improvement initiatives in many areas. One of the most successful according to Marsh (1993), was the complete redesign of the process for reporting with parents and students.

There are many other examples of secondary schools implementing Total Quality Management across Britain. Another innovator is Westwood St Thomas School in Salisbury. They have used Total Quality Management to engage 150 stakeholders in Strategic Planning. They too use the tools in the classroom. Many companies in the UK have played a major role in the implementation of TQM in education. Leading Total Quality Companies such as Rank Xerox, ICL and the Royal Mail have been engaged in the implementation of TQM in their local schools. The Royal Mail has in fact sponsored the centre for Total Quality Management in Education and Community which exists to promote TQM nationwide. Other bodies such as local Educational Authorities and Training and Enterprise Councils have been acting as catalysts. The British Deming Association has taken the lead, mentoring many schools throughout Leicestershire (Davies, & West-Burnham, 1997).

2.7.4 Total Quality Management Research in South Africa

South Africa is currently faced with serious problems in schools. These problems have a lack of quality management as a common denominator (Steyn, 1995). The implementation of Total Quality Management in schools offers an approach to meet the ever increasing demands and emerging problems in schools (Steyn 1995).

To be service-minded in schools involves relating to and caring about the goals, needs, desires and interests of customers and going the extra mile to make sure that they are met (Whitaker and Moses, 1994:76).

2.7.4.1 Serious problems facing South African schools (Steyn, 1995)

- ◆ high dropout rate of pupils;
- ◆ a shortage of people who are trained in Science and technology;
- ◆ poor basic education;
- ◆ poor pupil performance;
- ◆ a desire on the part of the pupils to have their 'rights' protected;
- ◆ increasing concern that education does not equip children for employment;
- ◆ increasing demands for literacy;
- ◆ increase in industry expenditure on training which is seen as industry responding to the failure of schooling;
- ◆ same ideas were carried by Murgatroyd and Morgan (1993:6) when they include: Declines in pupil performance on some tests, showing that the system has performance weaknesses especially in USA. In addition to the above problems by Steyn in South Africa, the other major problems as that of inadequate educational resources in schools, more especially black schools, unemployment also contributes to problems in South Africa because some children cannot afford school fees at well resourced schools, pocket money or even bus fares.

The South African Education department is trying its best to come out with best quality practices that will help to improve the quality of education in the country. The Government introduced the following to uplift quality levels:-

- ◆ Quality Education for Life Long Learning
- ◆ Batho-pele (People first)

2.7.4.2 Quality Education for Life Long Learning

Through Quality Education for Life Long Learning, the Department of Education is committed to:

- ◆ address the education and training needs of all learners by consistently delivering a quality service in a cost effective way and implementing redress and caring for our clients;
- ◆ communicate with our clients, stakeholders and among ourselves in an honest, responsible and transparent manner;
- ◆ develop and maintain high standards of performance and foster innovation, responsiveness and competency;
- ◆ realise our vision and mission through loyal, professional and disciplined performance in our respective roles;
- ◆ appreciate each others' talents, skills, needs and contribution in a dynamic and competitive Department that celebrates personal growth and development and honest feedback on performance;
- ◆ empower staff members to perform their tasks through meaningful delegations of powers, functions and duties as well as effective planning and change management; and
- ◆ optimally utilise and care for departmental assets (Department of Education Document, 1999).

2.7.4.3 Batho-pele -People first

The primary customers of Batho-pele are:

Learners, Educators, School Governing Bodies, Parents, Communities, Business Sector, NGO's and Civil Organisations.

The key guiding principle is: "Service to the People" - "A culture of customer care".

The Department of Education is committed to Eight Principles of Batho-Pele.

They are:

- ◆ Consultation: People shall be the central focus. They shall be consulted at least once a year about the level and quality of the public services they receive. They should be asked about any basic services they would like to have.
- ◆ General Service Standards: The Department is committed to promoting quality service. Quality service will be: "What our customers think quality service is".

All sectors of the Department shall deliver their services professionally, ethically and transparently.

- ◆ Access: Building and refurbishing of schools.
- ◆ Information: Provision of information to customers about services rendered. Department will ensure cascading of information;
- ◆ Courtesy: Professional ethics and a code of conduct to be observed;
- ◆ Openness and transparency: Customers to be given correct information about how the Department is run

- ◆ Complaints and redress: Systems for dealing with complaints and redress to be in place. The customers have a right to complain about poor services, services failing to meet promised standards;
- ◆ Value for money: the department is concerned with the utilization and maintenance of departmental assets. It focusses on the cost of effective delivery of services to all departmental institutions (Batho Pele document: 2001).

2.8 SUMMARY

This chapter lucidly epitomised the literature review that relates to Total Quality Management as a tool to improve the quality of education results in Atamelang District of Education. It tapped on philosophies and ideologies propounded by TQM 'gurus' like W.E. Deming, J. Juran and P.B. Crosby. The chapter highlighted the way in which various institutions in different countries benefited from the implementation of TQM, e.g. the Mt. Edgecumbe High School in America, the Westwood St. Thomas School in Britain and the Kew High School in Australia. The chapter also addressed TQM in South Africa by Steyn. All TQM implementation instruments, strategies, successes and failures were addressed. Everything that lead to quality education and that could help improve the quality of education in Atamelang District was discussed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the method of study. It explains the rationale behind the methodology employed in the study, how the study was conducted and steps taken to ensure the validity and reliability of the study.

3.2 RESEARCH TOOLS

According to Leedy (1993: 25), "The tools of research are merely ancillary to the ultimate goal of research itself: to derive conclusions from a body of disparate facts and discover that which was hitherto unknown". Leedy (1993) also argues that there are five general tools of research, and these are:

- ◆ Library and its resources;
- ◆ Techniques of measurement;
- ◆ Statistics;
- ◆ The computer and its software; and
- ◆ Facility with language: both English and required foreign language.

Some people do confuse research tools with methods and Leedy (1993: 26) says, "with research especially, we should be careful not to equate

the tools of research with the genre or methodology of research". He goes on to say, "tool is ancillary, the methodology is indigenous" (Leedy, 1993:26). The tool is what the research employs to amass data or manipulate it to extract meaning from it (Leedy, 1993).

3.3 RESEARCH METHODS

The methodology of research is the particular characteristics that the whole research project assumes because of its procedures or character of its data (Leedy, 1993). Methodology is an operational framework within which the facts are placed so that their meaning may be seen more clearly (Leedy, 1993). Research methodology helps to explain what the nature of the data is, and what method you used to process them to arrive at your conclusions. A pragmatic presentation regarding the data may be perhaps most expeditiously handled by spelling out, in concise detail, four principal items with respect to the data:

- ◆ What data do you need?
- ◆ Where is the data located?
- ◆ How do you intend to get the data?
- ◆ Precisely and in detail, what do you intend to do with the data (Leedy, 1993).

In this chapter the following research methodology instruments will be discussed:

- ◆ Questionnaire
- ◆ Population and Sampling

- ♦ Data analysis techniques (Leedy, 1993).

3.3.1 QUESTIONNAIRE AS A RESEACH INSTRUMENT

Leedy (1993: 187), says "data sometimes lie deep within the minds or within the attitudes, feelings, or reactions of men and women. A common place instrument for observing data beyond the physical reach of the observer is the questionnaire". The questionnaire will be used as a data collection instrument in this study. The mail questionnaire will be the best form of survey in carrying out this educational enquiry. According to Legotlo, cited by Van Dou (2000), the questionnaire is the most important device which enables respondents to answer questions. It is a means of communication between the respondents and the research.

Questionnaires are designed to fulfil a specific research objective (Leedy, 1993).

3.3.1.1 Advantages of a questionnaire

The questionnaire will be employed because of the following advantages propounded by Legotlo as cited by Van Dou (2000):

- ♦ Low unit cost: travelling and subsistence costs are minimal;
- ♦ Homogeneous stimuli: the stimuli provided are identical since questionnaires are identical;
- ♦ Anonymity of respondents: the respondents names are not given;

- ◆ Speed: information from any respondents could be obtained within a month; and
- ◆ Ease of processing: the questionnaire could be carefully structured and processed, and very few open-ended questions are used.

3.3.1.2 Disadvantages of questionnaires

Like other strategies for data collection, the mail questionnaire has some disadvantages such as:

- ◆ Representativeness, high non-response rate is common;
- ◆ Impersonal: may cause frustration to some respondents;
- ◆ Negative attitude to the questionnaire
- ◆ Availability of address of the sample population poses some problems.

Despite these disadvantages, the mail questionnaire is still commonly used to collect data. Researchers have identified a number of factors and several aspects of design and layout in securing a good response rate to a postal questionnaire (Cohen & Manion, 1985: 105; Borg & Gall, 1989: 430) and these are:

- ◆ The appearance of the questionnaire is vitally important. It must look easy and attractive;
- ◆ The language must be unmistakably clear. Communication is a deceptive skill. What may be crystal clear to you may be so

much meaningless jargon to another person (Leedy, 1993: 187);

- ◆ Contents of the questionnaire should be arranged in such a way as to maximise co-operation;
- ◆ The practice of sub-lettering questions is a useful technique for grouping together;
- ◆ Questions to do with a specific issue; and
- ◆ The wording of the self -completion questionnaire is of paramount importance and that pre-testing is crucial to its success.

3.3.2 QUESTIONNAIRE CONSTRUCTION

A well -designed questionnaire boosts the reliability and validity of the data to acceptable level of tolerance (Borg, 1987). Some basic rules for constructing a questionnaire as propounded by Borg and Gall (1989: 430 -431) are:

- ◆ Clarity, items should mean the same to all respondents;
- ◆ Short items are preferable;
- ◆ Negative items should be avoided;
- ◆ Double-barrelled items which require the subject to respond to two separate ideas with a single answer should be avoided;
- ◆ Biased questions are to be avoided; and
- ◆ Questionnaire must be brief.

3.3.2.1 The questionnaire items

The questionnaire instrument will be used to glean data on educators' perception and how Total Quality Management (TQM) can be used as a tool to improve the quality of education in Atamelang district secondary schools.

The instrument will also help to determine:

- ◆ the role played by the school management to improve the quality of education and results in schools, particularly matric results;
- ◆ support from the provincial and national education departments;
- ◆ knowledge of Total Quality Management guiding principles;
- ◆ implementation of Total Quality Management in schools;
- ◆ commitment and involvement of the school management in the quest for quality education; and
- ◆ the goals and objectives of the school management to improve quality education.

In this study, the questionnaire was used to access data from the respondents. The population comprises of two hundred and fifty respondents. From the respondents' answers the

researcher will determine how Total Quality Management (TQM) can be used as a tool to improve the quality of education in secondary schools.

3.3.2.2 Format and content of the questionnaire

The format of the questionnaire will be based on the types of questions asked to the respondents by the researcher. The questions will be based on sections, e.g. A, B, and C.

SECTION A: Gathers information about biographical and demographical information of respondents.

SECTION B: Gathers information about TQM knowledge of respondents.

Questions also focus on Total Quality Management as a tool to improve the quality of education in schools. Respondents will be exposed to a four point scale on their response to the following:

- ◆ Total Quality Management as a tool to improve the quality of education
- ◆ the role of school management to improve the quality of education, and
- ◆ implementing TQM in schools.

The four point scale was as follows:

1 = strongly disagree

- 2 = disagree
- 3 = agree
- 4 = strongly agree

SECTION C: Focuses on commitment and involvement of the school management and teachers in the quest for quality education. In this section teachers and school management were exposed to questions that searched for their management strategies and techniques to bring about better performance or to improve the quality of their clients.

Open-ended questions on what affects the quality of education results in schools were asked to respondents. The two point scale was as follows:

- 1 = Disagree
- 2 = Agree

3.3.3 QUESTIONNAIRE PRETESTING

A pilot study was conducted with the intention of making the researcher aware of the flaws and problems that need attention before the major study. This gives the researcher an opportunity to pre-test the instrument. The major purpose of the pilot-study was to detect the problems that must be solved before the major study (Legotlo, 1996).

To determine the areas that need attention, the questionnaire was pre-tested using the sample of twenty people ($n = 20$), six (6) principals,

four (4) deputy principals, six (6) heads of departments and four (4) educators (teachers). The twenty respondents were asked to comment on the structure and questions of the questionnaire instrument. The pre-test results were checked and the suggestions made by the respondents were taken into consideration to improve the questionnaire. The final questionnaire was administered to 250 educators.

Of the 250 questionnaires administered, only 199 usable questionnaires were returned.

3.3.4 COVERING LETTER

According to Leedy (1993:190), the letter "should be carefully and thoughtfully structured, and it should stress the concerns of the person receiving the letter". The covering letter is employed to introduce the questionnaire to the respondents. The purpose of the covering letter is to indicate the aim of the survey, to convey to the respondents its importance, to assure them confidentiality and encourage their participation (Cohen and Manion, 1980:110). The covering letter gives the respondents the direction to complete the questionnaire and guarantees anonymity (Borg and Gall, 1989:436).

A covering letter (Appendix C) that explained the purpose of the study accompanied the questionnaire instrument to the respondents.

3.4 FOLLOW UP

In most instances follow up is determined by the nature of response by respondents. Non-response is a major disadvantage of the questionnaire. Follow-up is a major advantage of the questionnaire. Follow-ups are important in maximising response levels. A follow-up is sometimes intended to see if respondents are really committed in completing the questionnaire.

3.5 POPULATION AND SAMPLING

Population sample was drawn from the Atamelang Education District secondary schools. From the list of sixteen (16) secondary schools and a total number of three hundred and two (302) educators, the first two hundred and fifty (250) educators were exposed to questionnaires. Of the two hundred and fifty (250), one hundred and fifty six (156) were ordinary teachers, while ninety four (94) represented the management team.

In this study management team refers to those teachers in senior positions, that is HOD's, deputy principals and principals. These educators were randomly picked up from the secondary schools in the district.

3.6 STATISTICAL TECHNIQUES

3.6.1 Descriptive Data

The descriptive data method concerns itself largely with what the researcher sees, observes, with what can be described in words and can be concluded from those words (Leedy, 1993:248). It is one of the ways of arriving at the truth.

A computer aided statistical analysis was employed. The SSPS-programme was used to compute the results of the study. The first step in the analysis was to compute descriptive data for each respondent in the study. These included statistics like frequency distribution, percentages, mean and standard deviation.

3.6.2 Quantitative Data

In the quantitative study, data is analysed statistically so that we may infer meaning that lie hidden within the data, or discern certain potentials and dynamic forces that may be clues to areas that warrant further investigation. Questionnaire method is concerned primarily with problems of estimating and with testing statistically based hypothesis (Leedy, 1993:251).

In this study, to determine the principal significance and statistical significance between group means, the chi-square was computed. (The x-value will be discussed in the next chapter). A test of statistical significance was done to determine whether the null hypothesis can be rejected (Borg and Gall, 1989). The second test

was used to determine the level of statistical significance of an observed difference between sample means.

3.7 SUMMARY

This chapter succinctly highlighted the instruments to be used in the research. It lucidly outlined the research methodology and also gave clear guidelines on the way in which data will be analysed.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The purpose of this chapter is to present the findings of the research study. It reports on the empirical investigation of Total Quality Management as a tool to improve the quality of results in the Atamelang District Secondary schools in the North West Province. The chapter lucidly epitomizes the results of qualitative and quantitative data collected. Data in this chapter will be presented in tables, graphs and written texts.

4.2 REVIEW OF DATA COLLECTION INSTRUMENT

Data to be presented was amassed through the utilisation of the questionnaire instrument.

Out of 250 questionnaires distributed to respondents, only 199 usable questionnaires were returned. The questionnaires were completed by principals, deputy principals, heads of departments and teachers.

4.3 DEMOGRAPHIC DATA OF RESPONDENTS



Table 4.1 below succinctly highlights the demographic characteristics of the respondents. The information on the table lucidly outlines who the

respondents are, what positions they occupy, number of years in that position, their experience in work, their qualifications and their schools' enrolment. This information highlights the similarities and differences between groups of respondents.

TABLE 4.1 DEMOGRAPHIC DATA OF RESPONDENTS

		F	%
1. Age groups of respondents in years.	Below 30	40	20.2
	31-35	102	51.5
	36-40	38	19.2
	41-45	11	5.6
	46-50	3	1.5
	51 & above	4	2.0
Total		198	100
2. School enrolment	Under 200	13	6.6
	201-400	44	22.4
	401-600	61	31.1
	601-800	32	16.3
	801-1000	31	15.8
	Over 1000	15	7.7
Total		196	100
3. Teaching experience (in years)	Below 4	11	5.5
	5-8	92	46.2
	9-12	61	30.7
	13-16	20	10.1
	17 & above	15	7.5
Total		199	100
4. Position held in school	Principal	14	7.0
	Deputy Principal	11	5.5
	H.O.D.	42	21.1
	Educator	132	66.3
Total		199	100
5. How long in position	Below 1 yr	9	4.5
	1-3 yrs	42	21.2
	4-5 yrs	48	24.2
	Over 6 yrs	99	50.0
Total		198	100
6. Highest academic qualification	Diploma	116	58.6
	Degree	49	24.7
	Honours	23	11.6
	Masters	8	4.0
	Other	2	1.0
Total		198	100

4.3.1 Age of respondents

From the data collected it is noted that 102 (51,5%) of the respondents were between 31 and 35 years old and 40 (20,2%) were below 30 years. This suggests that the secondary schools in Atamelang districts are mainly populated by young educators. From the total population of 198 respondents, 142 (102 + 40) of them are below the age of 35 years. It is only 4 (2,0%) respondents who are at the ages of 51 and above. The age category of respondents therefore suggests that the majority of them have many years of teaching experience. Their views can be appreciated and be implemented.

4.3.2 School enrolment

Respondents were asked to indicate students' enrolment in their schools. It is indicated on table 4.1 that 61 (31,1%) respondents are attached to schools with the enrolment of 401-600, while 15(7,7%) respondents are in schools with enrolment of over 1000. It is evident that most educators are in schools with a manageable student population.

4.3.3 Teaching experience of respondents

The respondents were asked to provide information about their teaching experience. Table 4.1 shows that 92 (46,2%) of the respondents had 5 to 8 years experience while 15 (7,5%) had 17

years and above. From the 92 educators with 5 to 8 years experience up to those with 17 years and above (total of 188 educators), it is evident that they are experienced enough to provide relevant information for TQM implementation in schools. They also possess vast knowledge of why learners fail and what quality education is. Surely, with their experience they have solutions to problems in their schools, but their problem is how to implement those solutions.

4.3.4 Position held in the school

The statistics on table 4.1 item 4 lucidly show that almost all the secondary schools in the Atamelang district have principals. Out of 16 secondary schools 14 respondents indicated to be principals. Some schools (11 of them) have deputy principals and the data also indicates that there are heads of departments. About 132 (66,3%) are educators. This suggests that the Atamelang district secondary schools have all relevant school structures, e.g. principals, deputy principals, heads of departments and teachers to successfully implement TQM and produce quality education.

4.3.5 Number of years in the position occupied

The respondents were asked to indicate their number of years in the position they are occupying at present. Table 4.1 item 5 shows that 99 (50%) respondents have over 6 years in their positions. This coincides with the teaching experience of respondents where it was found that the majority of them had 5 to 8 years experience. This

also marks how strong they can be in influencing rightful decisions.

4.3.6 Highest academic qualifications of the respondents

Questionnaire respondents were asked to state their highest academic qualifications. Table 4.1 item 6 lucidly shows that 116 (58,6%) had diploma as the highest academic qualification. Only 49 (24,7%) of respondents have first degrees, 23 (11,6%) have indicated to be having honours and 8 (4,0%) indicated to be having masters postgraduate degrees. The academic qualifications of the respondents could have a positive influence on the implementation of TQM in schools, because some of the educators have done an intensive study of the modern methods of management and planning. Some also have knowledge of Total Quality Management.

4.4 TOTAL QUALITY MANAGEMENT AS A TOOL TO IMPROVE THE QUALITY OF EDUCATION

The main focus of this study is to determine how Total Quality Management can be used as a tool to improve the quality of education in the Atamelang district of North West Province secondary schools. The variables considered in the study were perceptions on, factors contributing to the implementation of Total Quality Management in secondary schools. School management: participation is promoting - quality and also involvement of school management and educators in improving the quality of matric results in the district are factors to be

considered in this study. Section 4.4 will address respondents' views of summarised factors and variables.

Table 4.2 lucidly epitomizes respondents' views on how Total Quality Management can be used as a tool to improve the quality of education. The four point scale was used to capture respondents' views of how Total Quality Management can be used as a tool to improve the quality of education. Example of four point scale used:

- (1) = SD: Strongly disagree
- (2) = D: Disagree
- (3) = A: Agree
- (4) = SA: Strongly agree

A summary of Table 4.2 is given below the table.

Table 4.2 TQM as a tool to improve the quality of education

	SD		D		A		SA
	F	%	F	%	F	%	F
7.1 TQM is creating a quality culture where the aim of every member of staff is to delight their customers (learners)	2	1.0	12	6.1	101	51.3	82
7.2 Total Quality Management is a philosophy of continuous improvement by institutions practicing it.			14	7.1	89	45.4	93
7.3 Total Quality Management requires efforts of the entire team (universal responsibility).	1	.5	7	3.6	41	21.0	146
7.4 Total Quality Management advocates encouragement and enabling rather than command, control and compliance.	6	3.0	9	4.6	61	31.0	121
7.5 Quality education can be achieved through implementation of TQM in all schools			10	5.0	59	29.6	130
7.6 Total commitment and continued support by top school administration are crucial to the success of TQM.	3	1.5	13	6.6	65	33.0	116
7.7 Within TQM approach the level of trust and mutual respect coupled with the extent of the shared values and vision, are powerful and valued.	5	2.6	15	7.7	63	32.1	113

Keys: SD = Strongly Disagree, D = Disagree, A= Agree,

SA = Strongly Agree

Item 7.1 Total Quality Management is creating a quality culture where the aim of every member of staff is to delight their customers (learners).

Table 4.2 shows that 51% of respondents agree that Total Quality Management is creating a quality culture where the aim of every member of staff is to delight their customers (learners) (cf. 2.3.1.2; 2.6.1.1). 41,6% also strongly agreed to the latter statement. It is just 1% which strongly disagreed with the statement. The 51% and 41,6%

is an indication that the majority of respondents see TQM as a good tool for improving the quality of education.

Item 7.2 Total Quality Management is a philosophy of continuous improvement by institutions practicing it.

About 47,4% of respondents strongly agreed that TQM is a philosophy of continuous improvement by institutions practicing it. The same thinking is also entertained by 45,4% of agreeing respondents. A handful of 7,1% disagreed. This possible explanation for this finding is that the majority of respondents align themselves with the broad goal of TQM which is continuous improvement. The meaning agreeing to continuous improvement in education quality for better achievement by learners (cf. 2.2.1; 2.4).

Item 7.3 Total Quality Management requires efforts of the entire team (universal responsibility).

The majority of respondents (74,9%) strongly agreed that Total Quality Management requires efforts of the entire team (universal responsibility). Only (0,5%) of the respondents disagreed. This tool strongly agreed to by an overwhelming majority of respondents shows their understanding of team work. Katzenbach and Smith (1993:45) see a team as a "... number of people with complementary skills who are committed to a common purpose, performance, goals, and approach for which they should hold themselves accountable" (cf. 2.3.2.2; 2.3.2.3; 2.6.1.1; 2.7.1).

Item 7.4 Total Quality Management advocates encouragement and enabling rather than command, control and compliance.

Table 4.2 Item 7.4 lucidly indicates that 61,4% of respondents strongly agree that Total Quality Management advocates encouragement, empowerment and enabling rather than command, control and compliance. About 31,0% agree and only 3,0% strongly disagree. The 61,4% (SA) and 31,0% (A) response indicate that they are in line with management advocating encouragement, empowerment and enabling and dislikes command, control and compliance (cf. 2.7.1; 2.3.1.4; 2.6.1.1).

Item 7.5 Quality education can be achieved through implementation of TQM in all schools.

Quite a larger number of (65,3%) respondents strongly agree to quality education through the implementation of TQM in all the schools. This is also supported by 29,6% respondents who agree to the same idea. Only 5% of respondents did not align themselves with the idea. They disagree that quality education can be achieved through implementation of TQM in all schools. This indicates that TQM should be implemented in schools for quality education to be achieved (cf. 2.5.4).

Item 7.6 Total commitment and continued support by top school administration are crucial to the success of TQM.

About 58,9% of respondents strongly agreed that total commitment and continued support by top school administration are crucial to the success

of TQM. 33,0% of respondents also agree to the latter statement. Only 1,5% of respondents strongly disagree. The captured 58,9% and 33,0% of positive respondents is an indication that both commitment and continued support by top school administration are integral parts of the learning process and the system cannot survive without them (cf. 2.3.1.1; 2.3.2.2; 2.4.2 and 2.6.3).

Item 7.7 Within TQM approach the level of trust and mutual respect coupled with the extent of the shared values and vision, are powerful and valued.

In this item, 57,7% of respondents strongly agreed that within TQM approach the level of trust and mutual respect coupled with the extent of the shared values and vision, are powerful and valued. The latter idea is agreed to by 32,1%. About 7,7% disagree and 2,6% strongly disagree. The majority response shows that for people to be successful in their different workstations, the level of trust and mutual respect coupled with the extent of the shared values and vision are all needed (cf. 2.3.1.1). To be effective, educational institutions require processes for developing their quality strategy. These include: a clear and distinctive mission, clear vision, respect and trust.

4.5 THE ROLE OF THE SCHOOL MANAGEMENT TO IMPROVE THE QUALITY OF EDUCATION

Table 4.3 below illustrates respondents' views on the role of the school management to improve the quality of education. A summary of Table

4.3 is presented below the table.

TABLE 4.3 The role of school management to improve the quality of education

	SD		D		A		SA	
	F	%	F	%	F	%	F	%
7.8 The SM sees it to the vision and mission statement developed are implemented to the fullest.	6	3.0	16	8.0	73	36.7	104	52.3
7.9 The SM meets regularly with the staff to define their requirements and needs.	14	7.1	28	14.1	67	33.8	89	44.9
7.10 The SM encourages and empowers staff with quality management skills.	12	6.0	33	16.6	67	33.7	87	43.7
7.11 SM provides teachers with the subject content training (workshops) to improve quality teaching and results.	15	7.5	50	25.1	60	30.2	74	37.2
7.12 The SM is well supported by the department of education in its quest for quality education.	9	4.5	51	25.6	71	35.7	68	34.2
7.13 TQM will only work if there is observed commitment to quality by the management.	4	2.0	13	6.6	73	36.9	108	54.5

Keys: SD = Strongly Disagree, D = Disagree, A= Agree,

SA = Strongly Agree

Item 7.8 The school management sees to it that the vision and mission statement developed are implemented to the fullest.

On this variable of vision and mission implementation by school management, 52,3% of respondents strongly agreed that vision and mission are implemented to the fullest by the school management. A further 36,7% of respondents agreed on the very same variable, 3,0% strongly disagreed. Implementation of vision and mission statement of

the institution is in line with quality improvement. Continuous improvement will be attained when people always keep to the vision and mission of the institution.

Item 7.9 The school management meets regularly with the staff to define their requirements and needs.

About 44,9% of respondents strongly agreed that the school management meets regularly with the staff to define their requirements and needs. Some respondents (33,8%) agreed with the variable and 7,1% strongly disagreed. The 44,9% and 33,8% of responses show that the school management meets regularly to redefine needs. Literature supports the idea by stating that communicating strategies help institutions attain expected goals (cf. 2.6.1.1; 2.7.4 and 2.3.2.1).

Item 7.10 The school management encourages and empowers staff with quality management skills.

According to Table 4.3, 43,7% of respondents strongly agreed that school management encourages and empowers staff with quality management skills. About 16,6% disagreed and 6,0% strongly disagreed. Empowering educators means sharpening their skills for successful delivery. Empowered, encouraged and motivated educators will produce desired goals. The literature (cf. 2.5; 2.5.3; 2.3.1.4 and 2.6.1.1) is also emphatic on furnishing staff with skills for quality attainment.

Item 7.11 School management provides teachers with the subject content training (workshops) to improve quality teaching and results.

From table 4.3, it is noted that 37,2% of respondents strongly agreed that school management provides teachers with the subject content training (workshops) to improve quality teaching and results. A further 30,2% supported the idea. When 25,1% disagreed and 7,5% strongly disagreed. Training is advocated as one of the strongest pillars of TQM.

It is noted from this variable that the majority of respondents ($37,2 + 30,2 = 67,4\%$) see training as a vital tool in Total Quality Management.

Some schools see workshops as a waste of time and principals do not encourage educators to attend (cf. 2.3.1.4; 2.6.1.1; 2.6.2).

Item 7.12 The school management is well supported by the department of education in its quest for quality education.

In this item, 34,2% of respondents strongly agreed that the school management is well supported by the department of education in its quest for quality education. About 35,7% strongly agree when 25,6% disagree and 4,5% strongly disagree. Government support is vital at all times and there is no public educational institution which can survive without it. Quality education is to be preached and supported by the department of education senior officials. The majority of responses in line with the variable in this item showed a clear understanding of government involvement in education. Perhaps those not in line with the variable (strongly disagree and disagree) are dissatisfied and disappointed with the support they get from the government. Some schools are truly lacking in resources. The literature stated that other

countries like Britain finance TQM in schools. The government and private companies sponsor education to get desired goals (cf. 2.7.3)

Item 7.13 TQM will only work if there is observed commitment to quality by the management.

This item is supported by 54,5% of respondents who agreed that Total Quality Management will only work if there is observed commitment to quality by the management. Only 2,0% of respondents strongly disagreed. The possible explanation to this finding could be ascribed to the fact that management is to be the main pillar behind quality work. In some institutions the management lacks commitment to the extent that teachers are the only people committed. Everybody in every department in the institution must be committed to work for aspired results to be achieved. Literature consulted stresses that quality management requires a commitment from management for quality initiatives to succeed (cf. 2.3.1.1)

4.6 IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT IN SCHOOLS

Table 4.4 below illustrates views on the implementation of Total Quality Management in schools. A brief and lucid explanation of table 4.4 is given below:

Table 4.4 Implementation of TQM in schools

	SD		D		A		SA	
	F	%	F	%	F	%	F	%
7.14 It is necessary to identify a quality committee specifically responsible for driving the implementation process of TQM in schools.	4	2.0	14	7.1	98	49.7	81	41.1
7.15 The success of implementing TQM depends on training that will result in attitudinal change of educators.	1	.5	18	9.1	71	36.0	107	54.3
7.16 Implementing TQM in schools requires a commitment to creating an environment in which staff and students do their work best.	2	1.0	2	1.0	57	28.9	136	69.0
7.17 Success of TQM implementation will depend on one and honest talk.	1	.5	7	3.6	62	31.5	127	64.5
7.18 Government support, supply and intervention are needed for schools to successfully implement TQM.			3	1.5	48	24.4	146	74.1

Keys: SD = Strongly Disagree, D = Disagree, A= Agree,
SA = Strongly Agree

Item 7.14 It is necessary to identify a quality committee responsible for driving the implementation of Total Quality Management in schools.

About 41,1% of the respondents strongly agreed that it is necessary to identify a quality committee responsible for driving the implementation of Total Quality Management in schools. The explanation to this finding is that respondents realised that for quality to be achieved, there must be a quality committee with responsibilities such as:

- ◆ promoting the total quality approach;
- ◆ integrating the total quality approach;
- ◆ designating and delivering training (cf. 2.3.1.4);

- ♦ communicating progress to all staff (cf. 2.3.2.1; 7.4; 2.6.3); and
- ♦ monitoring and evaluating the implementation process (cf. 2.3.2.2).

This item was also agreed to by 49,7% of respondents. Only 2,0% of respondents strongly disagreed to the idea under item 7.14.

Item 7.15 The process of implementing TQM depends on training that will result in attitudinal change of educators.

Table 4.4 reveal that 54,3% of respondents strongly agreeing that the process of implementing TQM depends on training that will result in attitudinal change of educators. It was supported by 36,0% of respondents who agreed to the idea. Only 9,1% disagreed and 0,5% strongly disagreed. This finding agrees to the principle that, for goals to be attained people need to be enriched with new skills and a positive attitude towards work. A positive attitude towards the implementation of Total Quality Management will help bring desired results. Training is an important tool of Total Quality Management.

Item 7.16 Presenting Total Quality Management in schools requires a commitment to creating an environment in which staff and students do their work best (cf. 2.7.1.1; 2.6.2). Juran in his steps lucidly outlined training for the whole organisation.

According to Table 4.4, about 69,5% of respondents strongly agreed that implementing Total Quality Management in schools requires a commitment to creating an environment in which staff and students do their work best. From the table , 28,4% agreed, 1,0% disagreed and

1.0% strongly disagreed. This finding could be ascribed to the fact that commitment to work leads to goal attainment. A harmonious working environment with all people committed to what they do will help improve the quality of work (cf. 2.4.2).

Item 7.17 Success of Total Quality Management implementation will depend on open and honest talk.

About 65,0% of the respondents strongly agreed that success of Total Quality Management implementation will depend on open and honest talk. This was negated by 0,5% who strongly disagreed . A total of 31,0% agreed to table 4.4 item 7.17 contents. This finding indicates that the majority of respondents sees open and honest talk as best tools for improving the quality of work and also for success implementation of Total Quality Management (cf. 2.3.1; 2.6.1.1; 2.7.4). There is a need for a transparent communication.

Item 7.18 Government support, supply and intervention are needed for schools to successfully implement Total Quality Management.

The overwhelming majority of 74,1% respondents strongly agreed that TQM implementation needs government support, supply and intervention. Government needs to supply schools with resources for quality results to be obtained. Without government support in schools all the important programmes will collapse and quality results will not be achieved. About 24,4% agreed to government support and only 1,5% disagreed (cf. 2.7.3; 2.7.4).

4.7 QUALITY OF MATRIC RESULTS AND ROLES PLAYED BY THE EDUCATORS AND SCHOOL MANAGEMENT

In this section a two-point scale was used to answer questions related to the quality of matric results.

The following are the keys used:

1 = D: Disagree

2 = A: Agree

The respondents' views were displayed in Table 4.5 below.

Table 4.5 Quality of matric results and roles played by the educators and school management

	D		A	
	F	%	F	%
8.1 The quality of matric results in the district is below expectation level.	34	17.3	163	82.7
8.2 The SM is committed to the improvement of schools results including matric results.	44	22.2	154	77.8
8.3 TQM improvement strategies are needed to help schools gain better matric results.	3	1.5	195	98.5
8.4 Motivation, encouragement and commitment of learners could help improve the quality of results.	1	.5	197	99.5
8.5 Workshops on contents, methods and approaches could help improve the quality of education results.	5	2.5	193	97.5
8.6 Government intervention, through supply of teaching resources could help improve the quality of education.	5	2.5	193	97.5
8.7 Commitment of school managers in the running of the school is lacking.	80	40.4	118	59.6
8.8 Teacher's commitment and dedication are low.	95	48.0	103	52.0
8.9 The general work morale is low.	55	28.2	140	71.8
8.10 The school manager is the sole decision maker.	142	72.8	53	27.2

Item 8.1 The quality of matric results in the district is below expectation level.

Table 4.5 Item 8.1 shows that 82,7% of the respondents are dissatisfied with the quality of the matric results. It means a lot needs to be done to improve the quality of matric results in the district. About 17,3% disagreed to 8.1 statement. Total Quality Management could be used as a tool to help correct the situation in the district. The standard and quality of matric results is not satisfactory (cf. 2.2.2; 1.1.4).

Item 8.2 The school management is committed to the improvement of schools' results including matric results.

An overwhelming majority of 77,7% respondents agreed that the school management is committed to the improvement of schools' results including matric results. This finding is an indication that school managers in most schools are concerned with the quality of results produced. Total Quality Management implementation will help the school managers to best improve the quality of the schools' results. Only 22,3% disagreed (cf. 2.4.2).

Item 8.3 Total Quality Management improvement strategies are needed to help schools gain better matric results.

The majority of respondents (98,5) feel Total Quality Management strategies like delighting customers; monitoring the delivery of the curriculum; initiating staff training for quality; communicating the quality message, etc., are needed to help schools gain better quality.

Only 0,5% of the respondents disagreed (cf. 3,1,1).

Item 8.4 Motivation, encouragement and commitment of learners could help improve, the quality of results.

Almost 100% of respondents agreed that motivation, encouragement and commitment of learners could help improve the quality of the results. Only 0.5% disagreed. This finding indicates that motivated, encouraged and committed learners will produce quality work. It is lucidly explained in the literature that teachers need to encourage learners to take responsibility of their own learning (cf. 2.7.1; 2.4.2).

Item 8.5 Workshops on contents, methods and approaches could help to improve the quality of education results.

It is about 97,0% of respondents who agreed that workshops on contents, methods and approaches could help to improve the quality of education results. About 2,5% disagreed to item 8.5. The finding indicates that respondents understand the importance of workshops to institutions. Workshops lead to work enrichment for they provide attendants with new work methods and approaches for quality to be obtained. The literature consulted provided overwhelming support for empowering education through workshops (cf. 2.3.1.4; 2.6.2; 2.6.1.1).

Item 8.6 Government intervention, through supply of teaching resources could help improve the quality of education results.

According to figure 4.1, item 8.6 the majority of respondents (97.0%)

agreed to supply of resources by government. Only 2,5% did not agree. Proper application of Total Quality Management means adequate supply of resources for quality to be achieved. From literature studies it is evident that resources play an important role in education and it cannot do without them (cf. 2.7.3; 2.7.4).

Item 8.7 Commitment of school managers in the running of the school is lacking.

About 59,6% of respondents agreed with item 8.9 that commitment of school managers is lacking. This finding is an indication that school managers are not doing enough to improve quality. They will not be able to have continuous improvement of quality if they lack commitment. TQM characteristics state that there should be:

- ◆ Total commitment from all involved;
- ◆ Active involvement of everyone throughout the organisation, and also suggests the breakdown of professional barriers.

Only 40,1% of respondents did not agree to item 8.7 (cf. 2.3.2.2).

Item 8.8 Teachers' commitment and dedication are low.

In this item, 52,0% of respondents agree that teacher's commitment and dedication are low. Only about 48,0% disagreed. This finding suggests that there is lack of commitment and dedication on the educator's side. Continuous improvement and active involvement of everyone would help improve matric results. Teachers need to be motivated and encouraged to produce quality results (cf. 2.3.1.1;

2.4.2).

Item 8.9 The general work morale is low.

About 71,6% of respondents agree that work morale is low and 28,4% disagree. Poor results are well linked with a low morale. Motivation, encouragement and enrichment can all help boost the work morale of educators, managers and learners.

Item 8.10 The school manager is the sole decision maker.

Only 27,2% of respondents agreed that the school manager is the sole decision-maker. The majority of respondents (72,8%) disagree that the principal is the sole decision-maker. They have full understanding of democratic management principles. It means they in no way associate themselves with autocratic rule. They prefer a joint decision making system.

4.8 RESPONDENTS' VIEW ON THINGS THAT AFFECT THE QUALITY OF EDUCATION RESULTS.

This section was based on open-ended questions. It is divided into two parts: item 9 which focuses on things that affect the quality of education results in the schools or district and item 10 focusing on the extent to which TQM can help to improve the quality of education in schools.

Item 9: What affects the quality of education results in schools or district?

The respondents were asked to state in their own words what affects the quality of education results in their own schools or district. The following were answers advanced by respondents:

- ◆ Lack of resources
- ◆ Lack of commitment and low work morale by school managers, management, educators, learners and parents.
- ◆ Poor attendance by learners
- ◆ Lack of discipline
- ◆ Late coming
- ◆ Lack of teamwork
- ◆ Ineffective management
- ◆ Poor communication
- ◆ Lack of adequate subject advisory services to educators.

Factors which were most frequently and commonly mentioned by respondents as affecting the quality of results in schools were lack of resources, lack of commitment and low morale; lack of teamwork, discipline problems and poor attendance (cf. 2.3.1.1; 2.3.2.2; 2.3.2; 2.6.3).

Item 10 To what extent can TQM help to improve the quality of education in schools?

The respondents in this item (10) indicated that in some cases the apposite to item 9 are answers to item 10. The following are some of their comments on the extent to which TQM can help to improve

the quality of education in their schools?

- ◆ The majority of respondents indicated that TQM can bring a lot of improvement to quality education in schools, more especially is clarified, well understood and well implemented.
- ◆ Supply of resources (financial, physical and relevant human resources) by government to improve the quality of education in this district.
- ◆ Commitment of all involved in education for good results to be attained.
- ◆ Motivation and morale boosting activities for schools to improve quality
- ◆ Respondents indicated that teamwork is needed for quality education to be achieved.
- ◆ Establishment of subject advisory unit in Atamelang District and enrichment of school managers, heads of departments and educators.
- ◆ School management to meet regularly with staff and to recognize the views and needs of staff.
- ◆ School managers roles for quality results to be achieved and maintained.
- ◆ Discipline to be strictly applied.

In summary Item 9 and 10 are supported by literature. Literature succinctly explains commitment by all involved; resources supply, workshops and training to enrich staff, teamwork, etc. (cf. 2.2.1; 2.2.3 and 2.3.1.4). No institution or district of education can operate well if faced with the problems at item nine (9). For successful implementation

of TQM and continuous improvement of quality in education, all factors in item ten (10) should be put in place.

4.9 MEAN SCORE AND RATINGS OF THE TEN HIGHEST RANKED ITEMS

In this study an attempt was made to rank the first highest rated ten items on Total Quality Management as a tool to improve the quality of education in schools. Table 4.6 shows ten highest ranked mean scores of respondents.

Table 4.6 Ten highest ranked mean scores of respondents

	ITEM	Mean	Std deviation
1.	Government support, supply and intervention are needed for schools to successfully implement TQM.	3.73	0.48
2.	TQM requires efforts of the entire team (universal quality responsibility)	3.70	0.56
3.	Implementing TQM in schools requires a commitment to creating an environment in which staff and students do their work best.	3.66	0.55
4.	Quality education can be achieved through implementation of TQM in all schools.	3.60	0.58
5.	Success of TQM implementation will depend on open and honest talk.	3.60	0.59
6.	TQM advocates encouragement, empowerment and enabling rather than command, control and compliance.	3.51	0.73
7.	Total commitment and continued support by top school administration are crucial to the success of TQM.	3.49	0.69
8.	Within TQM approach the level of trust and mutual respect coupled with the extent of the shared values and vision, are powerful and valued.	3.45	0.75
9.	TQM will only work if there is observed commitment to quality by the management.	3.44	0.71
10.	The success of implementing TQM depends on training that will result in attitudinal change of educators.	3.44	0.68

Table 4.6 lucidly displays the mean scores arranged in rank order of ten most important statements which the respondents strongly agreed with.

These are the most important requirements for the implementation of TQM as a tool in schools. From table 4.6 it is important to note that all the items rated are higher than 3,0%. This indicated that respondents regarded TQM tool as a very important vehicle to quality education.

Item 7.18 Government support, supply and intervention are needed for schools to successfully implement TQM.

($\bar{x}$ = 3,73; SD = 0,48)

This finding indicates that government support, supply and intervention are main pillars behind TQM implementation and quality assurance in school (cf. 2.7.3 and 2.7.4).

Item 7.3 TQM requires efforts of the entire team (universal quality responsibility).

($\bar{x}$ = 3,70; SD = 0,56)

There is a need to designate a team to be responsible for managing the implementation of TQM in schools. The specific responsibility of such a team might include promoting the total quality approach, designating and delivering training, communicating progress to staff monitoring and evaluating the TQM implementation process (cf. 2.3.2.3 and 2.6.1.1).

Item 7.16 Implementing TQM in schools requires a commitment to creating an environment in which staff and learners do their work best.
($\bar{x} = 3,66$; $SD = 0,55$)

This finding stipulates that teacher and learner commitment to school work will bear fruits to the learning environment. Management encourages continuous improvement and recognizes the expertise that teachers and learners have acquired (cf. 2.3.1.1; 2.3.2.2 and 2.4.2).

Item 7.5 Quality education can be achieved through implementation of TQM in all schools.
($\bar{x} = 3,60$; $SD = 0,58$)

TQM led very good results to the Australian schools, British schools and American schools (cf. 2.7.4). Implementation of TQM will bring desired goals to schools. Quality education is the goal of TQM.

Item 7.17 Success of TQM implementation will depend on open and honest talk.
($\bar{x} = 3,60$; $SD = 0,59$)

This finding is in agreement with the idea that proper communication improves performance. Good communication will lead to motivation, educators and schools managers (cf. 2.3.2.1 and 2.6.3).

Item 7.4 TQM advocates encouragement, empowerment and enabling rather than command, control and compliance.

($\bar{x} = 3,51$; $SD = 0,73$)

The finding in this item stresses that TQM advocates encouragement, empowerment and enabling. For quality performance people need to be encouraged in their work. Teachers should encourage learners to take responsibility of their own learning. Institutions should empower workers for quality work to be produced (cf. 2.6.1.1. and 2.7.1).

Item 7.6 Total commitment and continued support by top school administrations are crucial to the success of TQM.

($\bar{x} = 3,49$; $SD = 0,69$)

Without commitment and involvement of the school administrators (managers), TQM will never be successfully implemented in schools. School managers should fully partake in all quality processes and should be pillars behind quality operations (cf. 2.3.1.1; 2.4.2 and 2.6.3).

Item 7.7 Within TQM approach the level of trust and mutual respect coupled with the extent of the shared values and vision, are powerful and valued.

($\bar{x} = 3,45$; $SD = 0,75$)

This finding strongly advocates that institutions should have vision which will enable them to plan successfully for future results. An element of trust and mutual respect are well supported by other managers in literature. To be effective, educational institutions require processes for

developing their quality strategy. These include:

- ♦ a clear and distinctive mission
- ♦ a clear vision
- ♦ respect and trust (cf. 2.3.1.1)

Item 7.13 TQM will only work if there is observed commitment to quality by the management.

($\bar{x} = 3,44$; SD = 0,71)

In this finding the Atamelang district educators believe in absolute commitment to quality by the management. This fits in well with the views of other managers in other countries that there must be obsessive commitment to quality by the school management (cf. 2.3.1.1).

Item 7.15 The success of implementing TQM depends on training that will result in attitudinal change of educators.

($\bar{x} = 3,44$; SD = 0,68)

Educators believe that proper training will empower them with skills towards the successful implementation of TQM. The grouped mean score lucidly indicates that training will help educators to change their attitude. With changed attitude, work will be best done and expected results will be achieved (cf. 2.3.1.4; 2.6.1.1 and 2.6.2).

From table 4.5 it can be concluded that these findings stress the improvement of TQM as a tool that can be used to improve the quality of education in schools. All items rated higher than 3,00 are very important in the implementation of TQM as a tool to improve the quality

of education.

4.10 COMPUTATION OF SCORES TO CONSTRUCT INDICES

Chi-square was used to determine whether two frequently distributions or sets of a categorical data differ significantly from each other. The scores for each of the sub-scales were aggregated using the SPSS programme. In this study the chi-square was computed to determine the level of significant difference between views of respondents on Total Quality Management as a tool to improve the quality of education results in Atamelang district.

Chapter one lucidly explained that Total Quality Management is a tool that can be used to improve the quality of education results in Atamelang district secondary schools. It is also emphatically stated that the school management and educators have an impact on the performance of matric candidates (results).

4.10.1 Analysis of Variance: Position held in school.

The analysis of variance of difference of means of position held in school will be explained through Table 4.7. In this table there will be the analysis of means of positions held by Principals, Deputy Principals, HODs and educators.

Table 4.7 Oneway ANOVA test of difference of means of position in school

		Rank						95% Confidence Interval for Mean		
			N	Mean	Std Deviation	Std Error	Lower Bound	Upper Bound	Minimum	Maximum
TQM as a tool to improve the quality of education	Item 1 (T. 4.2)	Principal	14	26.29	2.09	.56	25.08	27.49	23	28
		Deputy Principal	11	25.45	1.86	.56	24.20	26.71	23	28
		Educator	37	25.68	2.43	.40	24.87	26.48	20	28
		H.O.D.	122	23.90	3.20	.29	23.33	24.47	13	28
		Total	184	24.53	3.04	.22	24.09	24.47	13	28
The role of school management to improve the quality of education	Item 2 (T. 4.3)	Principal	14	21.86	1.83	.49	20.80	22.92	18	24
		Deputy Principal	11	19.73	3.69	1.11	17.25	22.21	11	24
		Educator	42	20.42	2.93	.45	19.33	21.15	13	24
		H.O.D	130	18.42	3.97	.35	17.73	19.11	7	24
		Total	197	19.13	3.77	.27	18.60	19.66	7	24
Implementing TQM in school	Item 3 (T. 4.4)	Principal	14	19.29	1.14	.30	18.63	19.94	17	20
		Deputy Principal	11	17.82	1.89	.57	16.55	19.09	15	20
		Educator	41	17.61	1.96	.31	16.99	18.23	11	20
		H.O.D.	127	17.59	2.18	.19	17.21	17.97	12	20
		Total	193	17.73	2.09	.15	17.43	18.03	11	20

(NB: T. 4.2 = Table 4.2, p.87)

Table 4.7 (continued)

Test of Homogeneity of variances

	Levene Statistic	Df1	Df2	Sig
TQM as a tool to improve the quality of education	2.471	3	180	.063
The role of school management to improve the quality of education	4.509	3	193	.004
Implementing TQM in schools	2.891	3	189	

ANOVA

		Sum of squares	Df	Mean Square	F	Sig.
TQM as a tool to Improve the quality of education	Between groups	149.292	3	49.764	5.815	.001
	Within groups	1540.512	180	8.558		
	Total	1689.804	183			
The role of school Management to Improve the Quality of education	Between groups	224.581	3	74.860	5.637	.001
	Within groups	2563.246	193	13.281		
	Total	2787.827	196			
Implementing TQM In schools	Between groups	37.031	3	12.344	2.905	.036
	Within groups	802.958	189	4.248		
	Total	839.990	192			

Table 4.7 shows that there is a statistical significant difference between Item 1. Total Quality Management as a tool to improve the quality of education and position held in school by principals, deputy principals, HODs and educators ($x^2 = 8,558$; sig = 0,001). From the mean scores of school management (Principals = 26,29; Deputy principals = 25,45 and HODs = 25,68). This finding

indicates that principals strongly support Total Quality Management as a tool to improve the quality of education in schools than the educators. This could be due to the fact that they have a broad knowledge of management than educators.

The following two items on Table 4.7 also showed no statistical significant difference.

Item 2 The role of school management to improve the quality of education ($x^2 = 5,637$; sig = 0,001).

Item 3 Implementing TQM in school ($x^2 = 2,905$; sig = 0,036).

From Table 4.7, items 2 and 3 the principals' means are higher than those of the deputy principals, HODs and educators. This illustrates what their positions entail as well as their broad knowledge of management.

This finding in item 2 suggests the school management is in full support of quality education. The school management is committed to improving the quality of education and also supports TQM (cf. 2.3.1.1, 2.6.3).

The finding on item 3 also indicates that the principals are more willing to implement TQM in schools. They have come out strongly

with a mean of 19,29 and the other respondents range between 17,82 and 17,59.

4.10.2 Analysis of Variance: Teaching experience

Teaching experience of respondents plays a major role in decision making. More experienced respondents has a lot of knowledge on management principles and can give a lot on how TQM can be implemented. Table 4.8 gives an analysis of variance of different means of teaching experience.

Table 4.8 Oneway ANOVA test of difference of means of teaching experience

		95% Confidence Interval f or Mean					Min	Max
		N	Mean	Std Deviation	Std Error	Lower Bound	Upper Bound	
Item 1 (T. 4.2)	TQM as a tool to improve the quality of education	Below 4	23.70	3.20	1.01	21.41	25.99	18
		5-8	24.18	2.98	.32	23.53	24.82	18
		9-12	24.58	3.34	.44	23.69	25.47	13
		13-16	25.60	2.39	.54	24.48	26.72	20
		17 & above	25.75	2.26	.65	24.31	27.19	22
		Total	24.53	3.04	.22	24.09	24.97	13
Item 2 (T. 4.3)	The role of school management to improve the quality of education	Principal	18.55	4.97	1.50	15.21	21.88	8
		Deputy Principal	18.60	4.01	.42	17.77	19.44	7
		Educator	18.88	3.55	.46	17.97	19.80	9
		H.O.D.	21.40	2.19	.49	20.38	22.42	17
		Total	20.67	2.53	.65	19.27	22.07	17
			19.13	3.77	.27	18.60	19.66	7
Item 3 (T. 4.4)	Implementing TQM in school	Principal	17.00	2.26	.71	15.38	18.62	12
		Deputy Principal	17.65	2.15	.23	17.20	18.10	12
		Educator	17.47	2.14	.28	16.91	18.02	11
		H.O.D.	18.75	1.45	.32	18.07	19.43	16
		Total	18.43	1.74	.47	17.42	19.43	15
			17.73	2.09	.15	17.43	18.03	11

(NB: T. 4.2 = Table 4.2)

Table 4.8 (continued)

Test of Homogeneity of variances

	Levene Statistic	Df1	F2	Sig
TQM as a tool to improve the quality of education	.778	4	179	.541
The role of school management to improve the quality of education	3.517	4	192	.009
Implementing TQM in schools	1.411	4	188	.232

		Sum of squares	Df	Mean Square	F	Sig.
TQM as a tool to Improve the quality of education	Between groups	104.618	4	26.154	2.937	.022
	Within groups	1584.902	178	8.904		
	Total	1689.519	182			
The role of school Management to Improve the Quality of education	Between groups	104.323	4	26.081	1.873	.117
	Within groups	2659.636	191	13.925		
	Total	2763.959	195			
Implementing TQM in schools	Between groups	18.000	4	4.500	1.026	.395
	Within groups	820.370	187	4.387		
	Total	838.370	191			

Item 2. The role of school management to improve the quality of education and the teaching experience variable showed a statistical significant difference ($\chi^2 = 3,137$; sig = 0,016). This finding indicated that the more experienced the respondents are, the more they understand the role of the school management in improving the quality of education. They showed a mean score of 20,67 and 21,40.

Item 1. TQM as a tool to improve the quality of education in school and the variable teaching experience showed no statistical significant difference ($\chi^2 = 1,602$; sig = 0,176).

Item 3. Implementing TQM in schools and the variable teaching experience also showed no statistical significant difference ($\chi^2 = 2,207$; sig = 0,070).

4.10.3 Analysis of Variance: Number of years in position.

In this section there will be an analysis of variance test of difference of means of number of years in position. Through Table 4.9, that difference of means of number of years in position computed.

Item 1 in Table 4.9 shows that there is no statistical significant difference between Total Quality Management as a tool to improve the quality of education in schools ($\chi^2 = 1,215$; sig = 0,306). Item 3 also shows that there is no statistical significant difference between implementing TQM in schools and number of years in position. The means scores are almost the same ranging between 17,56 and 17,88 as the highest in item 3.

This is an indication that the respondents equally agree to the implementation of TQM in schools. They strongly believe implementation of TQM in schools might bring improvement to quality education (cf. 2.7.2).

Table 4.9 Oneway ANOVA test of difference of means of number of years in position

	Years						95% Confidence Interval for Mean				
		N	Mean	Std Deviation	Std Error	Lower Bound	Upper Bound	Min	Max		
TQM as a tool to improve the quality of education	Below 1	8	25.13	3.18	1.13	22.46	27.79	20	28		
	1-3	38	25.24	2.59	.42	24.38	26.09	18	28		
	4-6	45	24.04	2.70	.40	23.23	24.85	19	28		
	over 6	92	24.41	3.34	.35	23.72	25.10	13	28		
	Total	183	24.52	3.05	.23	24.08	24.97	13	28		
The role of school management to improve the quality of education	Below 1	9	21.78	2.39	.80	19.94	23.61	18	24		
	1-3	42	19.64	3.87	.60	18.44	20.85	8	24		
	4-6	47	18.11	3.74	.55	17.01	19.21	7	24		
	over 6	98	19.15	3.75	.33	18.40	19.90	9	24		
	Total	196	19.13	3.78	.27	18.59	19.66	7	24		
Implementing TQM in school	Below 1	9	17.56	1.81	.60	16.16	18.95	15	20		
	1-3	41	17.56	2.20	.34	16.87	18.26	11	20		
	4-6	48	17.58	2.24	.32	16.93	18.23	13	20		
	over 6	94	17.88	2.02	.21	17.47	18.30	12	20		
	Total	192	17.72	2.10	.15	17.43	18.02	11	20		
Item 1 (T. 4.2)											
Item 2 (T. 4.3)											
Item 3 (T. 4.4)											

(NB: T. 4.2 = Table 4.2)

Table 4.9 (continued)**Test of Homogeneity of variances**

	Levene Statistic	Df1	Df2	Sig
TQM as a tool to improve the quality of education	.981	3	179	.403
The role of school management to improve the quality of education	1.004	3	192	.392
Implementing TQM in schools	1.146	3	188	.332

ANOVA

		Sum of squares	Df	Mean Square	F	Sig.
TQM as a tool to Improve the Quality Of education	Between groups	33.680	3	11.227	1.215	.306
	Within groups	1653.959	179	9.240		
	Total	1687.639	182			
The role of school Management to Improve the Quality of education	Between groups	123.441	3	41.147	2.965	.033
	Within groups	2664.371	192	13.877		
	Total	2787.811	195			
Implementing TQM in schools	Between groups	4.671	3	1.557	.351	.788
	Within groups	883.699	188	4.435		
	Total	838.370	191			

It is only item 2 in table 4.9 that shows a statistical significant difference between the role of school management to improve the quality of education and the number of years in position variable (χ^2

= 2,965; sig = 0,033). The mean score (21,78) of respondents below one year in the position is an indication of their trust and belief in school management.

4.10.4 Analysis of Variance: test of difference of means of qualification.

An analysis of variance of difference of means of qualification will be discussed in Table 4.10. Means on different qualifications are computed.

Item 1 of Table 4.10: Total Quality Management as a tool to improve the quality of education in schools and the variable respondents' qualification showed a statistical significant difference ($\chi^2 = 8,904$; sig = 0,022). The respondents with highest qualifications showed a mean of 20,63 compared to lowest qualifications (diploma) with a mean of 24,03. The finding shows that the more educated people become, the better they understand management concepts and principles or tools like TQM.

Item 2. The role of school management to improving the quality of education showed no significant difference with the variable qualifications of respondents ($\chi^2 = 1,873$; sig = 0,117). In this item the highly educated respondents (masters) got higher mean scores of 20,63 than lower qualifications respondents (diploma) who

got a mean score of 18,57. This finding also shows how valuable and reliable the highly qualified people could be in as far as TQM is concerned.

Table 4.10 Oneway ANOVA test of difference of means of qualification

							95% Confidence Interval for Mean				
		N	Mean	Std Deviation	Std Error	Lower Bound	Upper Bound	Min	Max		
Item 1 (T. 4.2)	TQM as a tool to Improve the Quality of Education	Diploma	24.03	3.12	.30	23.44	24.62	13	28		
		Degree	24.80	3.01	.45	23.88	25.71	14	28		
		Honours	25.95	2.16	.48	24.94	26.96	22	28		
		Masters	25.63	2.83	1.00	23.26	27.99	21	28		
		Other	28.00	.00	.00	28.00	28.00	28	28		
		Total	24.54	3.05	.23	24.09	24.98	13	28		
Item 2 (T. 4.3)	The role of school Management to Improve the Quality of Education	Diploma	18.57	3.99	.37	17.83	19.31	7	24		
		Degree	19.63	3.31	.47	18.68	20.58	11	24		
		Honours	19.74	3.48	.73	18.23	21.24	12	24		
		Masters	20.63	3.07	1.08	18.06	23.19	15	24		
		Other	23.00	1.41	1.00	10.29	35.71	22	24		
		Total	19.10	3.76	.27	18.57	19.63	7	24		
Item 3 (T. 4.4)	Implementing TQM In school	Diploma	17.55	2.24	.21	17.13	17.97	11	20		
		Degree	17.90	1.87	.27	17.35	18.44	12	20		
		Honours	17.78	1.86	.39	16.98	18.59	15	20		
		Masters	19.00	1.41	.50	17.82	20.18	16	20		
		Other	17.50	3.54	2.50	-14.27	49.27	15	20		
		Total	17.72	2.10	.15	17.43	18.02	11	20		

(NB: T. 4.2 = Table 4.2, p.87)

Table 4.10 (continued)

Test of Homogeneity of variances

	Levene Statistic	Df1	Df2	Sig
TQM as a tool to improve the quality of education	1.663	4	178	.161
The role of school management to improve the quality of education	1.326	4	191	.262
Implementing TQM in schools	2.137	4	187	.078

ANOVA

		Sum of squares	Df	Mean Square	F	Sig.
TQM as a tool to Improve the quality Of education	Between groups	104.618	4	26.154	2.937	.022
	Within groups	1584.902	178	8.904		
	Total	1689.519	182			
The role of school Management to Improve the Quality of education	Between groups	104.323	4	26.081	1.873	.117
	Within groups	2659.636	191	13.925		
	Total	2763.959	195			
Implementing TQM In schools	Between groups	18.000	4	4.500	1.026	.395
	Within groups	820.370	187	4.387		
	Total	838.370	191			

Item 3. Implementing TQM in schools and the variable qualifications showed no statistical significant difference ($x^2 = 1,026$; sig = 0,395). All the mean scores except the one for masters qualification (19,00) are between 17,50 and 17,90. This means that the highest academic

qualifications the respondents have, a high positive influence on the implementation of TQM in schools. Some of them have done an intensive study on the modern methods of school management and planning and are also well equipped with the theory of TQM.

4.11 SUMMARY

This lucidly outlined the findings of the empirical investigation conducted to determine how Total Quality Management can be used as a tool to improve the quality of education in Atamelang district. Much as Total Quality Management was proved to be successful in other countries like USA and Britain, this chapter showed a positive response by respondents towards Total Quality Management as a tool to improve the quality of education in their district.

The findings in this study indicated that TQM can be used as a tool to improve the quality of education in schools. The respondents indicated that school management can have an effect on the quality of the results or education. Lack of commitment, lack of resources, poor communication, lack of teamwork and insufficient training of educators were also indicated as contributory factors towards the poor quality of education. Supply of resources, full commitment by all, training of educators, teamwork and best communication were advanced by respondents as steps that can promote the quality of education.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

Chapter five succinctly presents a brief summary of the study. The chapter also focuses on the reflection on the major findings of the study as well as the recommendations of how Total Quality Management (TQM) can be used as a tool to improve the quality of education in Atamelang district secondary schools. Improvements on areas for further research are revealed by the study.

5.2 SUMMARY

Chapter one addressed the aims for the study and the statement of the problem was outlined. A concern about the poor quality of matric results (education) in Atamelang district was expressed. In an attempt to improve the quality of education in the district, Total Quality Management (TQM) was viewed as a relevant tool to improve the quality of education in the Atamelang district schools.

In Chapter two the nature and scope of Total Quality Management was

outlined from the literature consulted on the characteristics of Total Quality Management, guiding principles (cf. 2.2.3) and barriers to overcome when implementing TQM in schools (cf. 2.5.4) shows that there is hope that the quality of education in schools can be improved, if these ideas are successfully implemented. Implementing TQM is essentially about improving all customer-supplier (learner-educator) processes, with the consequences of enhanced performance as evidenced by hard and fast measures (cf. 2.5).

The main goal of TQM is continuous improvement which can provide any educational institution with a set of practical tools for meeting and exceeding present and future learners' needs, wants and expectations. TQM requires the involvement and commitment of all organisational members in quality matters and continuous improvement (cf. 2.4.2).

This chapter also focussed on various theories and tools plus techniques. If the school management can understand and appreciate the various tools and techniques (cf. 2.4; 2.4.1), most educational problems will be successfully addressed. Quality "gurus" like Deming, Crosby and Juran were also cited in this chapter as their contribution to TQM in education was also studied and appreciated.

Literature studies in other countries like Australia, Britain, and USA also outlined successes of TQM in various schools. These schools have shown an increase in student motivation, self esteem and self

confidence. Educators in various schools also got motivated and encouraged to form teams (cf. 2.6; 2.6.1.1).

Chapter three outlined the research methodology of the study. It explained the rationale behind the methodology employed, how the research was conducted and what steps were taken to ensure the validity and reliability of the study.

In chapter four, the results of the empirical investigation are reported. The investigation and responses lucidly stated that lack of resources, lack of commitment by all, lack of teamwork and shortage of workshops are the inhibitors or barriers to quality education (cf. 2.3.1.1; 2.6.1.1). It was clear that full commitment and involvement by all, supply of resources and teamwork will bring successful implementation of TQM. This empirical investigation revealed teamwork as an essential element of TQM, providing an opportunity for co-operative action in pursuit of quality improvement. Teams are a way of involving everyone in quality improvement initiatives and they aid commitment (cf. 2.3.2.3; 2.6.1.1; 2.7.1).

This study had important findings that answer the research aims and questions: How can Total Quality Management be used as a tool to improve the quality of education in schools and the role played by school management and educators in improving the quality of matric results?

5.3 RESEARCH FINDINGS

5.3.1 FINDINGS ON AIM 1

With regard to Aim 1, namely to determine from literature the nature and scope of Total Quality Management (cf. 1.3) the following findings were made:

From literature and depth of some respondents' answers, the nature and scope of Total Quality Management is linked with the following values and TQM culture.

- ◆ "Customer-first" attitude. This referring to "service to the people".
A culture of customer care.
 - this is in line with making the people the central focus (cf. 2.7.4.3)
 - recognition and reward of individuals for exceptional services to customers.

- ◆ Teamwork and cooperation (cf. 2.3.2.3)
The quality improvement teams are to be utilized extensively. Teamwork in quality education is important for it is an element that links professionalism to the quality development process. Teams can be seen as the engine of quality improvement. They make

TQM work.

- ◆ Promoting a spirit of commitment.

There must be a call for top management commitment, teachers commitment, learners and parents' commitment (cf. 2.4.3).

- ◆ Teachers should have a sense of belonging to the school.

They should feel that they are also part of management. Teachers are to encourage learners to take responsibility of their own learning (cf. 2.7.1)

- ◆ Learners should be more involved in their own learning. They too should become co-managers of their own learning.

- ◆ The nature and scope of TQM also focuses on motivation, encouragement and morale building of all involved in the school. Through TQM morale gets boosted and people perform accordingly (cf. 2.6.1.1).

- ◆ TQM with boosted morale and motivated people has promoted safe schools in which the number of dropouts, discipline and incidents of vandalism have been reduced.

- ◆ Proper communication also forms the scope of TQM. Positive communication in the work environment will lead to greater success

and quality work. This goes with respect and trust. People in a school are to be taught to communicate for success. People should communicate in a transparent manner (cf. 2.6.1.1 and 2.7.4).

- ◆ Educators should be given enough training to cope with the content problems and the transformation problems that are sometimes frustrating. Training will help to empower educators and management with new skills to be used in attaining quality results (cf. 2.3.1.4 and 2.5.3) staff development programmes should be conducted.
- ◆ Some widely cited set of characteristics of TQM in schools (cf. 2.4.2) include:
 - a process of continuous cycle planning;
 - monitoring the quality process;
 - improving and reviewing the performance of an organisation;
 - total commitment and involvement of all;
 - the breakdown of professional and functional barriers;
 - getting decisions right to break down complex series of issues to a set of manageable task requiring a solution, a decision, a plan or an idea;
 - preventing problems through a process of analysis;
 - establishing an innovative attitude, so that opportunities for making improvements can be identified.

5.3.2 FINDINGS ON AIM 2

Regarding Aim 2, namely, to determine empirically teacher's perception on the implementation of Total Quality Management in Atamelang secondary schools of the North West Province.

- ◆ The investigation conducted revealed that the overwhelming number of respondents made of teachers and school management supported that Total Quality Management is a tool that can help educational institutions to cope with quality building.
- ◆ They mostly strongly agreed that the implementation of TQM in schools can bring changes to the dwindling quality of education in the district (cf. 4.6).
- ◆ The study revealed that the school management should be well informed and trained about the methods, techniques, strategies and procedures of implementing Total Quality Management in schools (cf. 2.5.4; 4.6).
- ◆ Establishing a quality management committee which will monitor quality processes in schools and the implementation of TQM (cf. 4.6).

- ◆ The government support, supply and intervention are needed for schools to successfully implement TQM. An overwhelming number of educators and management are in full support of this fact. There will not be any quality more especially in public schools without government intervention.
- ◆ The implementation of TQM in schools requires a commitment to creating an environment in which staff and students do their work best (cf. 4.6). The teachers also fully supported this idea.

5.3.3 FINDINGS ON AIM 3

Regarding Aim 3, namely to determine empirically the perceptions of educators and management on the inhibitors of quality education in Atamelang district secondary schools (cf. 1.3) the following findings were made:

Quality education implies meeting customers' requirements right, first time, on time, every time and delighting them in the process by doing that little bit extra that they do not imagine possible (cf. 2.2.2). It is meeting and exceeding client needs and expectations that will yield desirable results (cf. 2.2.2).

The following main factors were indicated as causes of poor

education quality:

- shortage of educational resources (physical, financial and human resources);
- Lack of commitment (educators, management, learners and parents);
- No teamwork at different work stations;
- Ineffective school management;
- Poor attendance of learners;
- Negative attitudes towards work;
- Shortage of services by subject advisors;
- Poor communication and very few staff meetings;
- Lack of discipline in schools.

The advanced problems investigated were also coupled with good solutions, for example:

- supply of all needed resources by government and parents;
- educators, management, learners and parents to be motivated to work hard for success.
- Teamwork, good communication, more workshops and attendance by learners as suggested will all help improve the quality of education in the district (cf. 4.8.1).

5.4 RECOMMENDATIONS

RECOMMENDATION 1

Resources play a major role in the education of a nation. They should be supplied for effective and quality education.

MOTIVATON

The government, parents and other stakeholders should work towards provision of education resources for all the schools to successfully practice Total Quality Management and for quality education results. Without resources schools cannot achieve intended goals.

RECOMMENDATION 2

Involvement and commitment of all for quality education should be striven for.

MOVITATION

The school management, educators, parents and learners should all be committed to a quality culture. Involvement and commitment of school management and educators will ensure delivery of the curriculum to the learners. This will mean learners' understanding what is being taught and a positive outcome of the whole interaction process. Involvement and commitment of all will be geared to a quality education. TQM advocates commitment by all and if schools

can be in line with this principle, total quality will be attained. Parents should at all times monitor their children's work. They should be part of their learning process and not be amazed by their results at the end of the year.

Learners must attend school, do their class work, homework, projects, write tests, and examinations. Their commitment to studies will also bear fruits to success.

RECOMMENDATION 3

Total Quality Management implementation requires teamwork. Teamwork and quality management committees are needed for quality work to be produced.

MOTIVATION

There is a need to designate a team (e.g. quality committee) to be responsible for managing the implementation of TQM in a school. The specific responsibilities of such a team include:

- promoting the total quality approach;
- designing and delivering training;
- communicating progress of staff, and
- monitoring and evaluating the implementation process.

RECOMMENDATION 4

Initiating staff training for quality education and successful implementation of TQM.

MOTIVATION

Staff development through workshops can be seen as an essential tool for building the awareness and knowledge of quality education. This can be the key strategic change agent for developing the quality culture. Staff in all schools need knowledge of some of the key tools including evaluation methods, problem solving and decision-making techniques. Training is a prime opportunity to underscore the school's values. To do this, top management must be closely involved in training programmes. All schools must train and empower their staff to have skills, a strong ability to communicate vision, optimism and purposiveness.

5.5 CONCLUSION

In conclusion, the study revealed that TQM could play a role in improving the quality of education in Atamelang District of Education. Quality improvement is based on adequate training of staff and commitment by all involved. Motivation, expertise and enthusiasm have assured quality.

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RESEARCH QUESTIONNAIRE

RESEACHER : T.P. RAMOTSE
PROGRAMME : MBA
INSTITUTION : UNIVERSITY OF NORTH WEST
SUPERVISOR : MRS TEU C.M.

TOPIC

Total quality management as a tool to improve the quality of education results in Atamelang district secondary schools of North West Province.

QUESTIONNAIRE No:

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SECTION A

BIOGRAPHICAL AND DEMOGRAPHICAL DATA

Kindly answer the questions by crossing x on the appropriate block

1. Year age category

1.1	Below 30	
1.2	31 - 35	
1.3	36 - 40	
1.4	41 - 45	
1.5	46 - 50	
1.6	51 and above	

2. School enrolment

2.1	Under 200	
2.2	201 - 400	
2.3	401 - 600	
2.4	601 - 800	
2.5	801 - 1000	
2.6	Over 1000	

3. Your work experience in teaching

3.1	Less than 4 years	
3.2	5 - 8 years	
3.3	9 - 12 years	
3.4	13 - 16 years	
3.5	17 and above	

4. Your Position in the school

4.1	Principal	
4.2	Deputy Principal	
4.3	H.O.D	
4.4	Educator	

5. How long have you been in that position

5.1	Less than a year	
5.2	1 - 3	
5.3	4 - 6	
5.4	Over 6	

6. Highest Academic Qualification

6.1	Diploma (UDES/P, FED, STD & OTHER	
6.2	DEGREE	
6.3	Honours Degree	
6.4	Masters Degree	
6.5	Others/Specify	

SECTION B

The following items are to be rated with the scale 1 to 4. Kindly reflect your opinion about quality in your school.

Keys: 1 = SD : Strongly disagree
 2 = D : Disagree
 3 = A : Agree
 4 = SA : Strongly Agree

TOTAL QUALITY MANAGEMENT : It is an approach to improve the effectiveness and flexibility of an organisation as a whole. It is essentially a way of organising and involving the whole organisation: every department, every activity, and every single person at every level. For a school to be truly effective each part must work properly together, recognising that every person and every activity affects, and in turn is affected by others (Oakland 1989). It focuses on improving the quality of results and satisfying the customers in different fields.

7. Total quality Management (TQM) as a tool to improve the quality of education.

		Strongly Disagree	Disagree	Agree	Strongly Agree
7.1	Total quality management is creating a quality culture where the aim of every member of staff is to delight their customers (learners)	1	2	3	4
7.2	Total quality management is a philosophy of continuous improvement by institutions practicing it	1	2	3	4
7.3	Total quality management requires efforts of the entire team (universal quality responsibility).	1	2	3	4
7.4	Total quality management advocates encouragement, empowerment and enabling rather than command, control and compliance.	1	2	3	4
7.5	Quality education can be achieved through implementation of total quality management in all schools	1	2	3	4
7.6	Total commitment and continued support by top school administration are crucial to the success of total quality management	1	2	3	4
7.7	Within TQM approach the level of trust and mutual respect coupled with the extent of the shared values and vision, and powerful and valued.	1	2	3	4

The role of school management to improve the quality of education.

7.8	The school management sees it that the vision and mission statement developed are implemented to the fullest.	1	2	3	4
7.9	The school management meets regularly with the staff to define their requirements and needs.	1	2	3	4
7.10	The school management encourages and empowers staff with quality management skills	1	2	3	4
7.11	School management provides teachers with the subject content training (workshops) to improve quality teaching and results.	1	2	3	4
7.12	The school management is well supported by the department of education in its quest for quality education.	1	2	3	4
7.13	The quality management will only work if there is observed commitment to quality by management.	1	2	3	4

Implementing total quality management in schools

7.14	It is necessary to identify a quality committee specifically responsible for driving the implementation process of TQM in schools	1	2	3	4
7.15	The success of implementing total quality management depends on training that will result in attitudinal change of educators.	1	2	3	4
7.16	Implementing total quality management in schools requires a commitment to creating an environment in which staff and students do their work best.	1	2	3	4
7.17	Success of TQM implementation will depend on open and honest talk.	1	2	3	4
7.18	Government support, supply and intervention are needed for schools to successfully implement total quality management.	1	2	3	4

SECTION C

8. The following statements are about the quality of matric results and roles played by the educators and school management.

Keys 1 = Disagree
 2 = Agree

		Disagree	Agree
8.1	The quality of metric results in the district is below expectation level.	1	2
8.2	The school management is committed to the improvement of schools results including metric results.	1	2
8.3	Total quality management improvement strategies are needed to help schools gain better metric results.	1	2
8.4	Motivation, encouragement and commitment of learners could help improve the quality of the results.	1	2
8.5	Workshops on contents, methods and approaches could help to improve the quality of education results.	1	2

8.6	Government intervention, through supply of teaching resources could help improve the quality of education results.	1	2
8.7	Commitment of school managers in the running of the school lacking.	1	2
8.8	Teacher's commitment and dedication are low	1	2
8.9	The general work morale is low.	1	2
8.10	The school manager is the sole decision-maker.	1	2

9. In your own words explain what affects the quality of education results in your school district.

Comments.....
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.....
.....
.....

10. To what extent do you think that total quality management can help to improve the quality of education in your school?

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.....
.....
.....
.....
.....
.....

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION.

University of North-West



MBA/MPA Programme
Faculty of Commerce and Administration

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24 AUGUST 2001

The District Manager
Circuit Managers
Principals
Teachers

Dear Sir/Madam

PERMISSION TO CONDUCT RESEARCH: Ramotse T P (95/12637)

The MBA/MPA Programme is a twin-track Master of Business Administration (MBA) and Master of Public Administration (MPA). This means that all students register for the common first year curriculum. In the second year, students specialise in either MBA or MPA.

This Programme provides vocational education and training in a range of business and management skills to serving and aspiring managers from all sectors including public, private, parastatals and non-governmental organisations. It offers a flexible core curriculum, which integrates issues from these sectors into a single programme of study. It fosters a common inter-disciplinary outlook among students. Students are involved in a professional discussion of how theoretical approaches relate to and affect real management issues, enabling them ultimately to shape their actions as managers.

All students in either MBA or MPA must complete a dissertation of between 8000 - 10 000 words on a topic selected jointly by the student, the University of North-West and the sponsoring/employing organisation or organisation of their choice. The dissertation must be submitted for assessment not later than six months after completion of the taught courses to which the student was registered.

Mr Ramotse T P is a registered MBA student currently in his final year. We would be grateful if you could provide him permission and necessary assistance to conduct a research study as indicated above.

Should you have any queries, please do not hesitate to contact the MBA/MPA Programme office at (018) 389 2183/2215.

Yours sincerely

TLHALEFANG MPETE
ASSISTANT PROGRAMME MANAGER

