

## **CHAPTER 4 : MODELS FOR THE MANAGEMENT OF INTERNAL QUALITY ASSURANCE IN EDUCATION**

### **4.1 INTRODUCTION**

Recent South African educational policy documents stress that educational quality improvement must be at the center of all efforts geared at developing a culture of teaching, learning and service in education. It is emphasised that the major responsibility of quality assurance in the development of student teachers should lie within the educational institutions themselves and that the major aim of quality assurance should be the development of institutional capacity to deliver more competent professional educators who will be able to make an impact on schooling.

According to Strydom (1992:vii) the quality of activities within a higher education institution, is the direct responsibility of the management team of such an institution. In order to ensure that commitments are met and that quality is assured, quality has to be managed. Presently there are no statutory measures, formal regulations or mechanisms in respect of the quality assurance practices of educational institutions (DoE, 1998:138). It is imperative that an effective management strategy for assuring quality in the training of teachers be developed.

In this chapter three models for the management of quality assurance in education will be discussed. Correlations and comparisons in terms of the main features, processes and perspectives deriving from these models will be made with the aim of developing a suitable model for the management of internal quality assurance in the professional training of student teachers.

The first model that will be discussed is Total Quality Management.

### **4.2 TOTAL QUALITY MANAGEMENT (TQM)**

#### **4.2.1 Orientation**

Probably the most current and comprehensive model for the management of quality assurance used by many service and production organisations is Total Quality Management. TQM is both a management philosophy and a systematic process for continuously improving products and services with the client as the central focus point (Hogan, 1994:3).

As other organisations do, educational organisations have external clients, citizens who hire their outputs (results) as well as pay the taxes (Kaufman & Zahn, 1993:22). Education has processes that deliver results. Finally, there are inputs: existing resources, teachers and the skills, knowledge, attitudes and abilities that learners bring with them to educational institutions.

According to Kaufman and Zahn (1993:23) the implementation of TQM in education will link all of the above elements, assuring that all stakeholders become active participants in achieving quality. TQM is a solid process, both conceptually and practically, which can provide the glue for substantial and continuous educational improvement towards client satisfaction.

#### **4.2.2 The philosophy of TQM**

The philosophy of TQM is that it is a process for creating competitive advantage by focussing on what is important to the client. It strives to exceed customers' expectations by improving business competitiveness through the contribution of motivated people. Quality assurance is an integral part of TQM and forms the quality system that ensures that standards are consistently achieved (ISO 9000, 1999:3). According to Murgatroyd and Morgan (1993:59), Kaufman and Zahn (1993:7) and Freeman (1994:156) the philosophy of TQM is supported by a number of key beliefs, namely:

- Quality is what the client says it is.
- Top quality performance must be achieved in all areas, not just in the product or service.
- A team spirit or corporate culture, where everyone contribute individually and together, will achieve quality for the client.
- The process of TQM must be totally integrated into every activity and process of the organization, including its basic strategies, culture and management systems.
- Everyone in the organization has to define and continuously pursue quality, every minute of every day, with every act and decision.
- Quality flows from constantly improving the processes involved, not from relying on inspection.

The basic philosophy of TQM is best portrayed in the writings of W. Edwards Deming, Joseph Juran and Philip B. Crosby ( Sallis, 1993: 38-50). Although their writings concentrate on quality in the manufacturing industry, not giving attention to education as such, they all claim that their ideas are applicable to service industries. According to Bonstingl (1992:v), Kaufman and Zahn (1993:5) and Sallis (1993:38) their contributions to the quality movement can successfully be adapted to education.

#### **4.2.2.1 Deming**

Deming's philosophy of the management of quality and quality assurance is based on a humanistic philosophy and is strongly vested in his belief that if workers are educated and empowered to manage their own work processes, the quality of their outputs will improve and costly and ineffective end-of-line inspection processes will be curtailed or eliminated (Deming, 1982:248). High quality would thus cost less, not more (Bonstingl, 1992:9; Doherty, 1994:84).

Deming focuses on the importance of the processes which produce the goods and services. If an organisation wants to improve a product or service, close attention must be paid to the processes which produce the product or service. Measurements of the product or service provide, at best, lagging indicators. Measuring the characteristics of the process provides leading indicators upon which action can be taken to ensure the desirable result (Deming, 1982:87). What distinguishes TQM from conventional education management practices are, according to Doherty (1994:89), the following considerations:

- concern to define achievement by reference to the purpose of education, not to standardised tests;
- concern for processes instead of organisations in order to assure that form follows function; and
- concern for improvement of processes.

Deming warns against managerial actions which lead to less than optimum system performance and customer satisfaction. According to Deming (1982:117-118) the problem of quality usually lies primarily with management. He states that it is not enough to have a workforce that is willing and all doing their best. The efforts of

workers must be guided by the analysis of data through a system of profound knowledge, including a deep understanding of human psychology, learning theory and variation within systems.

Deming's theory of management goes beyond the historical views of management in specifically recognising the impact of the system on the behaviour of people. According to Deming (1982:52), when there is a quality problem, 85 per cent of the time it is with the system; only 15 per cent of the time it will be with the workers. The causes of quality failure can only be eliminated by the strongest possible leadership from the top of the organization. A constancy of purpose for improvement, supported by vigorous programmes of training and retraining will enable leaders to take action to accomplish transformation over time. Deming advises that an organisation begins this process with an examination of its internal quality assurance system, which most of the time is the source of the problem (Doherty, 1994:84).

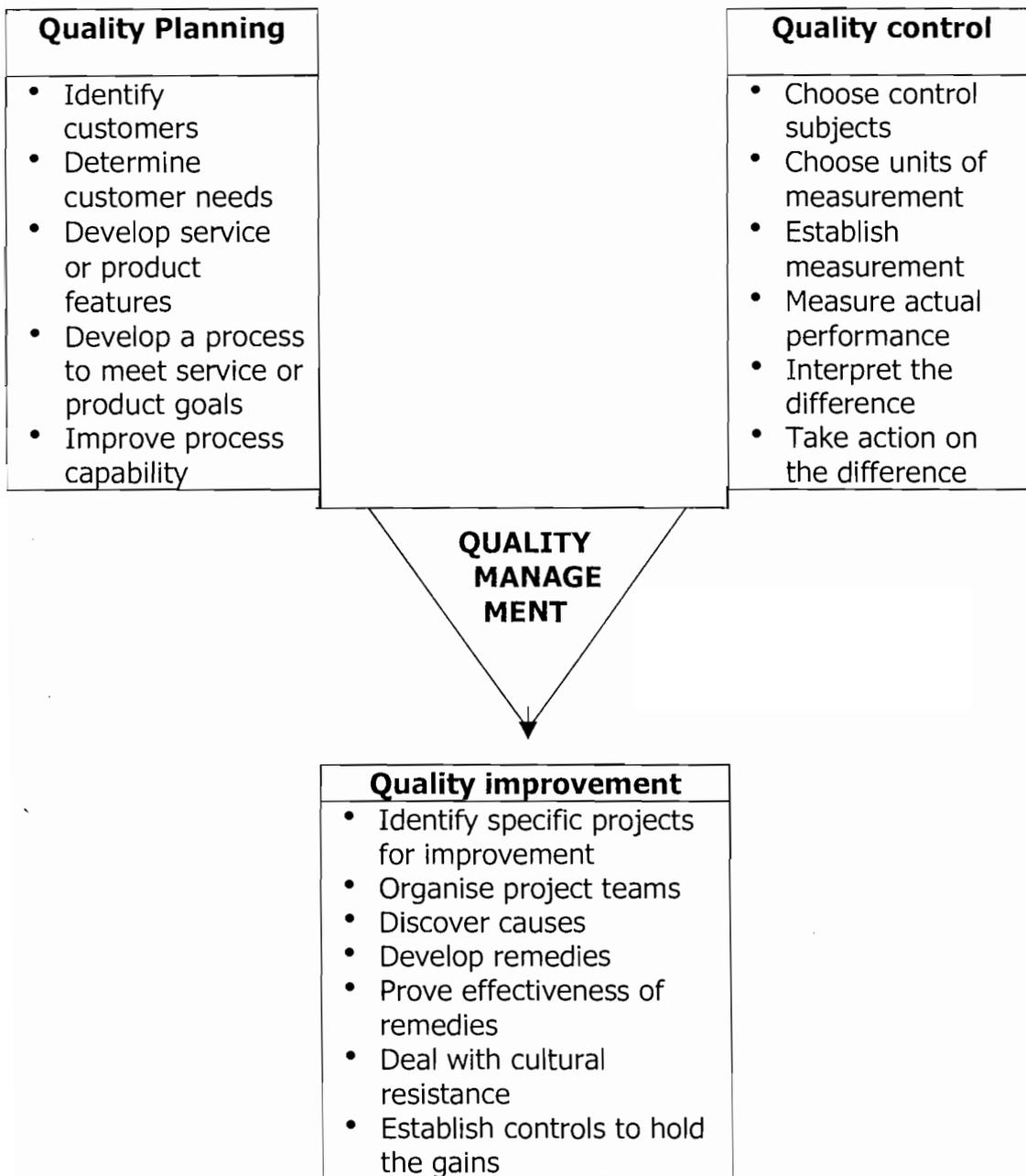
#### **4.2.2.2 Juran**

The quality management philosophy of Juran reinforces the teachings of Deming. According to Juran (1989:83) management, and not the production worker, is most accountable for the organisation's performance. He stresses the need for management to plan quality into the production process and to monitor the quality of products throughout the production process. Juran (1989:24) emphasises the need for a dependable process to be developed, as without such a process goals will not be consistently achieved.

Juran (1989:15) defines quality as "fitness for purpose" and "freedom from defects", stressing that although a product or service can meet its specifications, it can still not be fit for its purpose. Like Deming he emphasises the need to be attentive to customers' perceptions of quality. Customers include all persons who are impacted by the organisation's processes and products (Bonstingl, 1992:15 & Doherty, 1994:10).

Juran's philosophy is vested in the "Juran Trilogy" which focuses on quality planning, quality improvement and quality control (Juran, 1989:20-21) and is depicted in Figure 4.1.

**Figure 4.1 : The Juran Trilogy (Juran, 1989: 20 - 21)**



#### **4.2.2.3 Crosby**

Crosby's (1985:58) philosophy of the management of quality is rooted in his five absolutes of quality management, namely:

- quality is conformance to requirements, not goodness or elegance;
- there is no such thing as a quality problem;
- it is always cheaper to do things right the first time;

- the only performance measurement is the cost of quality; and
- the only performance standard is zero defects.

According to Crosby, quality is free, as quality programmes can pay for themselves (Crosby, 1979:1). When the waste and inefficiency in most systems are eliminated, it will eventually lead to savings. Like Deming, he argues that inspection be taken off the assembly line and that the focus be on prevention of errors. The focus on prevention necessitates that the best possible resources be put in the front end of a process (Crosby, 1979:68). Mistakes in any organisation are costly in terms of time, lost profits, lost customers and lost opportunities for growth and learning. Compared with such costs, doing things right the first time around, is considerably less expensive.

Based on the beliefs and contributions of the above advocates of TQM, it can be argued that TQM is a process which is never complete as quality and client satisfaction necessitate continuing quality management goals. TQM is a process by which all of the factors of production, including people, do things right the first time and every time. TQM intends to create an organisational climate that encourages continuous improvement towards perfection. It does not force adherence or compliance but provides every employee with an opportunity to become a full partner in defining and creating success. Everyone is supported, encouraged and empowered to make a unique contribution to the total quality effort. The more the commitment to system-wide quality, the better quality will be achieved.

TQM, despite its pluralistic, customer-driven definition of the management of quality, is generally recognised as having much to offer to educational organisations committed to develop some form of quality improvement system. Doherty (1994:21) argues that TQM is a means to ascertain quality and standards in education as it provides not only a philosophy, but also a set of tools for improving quality. The implementation of TQM in educational organisations will, however, require a change of organisational culture as it represents a change in attitude and working method within the organisation.

### **4.2.3 TQM in education**

In the higher education sector, demands are increasingly being placed on institutions and staff to perform to high quality standards closely monitored by government inspectorates. The need is clearly identified for these institutions to undergo rigorous quality assurance, combining external inspection, self-assessment by providers and published information on performance. Although much has been learned from the manufacturing sector about TQM, it is logical to expect that with the implementation of the concept to education, certain differences between education and business will have to be considered (Doherty, 1994:87-88):

On a functional level there is little doubt that many educational institutions have, due to external pressure, quickly adopted the accoutrements of the business culture and have a more clearly defined purpose, structure and accountability than ever before. At the same time the enforced move from a relatively comfortable educational culture to the hard-edged culture of competitive business organizations has created an intra-institutional crises of identity in which the tensions between the two cultures are still in the process of exposure and exploration. Existing staff experience confusion between their traditional roles as teachers, developing their students through their own chosen programmes of learning, and the more diverse, funding-driven roles which they are now being asked to undertake (Ollin, 1996:2).

The confusion experienced by lecturers is one that appears to mirror the confusion at senior management levels, often trying to control people through systems and treating them as robots. This usually causes two things to happen: people get around the system and it seems that the system is working (Ollin, 1996:33). The tendency to concentrate on paper evidence of accountability as opposed to producing a really effective and committed working organization, is the inevitable result of management and systems lacking the inherent capacity to utilise their human resources to adapt and to develop. The ideal should be to maximise the commitment of employees through the adoption of organic and developed structures in which the individual is encouraged to develop the habits of self-discipline and initiative (Ollin, 1996:5).

According to Idrus (1996: 34) the efficacy of implementing TQM in educational institutions is widely questioned. Although the successful application of TQM in

manufacturing companies can help to convince educational institutions of the positive impact of TQM, the changes in industry are not altruistic, but are internally generated and motivated. Literature, however, indicates that in the majority of cases the rationale for implementing TQM in educational institutions is externally motivated. Kaufman and Zahn (1993:22), however, argue that regardless of negative feedback on the implementation of TQM in educational institutions, the commitment to define and deliver quality is as important to education as to organisations in the world of business. Quality management, continuous improvement, client satisfaction, positive return on investment and doing things right the first time and every time, should be the intention of all educational organisations. Education, as other organisations, links ends and means to help learners to become competent in the world of tomorrow.

Kaufman and Zahn (1993:4) and Idrus (1996:38) believe that the components that have been missing from efforts to improve quality in educational organisations are mainly:

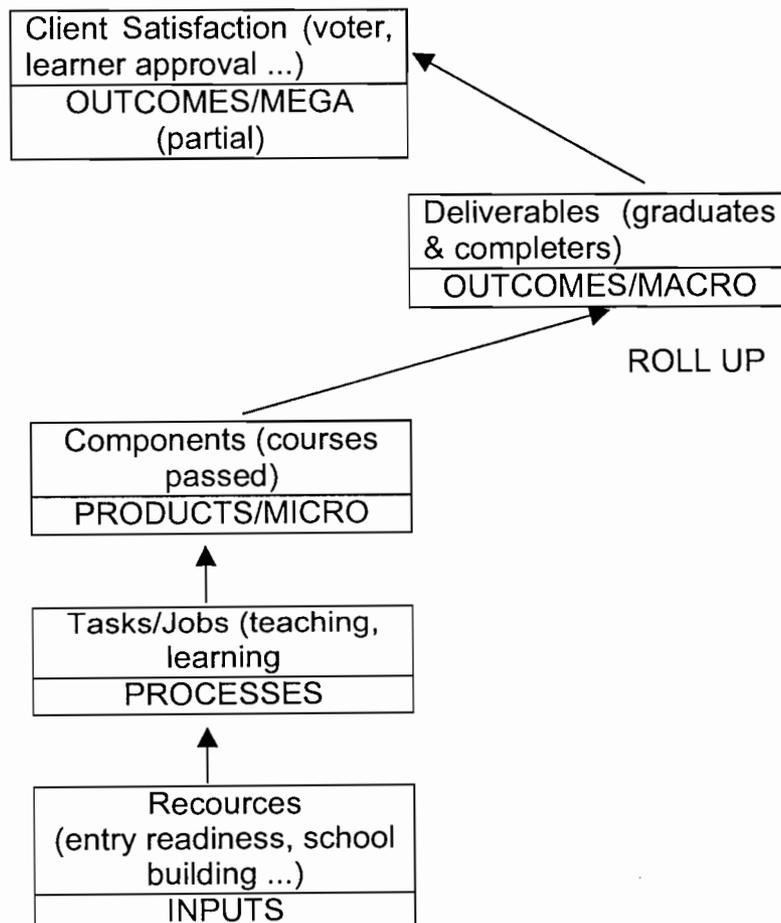
- a shared vision of the kind of world that is wanted for tomorrow's student;
- defined, measurable educational objectives related to an ideal vision;
- a "corporate culture" where everyone shares a passion to move continuously closer to the ideal vision and accomplishment of the set objectives;
- inability of the institution to define customers;
- a view of education as a service to clients;
- inability of the customers to influence the contents of the system;
- a process that encourages success for learners and other clients;
- a record-keeping system in which the achievement of set objectives can be measured, weaknesses can be identified and improvement can be fostered;
- a feeling of self-sufficiency among academic staff that leads to a belief that there is no need to consider customers;
- no clarity of purpose of the educational institution and no sense of priority;
- the complex delegation and decision-making process of most educational institutions;

- an individualistic, reductionist attitude amongst academics; and
- failing of educational institutions to assess themselves in terms of performance indicators.

In the educational sphere the implementation of TQM will necessitate changing the usual educational set of relationships to one with a clear customer focus. In order to be successful, institutions will have to realise that growth and long-term survival come from matching service to customer needs. Quality is what the customer wants and not what the educational institution decides is best for it. As TQM is a process that incorporates most of the above mentioned missing components, Kaufman and Zahn (1993:5-6) urges organisations that wish to achieve quality, to implement TQM.

A typical quality management process that starts with the best ingredients and then turn those into products and outputs that meet client needs, is illustrated by Kaufman & Zahn, (1993:18) in Figure 4.2.

**Figure 4.2 : A Typical TQM process (Kaufman & Zahn, 1993:18)**



In order to eliminate shortcomings in previous attempts at implementing quality management successfully, Kaufman and Zahn (1993:22-49) suggest that educational organisations attend to the essential building blocks of TQM.

#### **4.2.4 The building blocks of TQM**

The successful implementation of TQM in educational organisations will depend largely on the following building blocks of TQM:

##### **4.2.4.1 The role of management**

The conclusion of all major writers on quality is that quality management requires a commitment from senior management. Linked to purposeful leadership, educational institutions need well worked out strategies to deal with the competitive and results-oriented environment in which they operate. Weller (1996:38) state that management has the responsibility for initiating and demonstrating to the customer the return on quality investments. According to Sallis (1993:123) effective teamwork, leadership and strategy provide the engine for the transformational process of quality development. The processes required for developing a quality strategy include:

- a clear and distinctive mission;
- a strategy for achieving the mission;
- the involvement of customers, internal and external, in the development of the strategy; and
- the assessment of the institution's effectiveness against the goals negotiated with the customers.

Leadership has to put strategy into action and must communicate the vision of the institution to the staff. According to Sallis (1993:124) this requires a specific style of leadership which is characterised as transformational leadership. Management has to provide both the vision and the culture of a mutually supportive environment in which teachers and managers can realise their individual successes interlocked with team action. Sallis (1993:125) further states that senior management will not be committed to the process unless they are well informed about both the philosophy and the methods of quality management. According to him it is necessary to build up

a well -integrated and robust senior management team which can set an example to the teams in the rest of the institution.

#### **4.2.4.2 Deming's principles for education**

According to Kaufman and Zahn (1993:49) a tailoring of Deming's 14 points for successful implementation of TQM in educational organisations, will involve the following:

- Create constancy of purpose and a vision of what education will deliver, including measurable specifications for success.
- All stakeholders must work full time to create quality.
- Adopt a new philosophy: from institution-centered education to student-centered success, from teaching subjects to teaching students, from budget-driven strategies to strategy-driven budgets.
- Shift to self-evaluation and self-pacing of learning based upon an overall goal of success in and beyond the institution.
- Shift to an emphasis on results and not on inputs.
- Constantly improve the system of teaching, learning, educational support and service.
- Institute on-the-job training by providing in-service experiences that can lead to competence, empowerment, growth and self-development.
- Institute leadership by defining and moving constantly towards partnership-derived shared destinations.
- Drive out fear by rewarding reasonable risks taken to achieve institutional objectives.
- Break down barriers between classes, levels, specialties, schools, departments, administration levels.
- Eliminate slogans and numerical targets.
- Eliminate work standards (quotas) and management by objectives. Install a system for collecting and using valid performance data.

- Remove barriers that deprive people of their right to take pride in their accomplishments and contributions to the self and others, by providing a clear mission objective and by rewarding reasonable risks taken to achieve institutional objectives.
- Institute a process of results-referenced in-service education and self-improvement for all staff members.
- Involve everyone in the system to work towards transformation and towards the shared vision and mission of the institution.

Based on Deming's fourteen points for the successful implementation of TQM, it can be stated that an environment for thinking and delivering quality will have to be created, maintained and protected. Quality management is about change and seeks continuous improvement towards perfection.

#### **4.2.4.3 Critical success factors**

A number of critical actions must be taken to successfully implement TQM in educational organisations. Kaufman and Zahn (1993:25), Sallis (1993:112), Idrus (1996:37), Doherty (1994:89-97), Raubenheimer (1998:51), Samuel and Weam (1996:8), Murgatroyd and Morgan (1993:60-73) and Hickie and Sawkins (1996:1-5) identify the following critical success factors:

- TQM must have an impact on the culture of the organisation in order to achieve outcomes.
- A willingness to move out of present comfort zones in order to be able to use wider boundaries for thinking, planning, doing and evaluating. There needs to be a definite shift from a reactive to a proactive mode. Although system thinking (relating the whole and the parts) has been available for decades, educational organisations tend to ignore the larger context and focus on one aspect at a time.
- Everyone must demonstrate a passion for quality, must strive continuously towards improving the quality of what is used, done and delivered.
- Everyone must be on the same team, collectively contributing to achieve quality.
- All decisions should be made on the basis of solid, objective and relevant performance data.

- Assessing the current quality system situation to identify all the existing good practices.
- Provision of training so that staff are fully aware of all changes.
- The building of a cooperative team whose members put the processes of the TQM effort above comfort and continuously strive towards improvement.
- Changing the role of senior and middle management from controlling teaching and support staff and students to supporting them to achieve quality.
- Training of staff in quality concepts and thinking in order to facilitate the required change, as TQM's focus on the sovereignty of the customer may cause conflict with traditional professional concepts.
- Long-term devotion of the senior staff within the institution.
- Monitoring progress towards achievement of total quality.
- Using and linking all levels of results (mega, macro, micro) for defining and delivering quality.

TQM involves the entire organization. Often overlooked in educational thinking, planning and evaluation is the fact that there are three levels of results: mega-level results are build up from macro-level results, which in turn are an integration and collection of micro-level results. All levels of thinking, planning and evaluation are vital to define and deliver quality ( Kaufman & Herman, 1991:43). The three levels of results are indicated by means of organisational questions, represented in Figure 4.3.

#### **4.2.4.4 The Organisational Elements Model**

The Organisational Elements Model provides a detailed framework for relating what organisations do, deliver and accomplish. All organisations share similarities, use ingredients that it forms and shapes into something tangible which includes goods and/or services. These tangibles are then combined into something that can be delivered to external clients. According to Kaufman and Herman (1991:35) the Organisational Elements Model is not linear, lock-stepped or single-dimensioned. A change in one part of the educational institution causes, directly or indirectly,

changes in all other parts of the organisation. In Figure 4.4 the organisational elements and how they define what organisations do and deliver, are illustrated:

**Figure 4.3 : Organisational questions all educators must ask and answer (Kaufman & Zahn, 1993 : 29)**

Strategic Questions	Type of Planning	Primary Client and Beneficiary
1. Are we concerned with the current and future self-sufficiency, selfreliance, and quality of life of the world in which we and our learners live?	MEGA	Society
2. Are we concerned with the quality of life that our organization delivers to society?	MACRO	Educational System or School
3. Are we concerned with the quality of that which is turned out within our system and is used by internal clients as they do the business of the educational system?	MICRO	Individual or Small Group

TQM in education involves all the elements in the above figure. Three of these elements relate to results (outcomes, outputs, products), one relates to methods (processes) and the other to resources (inputs) (Kaufman & Zahn, 1993:33-34):

- **Inputs** are raw materials, existing facilities and available resources, human capital, buildings, equipment, existing objectives, policies, procedures and finances. In education it would include students, teachers, institutions, media resources, available learning materials, budgets, preservice training, levels, thus all the ingredients an educational system can or must use to do what it should do.

**Figure 4.4 : The organisational elements model and examples of each (Kaufman & Zahn, 1993 : 32)**

ORGANISATIONAL LEVEL	INPUTS (resources, ingredients)	PROCESSES (how-to's; means; methods; procedures)	PRODUCTS (en route - building, block-results)	OUTPUTS (the aggregated products of the system that are delivered or deliverable to society)	OUTCOMES (the contributions of outputs in and for society and the community)
EXAMPLES	Existing personnel; identified needs, goals, objectives, policies, regulations, laws, money, values and societal and community characteristics; current quality of life, learner entry characteristics, teacher competencies, buildings, equipment, etc.	Quality management – continuous improvement; teaching; learning; in-service training, managing, accelerated learning; site-based managing; accountability; etc.	Course completed; competency test passed; skill acquired; learner accomplishments; instructor accomplishments; etc.	Graduates; completers; dropouts; job placements; certified licenses; etc.	Self-sufficient, self reliant, productive individual who is socially competent and effective, contributing to self and others; no addiction to others or to substances; financially independent; continued funding of agency; etc.
CLUSTER SCOPE	EFFORTS		RESULTS		SOCIETAL RESULTS/IMPACT
PLANNING LEVEL	INTERNAL (Organisational)				EXTERNAL (Societal)
PRIMARY CLIENT OR BENEFICIARY	MICRO		MACRO		MEGA
	INDIVIDUAL OR SMALL GROUP		SCHOOL SYSTEM OR SCHOOL		SOCIETY/ COMMUNITY
STRATEGIC QUESTION	Are we concerned with the quality of what is turned out within our system and is used by internal clients as they do the business of the educational system?		Are we to be concerned with the quality of life which our organisation delivers to society?		Are we to be concerned with the current and future self-sufficiency, self reliance, and quality of life of the world in which we and our learners live?

- **Processes** are production methods and means, activities, applied skills, constructing and fabricating products, developing and training, personnel at work and quality management initiatives. In educational institutions, processes would involve teaching students, developing learning materials, scheduling, activities, in-service training of teachers and courses. Processes transform inputs into results and are thus the essence of any educational enterprise. Inputs and processes are the factors of production as they supply the ingredients for production and then transform the raw materials into products.
- **Products** are the micro-level building-block results of the process of transforming inputs through the application of processes. In education products would include a completed course, an accomplished instructional objective, an approved strategic plan or a passed exam. Products in an educational organization represent the building blocks of the system.
- **Outputs** are macro-level results. In education it may include graduates from an institution. After the student leaves the institution, completes the course or gets certified, there is an impact: consequences in and for the community and society. These consequences are termed outcomes
- **Outcomes** (mega-level results) involve customer satisfaction with outputs. In education it would, for example, refer to students getting and keeping jobs. Customer satisfaction is determined by the perceived usefulness of the outputs of the institution.

#### 4.2.4.5 Ends and Means

Ends refer to consequences, results and pay-off's. Means are the resources and ways through which these results are achieved. Objectives are ends referenced, as it focuses on what has to be achieved, who or what will demonstrate the achievement, what criteria will be used to indicate achievement and under what conditions the achievements will be observed (Kaufman & Herman, 1991:28).

Objectives should focus on ends and not means. After selecting the results to be achieved, the best ways to get there must be selected. According to Kaufman and Zahn (1993:35) the history of modern education revolves around the changing of

means, for example, more teachers, in hopes that better ends would be delivered. Often means are selected without defining the end that has to be delivered.

#### **4.2.4.6 Performance indicators**

McCulloch and Tett (1996:1) and Nuttall (1997:10) define performance indicators as a standardised approach to the professional assessment of an organisation's effectiveness and efficiency which leads to a profile of the organisation's performance on fundamental matters. Performance indicators include empirical data (qualitative and quantitative) which describe the functioning of an institution and the way the institution pursues its goals. This implies that they are context and time related as the accumulation of indicators over a period of time would highlight the quality of education as an ongoing process. Performance indicators must reveal developments rather than present "snapshots" (Segers & Dochy, 1996:121). The choice of performance indicators depends upon the chosen definition of high quality. In higher education, performance indicators have the following purposes (McCulloch & Tett, 1996:2 and Nuttall, 1997:7-10):

- It aids the effective and efficient management of the institution.
- It supports the management process at all stages.
- It helps to ensure that objectives and targets are clear to those responsible for achieving them.
- It measures key aspects to obtain a general picture of current conditions rather than in-depth descriptions.
- It provides a basis for resource allocation.
- It assists delegation of authority.
- It monitors progress towards the attainment of objectives.
- It evaluates whether aims and objectives have been achieved.

According to Segers and Dochy (1996:9) and Shavelson (1991:1) the development of performance indicators is an interactive process which is time-consuming as it has to be developed in policy context. In the development of performance indicators a reasonable first step is to determine which components and their indicators adequately specify a comprehensive monitoring system. Potential indicators would

consider inputs, processes and outputs. As no indicator system could accommodate all of the potentially important indicators identified by a comprehensive process and still remain manageable, the second step would be to prioritise, and then to develop a valid and useful set of indicators.

Ashcroft and Foreman-Peck (1996:6) see performance indicators as a method of linking quality and standards. In this context performance indicators may create problems by focusing on what is measurable or objectively observable. This can lead to an emphasis on short-term (for example, the number of students obtaining employment) at the expense of long-term effects (for example, the empowerment of students to become life-long learners) and efficiency (for example, the unit costs in delivering a programme) at the expense of worthwhileness (for example, the values that are promoted by that programme). As a result, it may lead to actions that are not academically or morally justified or go unchallenged. According to Ashcroft and Foreman-Peck (1996:6) quality systems that focus exclusively on standards are often experienced as restrictive by academic staff.

Nuttall (1997:10) compares a performance indicator with a standard or criterion level. The maintenance of standards implies that performance indicators must in general be accepted as valid and reliable statistics. Whatever the aims, purposes and processes of education, indicators must measure what they are supposed to measure and must do so consistently (Ashcroft & Foreman-Peck, 1996:7).

As the functioning of an institution can hardly be expressed in absolute measures, performance indicators must be interpreted as signals or guides. This implies that they can be of help in reaching judgement but cannot be a substitute for it. Performance indicators should serve the purpose of acting as a warning system that something may be wrong (Segers & Dochy, 1996:8).

#### **4.2.4.7 Defining needs**

A need indicates the gap between the institution's current results and its desired or required results (Kaufman & Zahn, 1993:38). It is not a gap in resources, processes and methods. A gap in a method, resource or process is referred to a quasi-need. Once needs are identified, they should be arranged in priority order. Based upon the priority order, the best ways and means to close gaps must be identified.

#### **4.2.4.8 A needs assessment for TQM initiatives**

A needs assessment aims at identifying gaps between current results and desired ones, places them in priority order and selects those to be reduced or eliminated (Kaufman & Zahn, 1993:41). This process allows institutions to analyse the causes for gaps in results. From the data generated by the needs assessment and the needs analysis, ways can be identified to close the identified gaps.

#### **4.2.4.9 Needs, opportunities and maintenance**

Although a need is defined as a gap in results, it is important to keep gaps in results from occurring and to maintain that which is working well. As part of the needs assessment, areas that should be maintained and areas for which no current needs exist, should be identified. According to Kaufman and Zahn (1993:43) the identification of possibilities and opportunities go hand in hand with the maintenance of what is working well in an institution.

#### **4.2.4.10 Quality control**

Quality control primarily focuses on the extent to which the procedures and conditions which are believed to result in appropriate levels of quality are present, are followed and are effective in meeting their intended purposes (Jackson, 1996). The emphasis of quality control is on formative, process-focussed feedback on performance rather than summative, product-focused, consistent, comparable and reliable results ( McCulloch & Tett, 1996:1). Jackson (1996) describes quality control as a range of different processes, used to check the health of an academic department's activities including its arrangements for maintaining and improving the quality and standards of its provision. Used in this sense its main focus is on quality management systems.

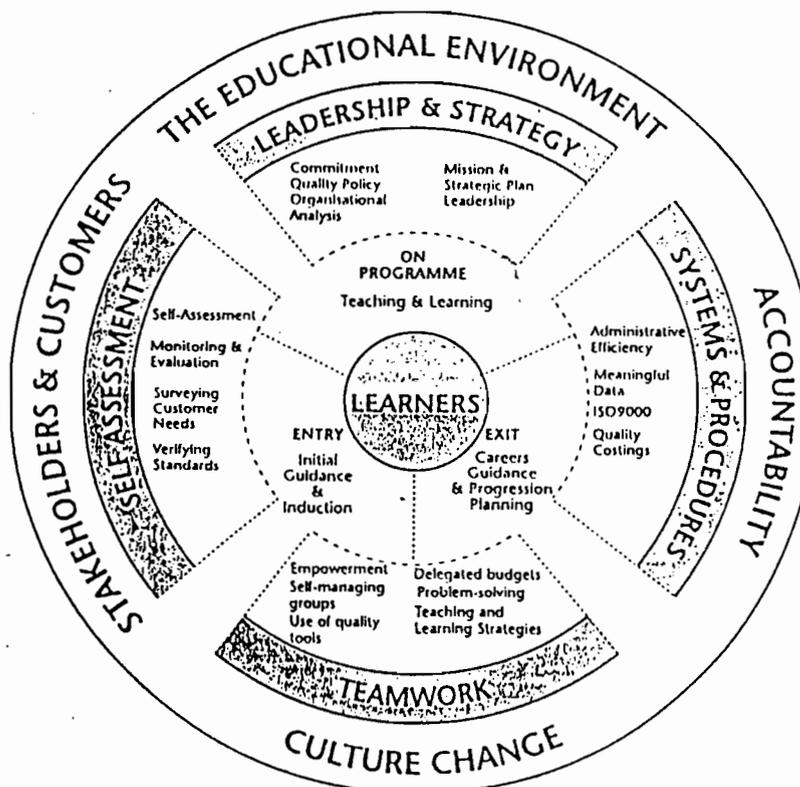
According to Hogan (1994:3-14) and Chadwick (1996:4) the element of quality control in TQM basically involves:

- letting the planned systems, procedures and processes run in order to establish their stability;
- ensuring that available departmental resources are properly allocated and utilised to optimum levels;

- ensuring that plans, policies and procedures are followed;
- monitoring results achieved and rectifying deviations from the standard immediately; and
- identifying areas or processes within the process that may require attention for possible further improvement.

In Figure 4.5 a framework that charts the difference in emphases of different quality control processes is illustrated.

**Figure 4.5 : A framework for the quality process (Jackson, 1996)**



The focus on in-process measures permits evaluation of outputs as each major activity in the work process is completed. If a problem arises, a work-team can immediately shift into a problem-solving mode. If no problems are encountered, the output can be completed and delivered to the client.

#### **4.2.4.11 Strategic and tactical planning**

**Strategic planning** is a proactive process that identifies the future as well as the requirements and means for an institution to achieve it (Kaufman & Zahn, 1993:44). According to Luby (1996:2) there is no one best way of formulating strategy as the strategy making process appropriate for one organization facing a particular type of

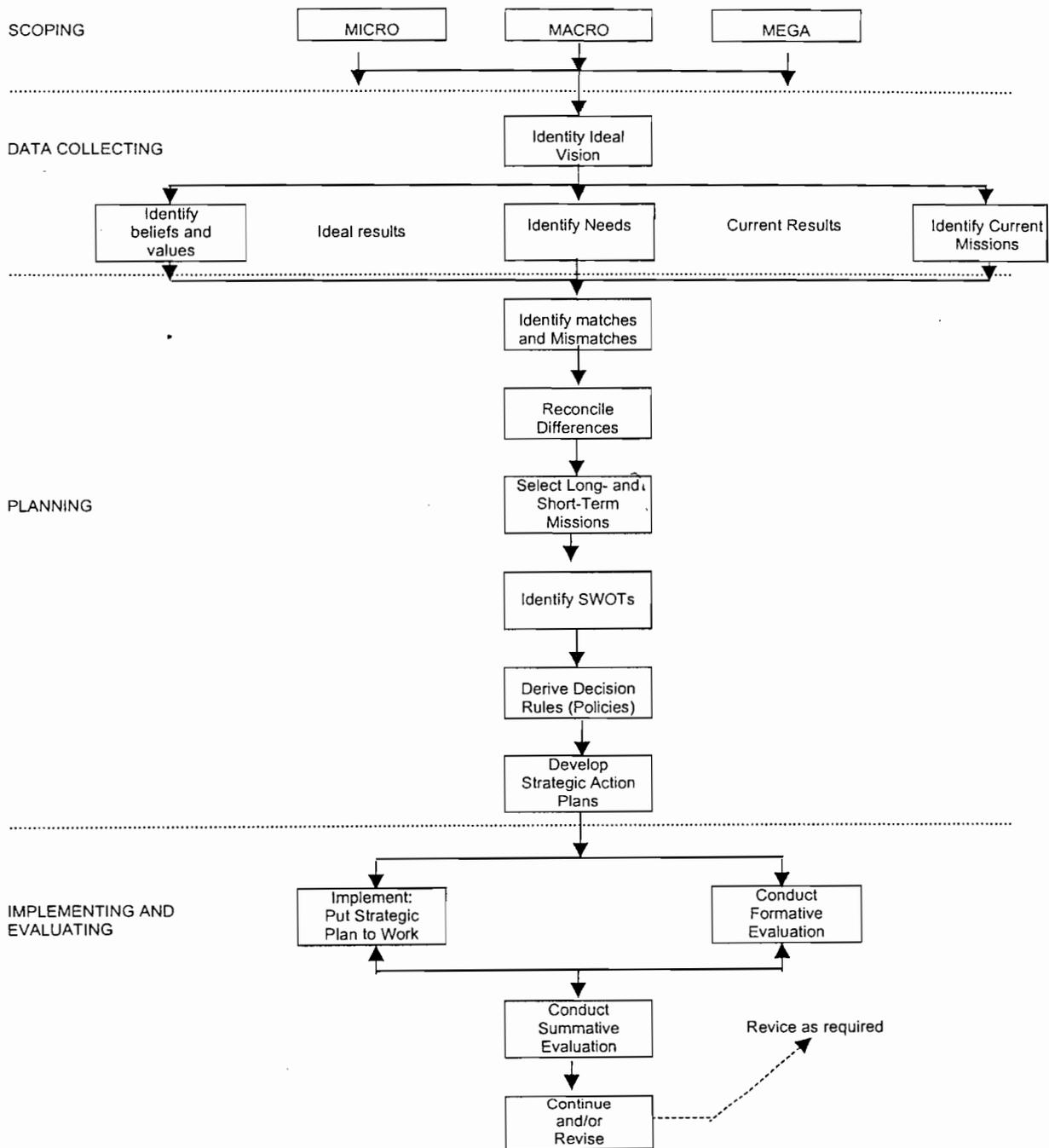
environment, may well be inappropriate for another organisation in a different setting. It is thus essential that managers of tertiary institutions understand the complexity of the environment in which the organization operates. An emergent strategy-making process is adopted when the environment directly imposes a pattern of action on an organization (Luby, 1996:4).

Within the phases of scoping, data collection, planning and implementing and evaluating, strategic planning involves a number of steps that are illustrated in Figure 4.6.

According to Kaufman and Zahn (1993:44) strategic planning can be turned to reality through the process of TQM. As a process, TQM systematically builds to achieve the shared vision and objectives identified by the organisation's strategic plan. In order to enhance the viability of the institution, it is important that all staff should have a strategic perspective and that each staff-member has a personal development plan which takes cognisance of the institution's strategic plan. This will ensure that the strategic plan becomes the foundation for action for each member of the institution's staff (Luby, 1996). **Tactical planning** identifies the best ways and means to provide the building blocks to achieve the vision and the mission of the educational institution.

By integrating strategic planning and quality partnerships, the right place to head for, as well as building the commitment to get there, can simultaneously be achieved. Everyone, the strategic planning team and the quality team, will together strive to deliver quality. Merging of the two teams will deliver two critical TQM elements: all on one team and a passion for quality. Kaufman and Zahn (1993:45) state that as the merged teams do the planning, the databased decision-making process will start to develop. The databased planning and results-referenced decision making will provide the practical basis for tactical planning in terms of what has to be accomplished to achieve the desired results. Databased decision-making will further provide the basis for evaluation of progress, as the institution continuously improves towards achieving the objectives and thus the total vision. Based upon the evaluation of results, it can be decided what to eliminate, what to change and what to keep. The criteria for evaluation are directly derived from the desired results provided by the needs assessment.

**Figure 4.6 : A four-cluster strategic planning framework for the quality process (Jackson, 1996)**



Based on the above discussion on the building blocks of TQM , it seems that the implementation of TQM could offer a great deal to educational organisations. However, in order to implement TQM successfully, Deming's 14 points will have to be translated into action and results.

#### **4.2.5 The implementation of TQM in educational organisations**

The implementation of TQM in an educational organisation will involve a number of steps, based on Deming's 14 points, the principle of all on one team, a passion for quality and data-based decision making. The steps for implementing TQM will now be discussed.

##### **4.2.5.1 The decision and commitment to deliver quality**

The first step in the implementation of TQM is to prepare a brief statement of the intent of TQM and the importance of implementing the process for the institution, the community and the student. An institutional meeting must be scheduled for laying out the details of what TQM is, what will be delivered through its implementation and what it will take to be successful. The steps and commitments that will be required must be identified in clear, concise and objective terms (Kaufman & Zahn, 1993:56)

The strategy, relevance and benefits of TQM need to be effectively communicated as there can be a great deal of misunderstanding about the purpose of quality. The long-term nature of the programme and the reasons for embarking on it must be made clear (Sallis, 1993:127). Management has to share the strategy and outline to employees what needs to be done to make mission statements and strategy documents a reality.

The decision to continuously improve quality should be driven by intrinsic factors. TQM can only be successful when people at all levels of the institution commit to, and participate in the process (Murgatroyd & Morgan, 1993:61). The basic principles of TQM must be accepted by all.

Although most people will commit themselves to the process of TQM once they realise that it is a serious effort to which they can contribute, the organisation should not proceed with implementation under the following circumstances (Kaufman & Zahn, 1993:62):

- Executive management and the institution's board do not endorse and participate in the process.
- Significant numbers of potential partners do not commit to the process.
- Most people are passive to what can be delivered through TQM.

Once the commitment to quality, the basic characteristics of quality and the process of continuously improving education has been made, a quality team has to be structured.

#### **4.2.5.2 Building the quality team**

Teamwork is the element that links teacher professionalism to the quality development process. It is the framework in which innovation and change become accepted facts of institutional life (Sallis, 1993:128). The successful organisational structure of a quality institution rests on the mutual recognition of all people's roles within the institution and the need to deliver services internally to reach agreed-upon standards.

Most important in building a quality team is having a common purpose. Everyone in the organization must have the opportunity to become part of the team. TQM partners represent all that has to be used, developed, delivered and evaluated. Quality depends on their vision, abilities, commitment and motivation (Kaufman & Zahn, 1993:62).

According to Kaufman and Zahn (1993:63) and Murgatroyd and Morgan (1993:73) successful institutional quality teams have the following characteristics:

- Everyone agrees to work together towards a common destination.
- Each individual is important and is expected to contribute toward the shared effort.
- Each person is prepared to provide support and assistance to others.
- Everyone is honest with themselves and others.
- Data collection, evaluation and feedback are used for improving and not for blaming.
- Objectives are stated clearly and without confusion.

- Means and resources are selected according to the results to be obtained, not the other way around.
- Constant progress and cooperation characterises everyone's efforts and contributions.
- Everyone looks for opportunities for successful action.
- They maximise the creative talent within the organisation and promote learning.
- They transfer knowledge and skills.
- They encourage a wide range of problem-solving.
- They promote problem ownership.

A designated quality facilitator who should report directly to the head of the institution must be appointed. The role of the quality facilitator is not to undertake all the quality projects, but to assist and guide teams in discovering new ways to tackle and solve problems. It is the responsibility of this person to publicize the programme and to lead the quality steering group in developing the quality programme. The quality "champion" thus drives the quality improvement process (Sallis, 1993:125).

The first task of the members of the quality team will be to identify the following (Kaufman & Zahn, 1993:57-58; Murgatroyd & Morgan, 1993:75):

- the clients of the institution;
- what client satisfaction means and how it could be measured;
- the characteristics of the outputs that would deliver client satisfaction as well as how it could be measured;
- the building-block results that would deliver client satisfaction and how it could be measured;
- the activities that would deliver the building-block results and the specifications for each;
- the resources that would be required to do what is intended to achieve the building-block results;
- the actions that would be needed from each person to make certain that the TQM process is implemented effectively and efficiently; and

- the data that would be required for making decisions on the progress of quality, what to retain, what to change and what to eliminate.

#### **4.2.5.3 Select the quality level**

Kaufman and Herman (1991:167) state that quality may be improved at three levels: mega/outcome, macro/output and micro/product. The quality level at which the TQM process will focus, must be formally selected. Kaufman and Zahn (1993:58) suggest that since TQM intends to be client centered, the focus should be on the mega level.

#### **4.2.5.4 Define the ideal vision and mission for the TQM process and for the institution**

The **vision** of the educational institution should be seen to embody two components: a guiding philosophy and a tangible image (Murgatroyd & Morgan, 1993:79). It must focus on the time when education will be put to use and must consider the threats and opportunities that those being educated will face. The focus must be on how the system should change to adapt to and possibly influence the future. It should thus aim at meeting the future in the best possible way (Doherty, 1994:90).

The vision for the TQM process is targeted on the results level selected. A vision for TQM activities identifies who has to be the primary client of what the institution should do and deliver. It provides a common purpose towards which everyone in the institution can work. A vision is an ideal objective and a shared image of fundamental purpose. The vision statement however, does not include any means or "how-to -do-its" (Kaufman & Herman, 1991:50). Vision statements must be summarised and any resources and process statements converted to results statements.

According to Murgatroyd and Morgan (1993:83-84) a vision statement has three functions: to inspire, to act as a cornerstone for decision-making and to enable all to find common points for focusing energy to achieve sustainable quality improvements.

A **mission** statement provides direction without specific criteria for measuring success. It is only measurable on an ordinal or nominal scale (Kaufman & Zahn, 1993:73). A mission objective sets the direction for everything that follows. It is a clear declaration of where the institution is heading and adds precise criteria to a mission statement. These criteria are measurable on an interval or ratio scale. A

mission objective is a mission statement plus precise and exact standards by which to determine success.

According to Doherty (1994:136) mission statements and planning efforts in higher education are usually too global, involve too many goals and fail to differentiate between the crucial and the trivial. A sharply focused mission statement provides the context needed for selecting a mutually supporting cluster of goals that reflect the basic values of the institution.

#### **4.2.5.5 Needs assessment**

Delegating the customer is the purpose of TQM. According to Sallis (1993:124) this is achieved by a continual striving to meet the needs of both internal and external customers. Customer needs are established by regularly soliciting their views. It is important to involve customers in the process as it is their views and not those of the institution's management that count. Unless the link between listening and action is established, the activity of sampling customer requirements has little purpose.

The databased decision-making element must be instituted by completing a needs assessment at each of the levels of results (mega, macro, micro, process and input). Two types of needs data should be included: hard data which includes results that can be independently verified and soft data which includes personal data and non-independently verifiable perceptions (Kaufman & Herman,1991:145).

According to Kaufman and Zahn (1993:76-82) and Kaufman and Herman (1991:151) there are a number of basic steps involved in doing a needs assessment:

- Decide to implement data-based decision making based on the needs assessment, as this will allow the TQM team to develop an action blueprint.
- Select the needs assessment and planning level and obtain acceptance of the choice.
- Identify the needs assessment associates from the TQM partnership.
- Assure the TQM needs assessment partners' participation.
- Collect both internal and external needs data.

Based on the results of the needs assessment, gaps between desired results and current results must be identified. Needs should be summarised and prioritised (Kaufman & Zahn, 1993:59).

#### **4.2.5.6 Allocate the meeting of needs**

A decision must be taken as to who will be responsible for meeting the selected needs. Team members should, however, constantly share their work, as most needs and problems are interlinked and the relationship between problems and functions can often provide ideas for fixing what is not working and deal with underlying causes, not just with symptoms (Kaufman & Zahn, 1993:60).

Staff development is an essential tool for building the awareness and knowledge of quality and can be the key strategic agent for developing the quality culture. According to Sallis (1993:126) it is important that everyone is trained in the basics of TQM in the initial stages of implementation. Staff need knowledge of some of the key tools including teamwork, evaluation methods, problem-solving and decision-making techniques. Training should be used as a flagship for strategic change.

#### **4.2.5.7 Identify and select ways to meet needs**

Possible methods and means must be identified and the most efficient and effective ones to meet the identified needs, must be selected. According to Sallis (1993:128) this approach focuses on getting things done and achieving initial successes. It focuses on what the institution needs to improve and on selecting the correct tools to do so. This approach needs to be followed by a thorough analysis and a strategic approach. It is nevertheless important to demonstrate those important first achievements. It could be advisable to encourage pilots for everything, as pilots have the advantage of speeding up innovation, providing sources of excitement and interest.

Because the request for methods and means is based on gaps in results and on return on investment, the TQM team will have a good chance of successfully negotiating the resources and methods (Kaufman & Zahn, 1993:60).

#### **4.2.5.8 Install and institutionalise**

Continuous improvement must be instituted in the institution. It must become part of everyday life for everyone, part of the corporate culture and an integral part of all daily activities and work. It is essential that the efforts of each team member be applied towards total quality and the ideal vision of the institution (Kaufman & Zahn, 1993:61).

#### **4.2.5.9 Continuous progress and contribution**

The TQM process must be controlled. In order to have a successful quality system, data must continuously be collected and reported to those who require it in order to improve. Evaluation should be the constant companion of TQM. When there is a shortcoming revisions should be made. Accomplishments must constantly be reviewed with objectives and renewal must take place (Kaufman & Zahn, 1993:87).

Mechanisms need to be developed to feed the results of this auditing back into the strategic planning process. According to Sallis (1993:129) 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. Regular review and evaluation need to be an integral part of the programme (Sallis, 1993:27).

The steering group should undertake regular reviews and the senior management team should consider their reports and carry out its own monitoring. A system for the internal verification of assessment arrangements needs to be in place and documented. No new initiative should be undertaken until the successes and failures of the existing ones are fully understood (Sallis, 1993:130).

#### **4.2.5.10 Recognising quality and awards**

According to Kaufman and Zahn (1993:88) it is critical that the desire for an award should not be the driving force behind a quality improvement initiative. More important than winning an award, should be pursuing quality simply because the results and payoff's will be worthwhile for their own sake.

#### 4.2.6 Summary

Although there seems to be several barriers to effective implementation of TQM in education institutions, for example, the apparent lack of business experience and knowledge, limitation of financial as well as human resources and time required for implementation, the implementation of TQM can promote institutional growth, change customer expectations, make work more enjoyable and improve poor institutional performance.

TQM fits well into the general philosophy of education, although less frequently the practice. The ideas of client centeredness, which are at the heart of TQM, are in tune with much educational philosophy. Although all institutions claim to be student centered, the difference between their aspirations and a total quality institution is that of a comprehensive framework to assure that promises to customers are met. A TQM approach, focusing on a clear identity, well-defined standards and customers' entitlements are necessary features of self-confident institutions. Institutions need to plan for their own and their customers' future.

In order to successfully implement TQM institutions will need to produce a coherent and integrated approach to quality management, which is founded on the commitment and goodwill of staff. TQM emphasises the concept of a new management theory and a complete turn-around in corporate culture. Senior management must establish a controlled, customer-focused, continuously improving organisation. In such organisation there are requirements, but in practice it is left to the organisation itself to define these requirements to be in harmony with TQM

The implementation of TQM in educational institutions involves tremendous organisational involvement and organisational change. As no institution can purchase TQM off the peg, TQM should be developed from existing good practice within the institution. What TQM does is to build on existing quality and develops it into continuous quality improvement.

TQM is a management tool that aims for "total" and "quality assurance". The real power of TQM derives from its totals, as it provides a framework, or model, for combining disparate ideas into a unified whole. Although there are many aspects of TQM that are hardly new and many of its insights into issues such as product assessment, management structures and participate quality control can be paired

with similar writings over many years, the quality of this model for quality assurance lies in the coming together of all these aspects in one coherent and persuasive argument for improvement towards total quality.

According to Strydom (1992:ix) many higher education institutions haphazardly apply business-oriented models for quality assurance as a means for survival during times of external pressure. Strydom (1992:12) advocates that TQM is an organisational strategy that makes quality the responsibility of all employees and its primary goals are to reduce costs which derive from deviations from performance standards and maximising the quality of products and services. Even though a quality assurance system can consist of various purposes, procedures, processes and actions, real and enduring attention to quality can only come about through the actions of higher education institutions themselves. Quality in higher education institutions can be achieved by implementing the strategic management model for purposes of internal quality assurance which has as its cornerstone institutional self-evaluation.

The strategic management model for purposes of internal quality assurance in higher education will now be discussed.

### **4.3 THE STRATEGIC MANAGEMENT MODEL (SMM) FOR PURPOSES OF INTERNAL QUALITY ASSURANCE IN HIGHER EDUCATION INSTITUTIONS**

#### **4.3.1 Introduction**

Although, not disagreeing explicitly with the implementation of TQM, Strydom (1992:1) chooses to endorse the statement of the Department of Education (1992:38), namely that quality assurance and the measurement of academic standards should be based on two major considerations: the quality of academic staff and the quality of the educational process. According to Strydom (1996:14) self-evaluation at institutional and programme levels should be the heart of any quality assurance system. Although this may introduce subjectivity and some variation to the system, it can be controlled through the use of information sources and second opinions or independent reviews. However, regardless of the existence or activities of any external quality assurance agencies, the major responsibility for internal quality assurance rests with the institutions themselves (Strydom, 1996:3).

Most quality assurance systems reveal a tension between demands for accountability on the one hand and demands for improvement on the other hand (Webstock, 1999:13). Accountability is usually regarded as external to the institution and improvement as internal. It is necessary to find a way to bring these two closer together or to at least, keep them well balanced. Elements that may support improvement include an emphasis on self-assessment, peer evaluation, operational recommendations and no direct linkage between financial consequences and evaluation results, whereas accountability is supported by the elements of public reports, independent experts, meta-evaluation and follow-up evaluation by the government or a government agency (Fourie & Strydom, 1999:18-19).

Strydom (1992:4) states that it is clear that academic leaders in South Africa agree on the fact that self-assessment, also referred to as self-evaluation, should be the basis of a systematic process of internal quality assurance in higher educational institutions. He suggests the development of a self-regulatory system in which higher education institutions themselves are responsible for the maintenance of academic quality and in which institutional managers are responsible for designing planning and policy processes so that the results of self-evaluation can be utilised in the decision-making procedures of the institution.

The quality assurance model that is suggested by Strydom (1992:iii) is constructed for the integration of self-evaluation into the process of strategic management.

#### **4.3.2 The philosophy of the strategic management model to internal quality assurance**

The philosophy of the strategic management model to internal quality assurance is based on the process of institutional self-evaluation. The Technical Committee (DoE, 1998:158) defines the underlying philosophy of self-evaluation as being accountable and seeking improvement. Strydom (1992:vii) defines self-evaluation as a process whereby an institution deliberately collects information about itself in order to determine what action needs to be taken in order to put into effect those decisions that will enhance its activities and result in corrective measures. Institutional self-evaluation is an aid to management as it evaluates institutional mission accomplishment and facilitates strategic and operational management (Strydom,

1992:vii). The process of self-evaluation should lead to institutional development and should be integrated with it (Hopkins, 1989:4).

According to Strydom (1992:2) quality assurance models, purposes and procedures are firstly designed to provide assurance to the public at large that academic and other standards are being met and that institutional goals are being achieved. It is further used to improve a higher education system over time through individual and collaborative self-discovery and peer-review. Quality assurance procedures have two dimensions, namely internal dimensions which include continuing or formative self-assessment accompanied by corrections by individual staff or peers, and external dimensions which include periodic, collaborative, formative and summative self-evaluation. Webstock (1999:13) states that the dimension of internal quality assurance through self-evaluation is critically important, as it is through self-evaluation processes that the need for improvement can be perceived and that actual improvement can be brought about.

According to Strydom (1992:vi) the concept of quality in education is not restricted to educational outcomes, as it relates to a variety of factors. Quality in education includes educational processes that indicate the ways in which an institution attains its educational goals and objectives and inputs which refer to the resources required by the institution to attain its goals and objectives.

Strydom (1992:vii) interprets the responsibility for the quality of activities within an institution as a direct management function. In linking the desire for quality in an institution to management, he defines quality management as a system of activities directed at gathering, analysing and using information in terms of the functioning of an institution. The information that is obtained may then be used to maintain the level of functioning, to improve where necessary and to demonstrate accountability.

A quality assurance system is purposive when its constancy of purpose is determined by an understanding of its customers. Driven by its purpose, a quality assurance system consists of processes that function as subsystems to support the purpose of the larger system. The role of management in an institution is to hold all of this together, to assure that all members see the institution as their own, understand the meaning of systems and clearly identify with the aim of the system. Assuring quality is the responsibility of every staff member and cannot be delegated

to a specialised group within the institution. Continuous improvement is dependent on the institution's commitment to provide appropriate staff development and financial resources where necessary (Webstock, 1999:13).

The philosophy of the strategic management model for purposes of internal quality assurance is supported by a number of key attributes (Strydom, 1992:3 and Webstock, 1999:14):

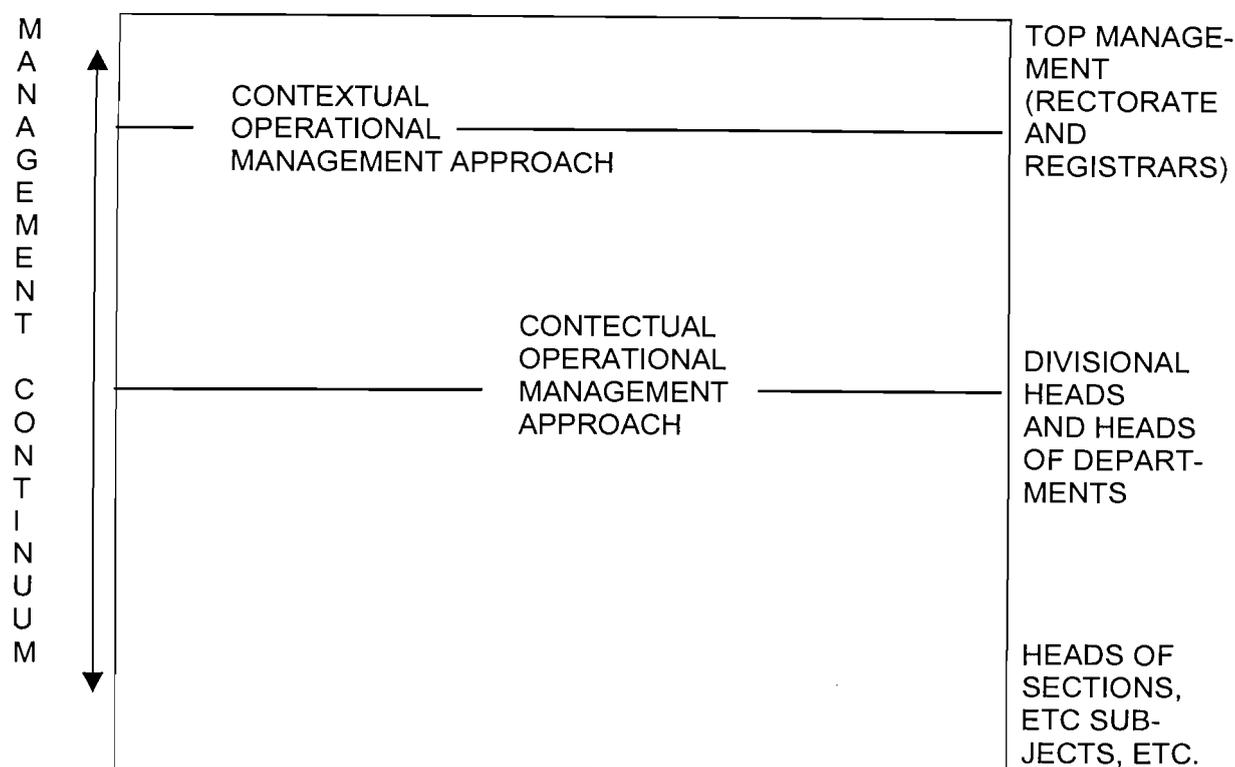
- It would have the purposes of quality assurance and quality improvement.
- It would be institution centered.
- It would have internal as well as external dimensions.
- Self-evaluation would be the cornerstone.
- The measures of quality would be general consensual attributes of quality as well as the achievement of stated institutional or programme goals.
- The system would be regular and cyclical.
- It would be comprehensive, as all processes and programmes would be reviewed in a five to ten year cycle.

According to Strydom (1992:12) the successful implementation of the strategic management model for purposes of internal quality assurance will depend largely on an in depth understanding of the proposed management model for higher education institutions and the concept of strategic management.

#### **4.3.3 A management model for higher education institutions**

The proposed strategic management model for purposes of internal quality assurance in higher education institutions has been widely discussed and put into practical use in the management of many higher education institutions in South Africa. The features of this model were, according to Strydom (1992:12), most relevant when conducting research on internal quality assurance through the process of self-evaluation. According to Strydom (1992:13) the basic focal point of the proposed management model for higher education institutions is a strategic approach to management. In Figure 4.7 a basic management model for higher education institutions is illustrated:

**Figure 4.7 : A basic model for college management (Strydom, 1992 : 13)**



**Contextual-strategic** management indicates an approach according to which management takes place strategically, within the context of the structure and direction of the institution on the one hand and within the context of the interaction between the institution and its environments on the other hand. Contextual-strategic management implies a process of analysis with a strategic focus, strategy formulation, strategy implementation and strategy evaluation and feedback (Strydom, 1992:14).

**Contextual-operational** management refers to an approach according to which strategic planning is made operational in departments within the context and direction of the institution (Strydom, 1992:14).

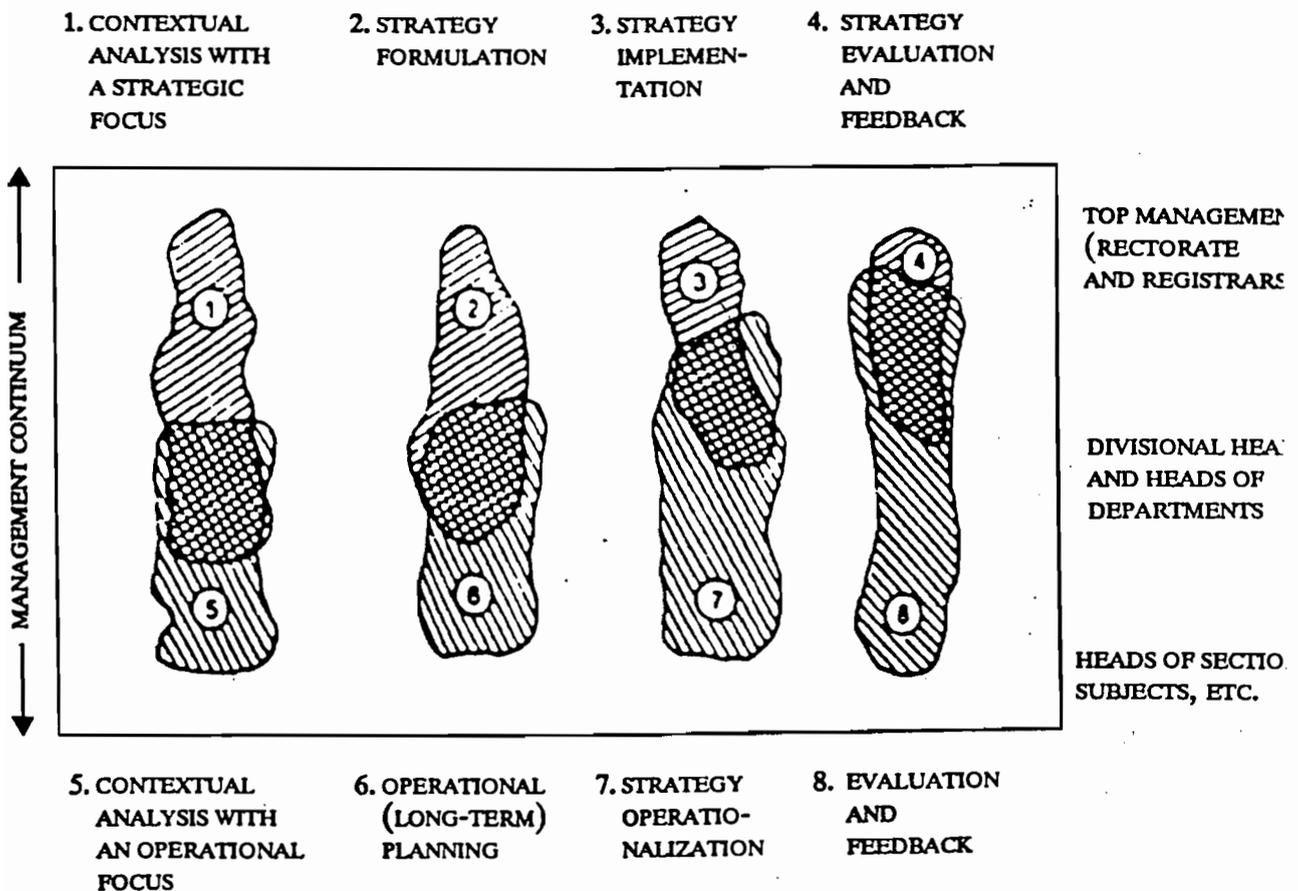
**Operational** management implies a process of analysis, operational planning, strategy operationalisation and evaluation and feedback at departmental or programme level (Strydom 1992:14).

It is impossible to draw a clear distinction between the contextual-strategic and contextual-operational management areas, as there is always intertwinement of management responsibilities allocated to, for example, the rectorate, heads of departments and heads of sections of an institution. It also happens that members of

the rectorate of an institution become involved in the management of contextual-operational facets of the institution, while heads of departments may become involved in contextual-strategic issues on account of specific interests or expertise (Strydom, 1992:14).

The implications of the contextual-strategic and contextual-operational approaches are illustrated in Figure 4.8.

**Figure 4.8 : A detailed framework for college management (Strydom, 1992 : 15)**



As indicated in figure 4.8, the dynamics which keeps the different facets of strategic management bound together, are very flexible and cannot be precisely and neatly demarcated because of the complex formal and informal authority relationships, communication and decision-making processes in an institution (Strydom, 1992:14).

#### 4.3.4 Strategic management

The implementation of any quality assurance system in a higher education institution will result in remarkable organisational change. Any major organisational change

should involve three distinct conditions: the future state that the leadership wants the organisation to reach; the present state: where the organisation currently is; and the transitional stage: the set of conditions that the organisation must undergo to move from the present to the desired future state. In managing the overall process of change it is important to determine the major tasks and activities of the transitional period as well as the structures and management mechanisms for accomplishing those tasks (Stoner & Freeman, 1992:408). During the period of change, a management system that creates the least tension with the ongoing system and structure and the most opportunity to develop and facilitate the new system for the transitional period, is most appropriate. According to Basson *et al.*, (1991:646), management plays a strategic role in any change, whether as initiator or as supporter. A strategic approach to the management of change is essential for a systematic attempt to redesign an educational organisation in such a way that it will prosper in future.

Hartshorn (1992:1) defines strategic management as a conscious process by which an organisation assesses its current position and the most probable future condition of its environment, identifies possible future states for itself and then develops organisational strategies, policies and procedures to achieve the desired future state. Strydom (1992:viii) defines strategic management as "an effort to make this year's decisions more intelligent by looking toward the probable future in coupling the decisions of the organisation to an overall institutional strategy". Kaufman and Herman (1991:41) state that strategic management is an outside-in as well as an inside-out process which scans current realities and opportunities in order to develop useful strategies and tactics for the future. Strategic management can thus be described as the ongoing process of ensuring a competitively superior fit between an educational organisation and its ever-changing environment. It involves a pattern of decisionmaking in an organisation that determines and reveals its objectives, purposes, goals, policies and plans for achieving those goals.

Although the use of the strategic management model proposed for colleges (Figure 4.7) leads to the integration of strategy formulation, strategy implementation, operational planning and strategy operationalisation, they can conceptionally be perceived as different processes (Strydom, 1992:15). In practice, contextual analysis with a strategic focus and contextual analysis with an operational focus are

integrated into some form of analysis with a focus. The components of strategy evaluation and feedback and evaluation and feedback are integrated as self-evaluation at institutional and departmental levels. Self-analysis and analysis, together with planning, are sub-functions of good management.

According to Du Toit (1995:17) strategic management is a system of corporate values, planning capabilities and organisational responsibilities that couple strategic thinking to operational decision making at all levels and across all functional lines of authority in an institution. Strategic management as an approach for managing strategic change, consists of :

- a well defined strategic framework;
- a strategically focused organisation;
- widespread strategic thinking capability;
- coherent reinforcing management processes such as negotiation of objectives, review of progress and incentives; and
- a supportive value system and climate.

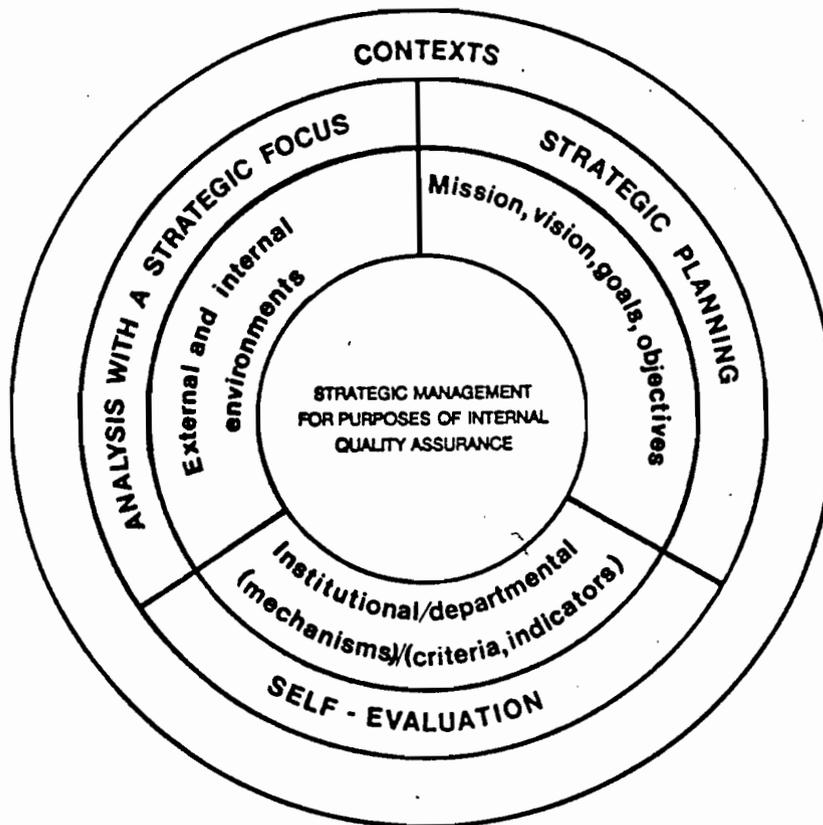
The approach of strategic management meets the requirements of a management process in which self-evaluation is part of the ongoing and essential life of an institution. Kells (1988:148) states that this can only be achieved when self-evaluation proceeds at different levels, sensitive to local needs.

The proposed model for internal quality assurance represents a strategic approach with the emphasis on strategic management as a process, comprising three important sub-processes, namely analysis with a strategic focus, strategic planning and institutional self-evaluation which will now be discussed.

#### **4.3.4.1 The components of strategic management for purposes of internal quality assurance**

The components of strategic management for purposes of internal quality assurance, as illustrated in Figure 4.9, are always related to the metacontext of the institution and should be integrated at the institutional and departmental levels of the institution.

Figure 4.9 : A strategic management model for purposes of internal quality assurance (Strydom, 1992 : 18)



In the discussion that follows the components of the above model will be discussed as seen in relation to different contexts.

**(a) Analysis with a strategic focus**

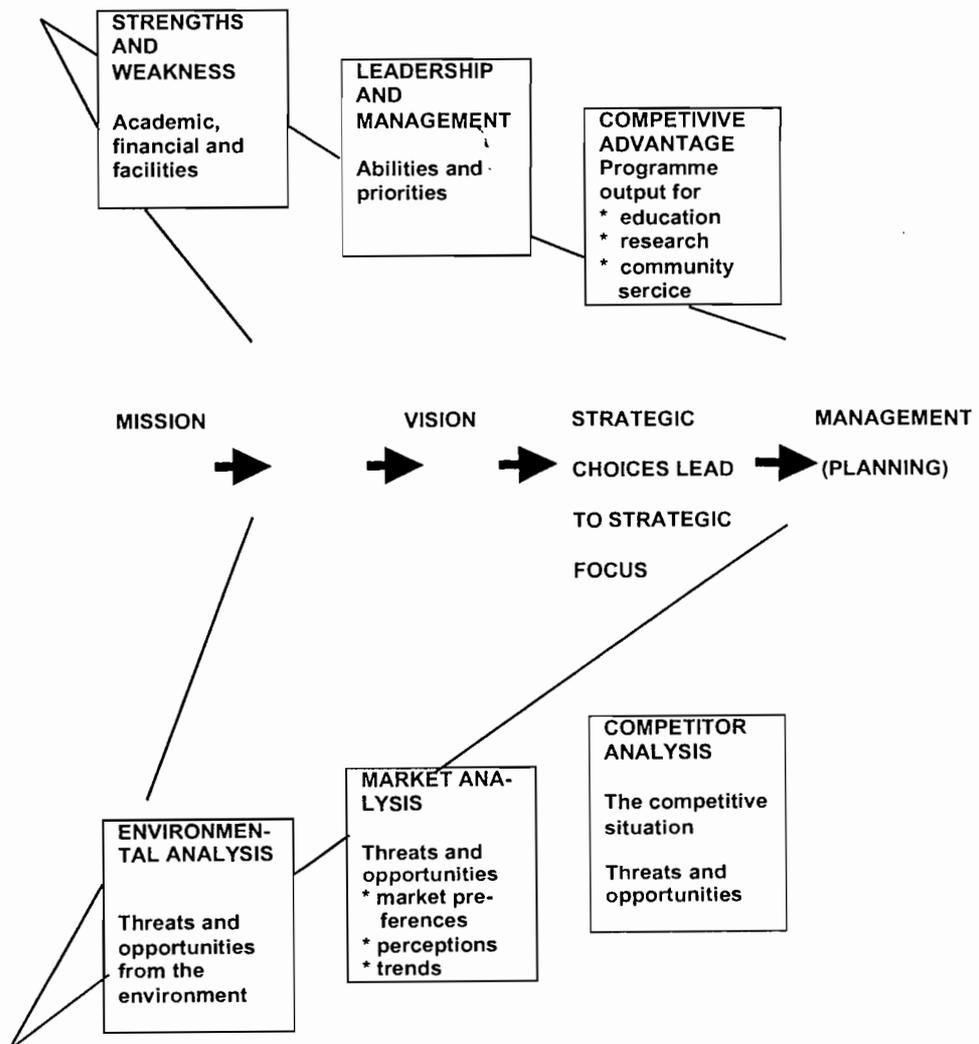
**(i) Orientation**

Analysis with a strategic focus is of vital importance in the management of internal quality assurance, regardless of where in the management process it takes place. According to Strydom (1992:xii) and Basson *et al.*, (1991:650) a systematic analysis must be directed by the mission of the institution and should include the internal as well as external environment. To manage change effectively, organisations need to establish a vision of what the organisation should look like and a direction towards realising that vision.

Several factors influence the choice of an institutional strategy. These factors include the role of the past strategy, the degree of the organisation's external dependence, attitudes towards risk, internal political considerations, timing considerations, competitive reaction, institutional strengths and weaknesses, competitive capabilities, shared values and company culture (Kaufman& Herman, 1991:50).

Figure 4.10 is a diagrammatic representation of the process of environmental analysis.

**Figure 4.10 : A flow-diagram for analysis with a strategic focus (Strydom, 1992 : 19)**



## **(ii) Assessing the external environment**

According to Phala (1991:117) the external environment determines the right of existence of an educational institution and is the most important and primary area in organisational design.

Organisations are neither self-sufficient nor self-contained, but they exchange resources and are dependent on the external environment. The external environment consists of all the conditions and forces that can affect the organisation's strategic options but are beyond the organisation's control (Carlson & Awkerman, 1991:168).

Educational institutions take inputs from the environment, transform them into products or services and send them back as outputs into the environment (Kaufman & Herman, 1991:24). Unless an organisation's strategy is well matched to the full range of external situational considerations, its suitability is suspect (Carlson & Awkerman, 1991:186).

According to the Department of Education (1998:146) an external environmental analysis requires that the institution gathers and assesses information concerning changes and trends in a number of areas within the external environment. In order to identify changes and to develop future strategies accordingly, Kroon (1990:96) states that scenario planning is a vital exercise as it attempts to limit the infinite number of possibilities by determining the main performers and rules. Sunter (1992:1) defines an educational scenario as a systematic description of the future in which possible alternatives are identified. Scenario sketching starts from the premise that the future is not what is used to be and that organisations have to be sensitized to the possibilities of sudden change.

As a component of the strategic management process, scenario sketching is quite separate from strategic planning. Scenario sketching provides challenging examples of how the environment can change, while strategic planning responds with plans of how the institution would react to those changes (Sunter, 1992:5).

After completion of the external environmental analysis, the total external situation of the institution must be reviewed and the major determinants of the organisation's future survival and growth must be identified. Conclusions about the major determinants which will serve as cornerstones for building the educational

institution's future strategy, can then be indicated through detailed scenario sketches.

### **(iii) Assessing the internal environment**

An internal environmental analysis identifies the institution's performance capabilities based on existing and accessible resources. Educational institutions need to identify those internal factors on which the success of the institution will most likely depend (Strydom, 1992:20).

The internal environmental analysis should involve aspects such as the strengths and weaknesses of the institution, the role of leadership and management and the competitive advantage per department or educational programme. This is also the phase in the process of analysis during which student responses are most likely to be sought (Hopkins, 1989:83).

Thompson and Strickland (1978:87) state that an internal environmental analysis should center around the following basic questions:

- How effective has the present strategy been?
- How effective will that strategy be in future?
- What are the institution's strengths and weaknesses?
- Is the institution competitive in terms of cost?
- How strong is the institution's competitive position?
- What strategic issues does the institution face?
- What will the effectiveness of the chosen alternative strategy be in future?

A good institutional strategy is a strategy that is well matched to the institution's internal and external situation and one that leads to sustained competitive advantage.

In essence, the process of environmental analysis, should focus on the following (Strydom, 1992:20):

- establishing a system or structure for analysis;
- evaluation of trends and challenges in the external environment and assessment of their impact on the institution;

- evaluation of the internal strengths and weaknesses of the institution; and
- making detailed predictions with reference to the identified trends and the impact that they might have on the institution.

Such a process would enable the institution to act in time and to deal pro-actively with the results of probable changes.

## **(b) Strategic planning**

### **(i) Orientation**

Strategic planning is the step in the strategic management process where it is determined how to reach the institution's goals with the expected available resources. According to Strydom (1992:xii-xiii) strategic planning involves the major strategic decisions of an institution and has to meet certain criteria, including the relationship between the institution and its external environment and the involvement of the institution as a whole in decision-making. Strategic planning is done according to an irregular timeframe, as and when strategic challenges emerge. As strategic planning is externally directed, it focuses on what the institution has to do, deals with macro issues, spans organisational boundaries, is a continuing process dictated by changes in the environment, deals with high levels of uncertainty and values expert judgement. The focus of strategic planning is not on lengthy detailed planning documents, but rather on change, on rational decision-making and on action to shape the future of the institution (Strydom, 1992:22). Strategic planning involves a definition of the institution's mission, goals and objectives (Carlson & Awkerman, 1991:165).

Strydom (1992:23) states the following about strategic planning:

- Academic strategic decision-making means that an institution and its leaders are active about their position in history.
- Strategic planning looks outward and focuses on keeping the institution in line with the changing environment.
- Strategic planning involves a definition of the institution's mission, goals and objectives.

- Academic strategy-making is competitive and recognises that higher education is subject to economic market conditions and increasingly strong competition.
- Strategic planning focuses on decisions, not on documented plans, analysis, forecasts and goals.
- Strategy-making is a combination of rational and economic analysis, political manoeuvring and psychological interplay. It is thus highly participatory and tolerant of controversy.
- Strategic planning focuses on the fate of the institution above everything else.

**(ii) The linkage between strategic planning and organisational planning activities**

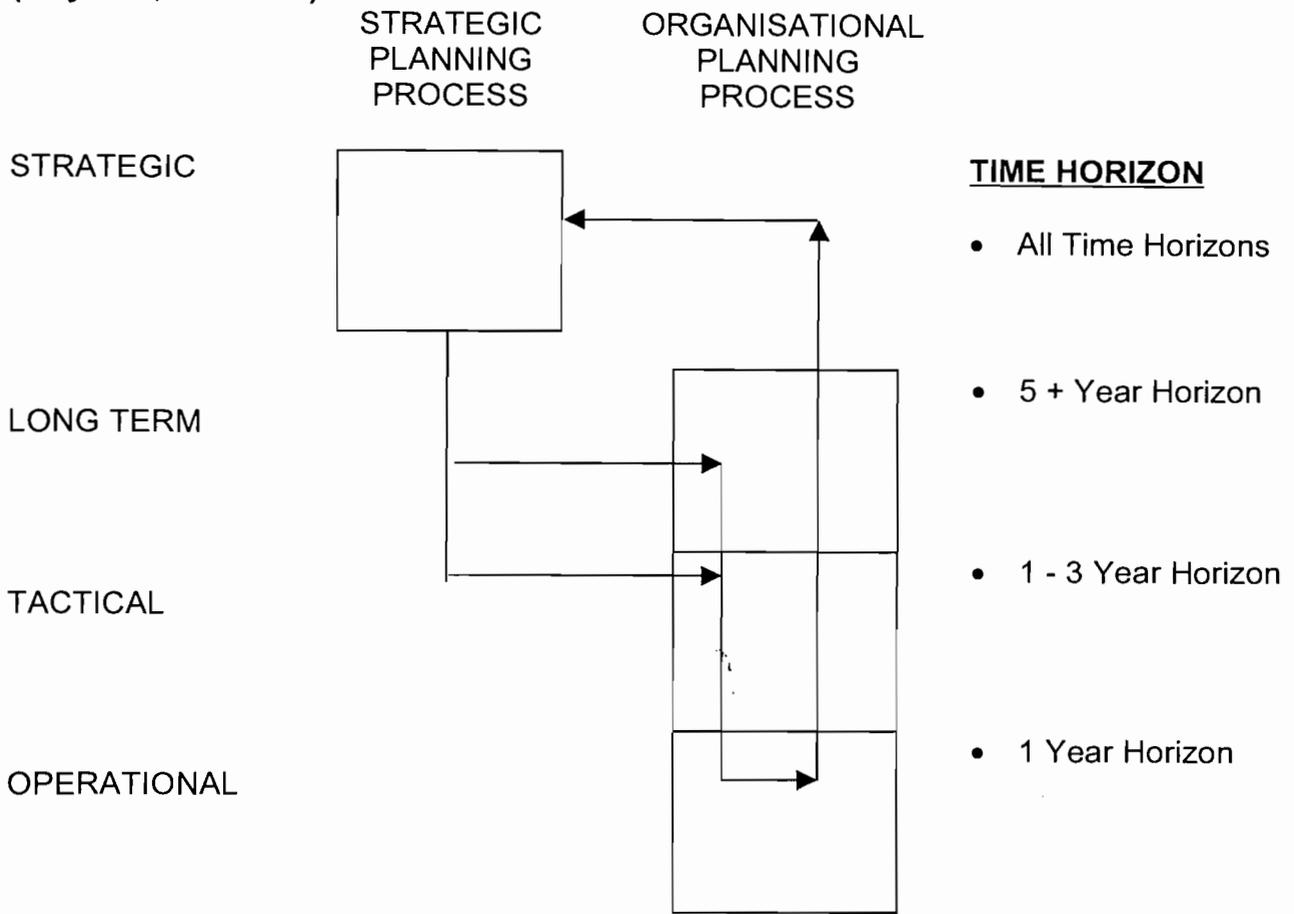
In contrast with strategic planning, organisational planning is internally focused, emphasises "how" to do the "what" which is stipulated by strategic planning, deals with the impact of macro issues on micro issues, is bound to organisational units and the resource allocation process, is relatively certain and is highly participatory and constituency-based (Strydom, 1992:22).

According to Strydom (1992:xiii) it is critical to understand the linkage between strategic planning and organisational planning activities. Combinations of the following items offer several possibilities:

- Environmental analysis for identifying trends and challenges that require changes in strategy.
- Sound management procedures to translate the macro changes into impacts on micro components of tactical and operational planning.
- Willingness and co-operation in modifying established plans and procedures as the need for new strategies emerge.

The linkage of strategic planning to other planning processes of an institution, as well as a distinction between the characteristics of the strategic planning process and other planning processes are illustrated in figure 4.11.

**Figure 4.11 : Linking strategic planning to other types of institutional planning (Strydom, 1992 : 21)**



CHARACTERISTICS	
STRATEGIC	ORGANISATIONAL
<ul style="list-style-type: none"> <li>• External focus</li> <li>• What to do</li> <li>• Macro issues</li> <li>• Boundary spanning</li> <li>• Continual scanning process to notice changes occurring</li> <li>• Irregularly, dictated by environment</li> <li>• Expert participation</li> </ul>	<ul style="list-style-type: none"> <li>• Internal Focus</li> <li>• How to do it</li> <li>• Impact of macro issues on micro issues</li> <li>• Tied to Organisational units</li> <li>• Regular processes dictated by organisational cycles</li> <li>• Linked to budget/resource allocation process</li> <li>• Constituent participation</li> </ul>

Once the strategic planning process is functional, the focus must shift to building an appropriate support system to sustain the planning process. Critical to building such a support system for the planning process, is an ongoing environmental analysis and continual summative and self-evaluation. Outside of such a holistic planning context,

analysis and self-evaluation will not have much impact on the institution (Strydom, 1992:23).

Although increasing numbers of institutions of higher education are engaging in self-evaluation processes in efforts to solve their problems and to improve their quality and academic reputations, institutional data alone is insufficient and often not gathered with the intent of decision-making and planning. Strategic planning perspectives require different types of data, analysis and procedural methods to support the process (Phala, 1991:117)). It is not enough to ask what the outcomes or the results of the evaluation process are, but rather to ask how the results should be used in conjunction with other strategic planning inputs, to develop a blueprint for change (Strydom, 1992:24).

Strydom (1992:24) states that the difference between traditional self-evaluation efforts such as programme review and strategic planning that incorporates self-evaluation, is that the latter is goal-orientated, holistic in approach and scope, tied to institutional decision-making and constructed to support change. It provides greater opportunity and direction in advancing positive organisational change towards quality and quality assurance than solitary self-evaluation efforts (Thompson & Strickland, 1978:57).

### **(iii) Strategy implementation**

Implementing strategic plans is mainly an action-driven, administrative task which involves the processes of operationalising and institutionalising the strategy:

**Operationalising the strategy** is successfully initiated in three interrelated stages namely (Kroon, 1990:180; Basson *et al.*, 1991:49):

- Identification of measurable, mutually determined objectives which provides a meaningful focus through which managers can translate long-term objectives and grand strategies into specific action. Well-developed annual objectives provide a basis for strategic control.
- Development of specific functional strategies which can provide more specific details about how key functional areas are to be managed. Functional strategies organise and activate specific sub-units of the institution to pursue the institution's strategy in its daily activities.

- Development and communication of concise policies to guide the thoughts, decisions and actions of managers and their sub-ordinates in the implementation of the institution's strategy. Policies serve to increase effectiveness by standardising routine decisions and by controlling the discretion of managers and staff in implementing operational strategies.

**Institutionalising the strategy** is based on the fact that the strategy of an institution must permeate the everyday life of such institution. According to Kroon (1990:17) and Thompson and Strickland (1978:215) the successful implementation of an institutional strategy will depend on the following:

- The development of an institutional structure which involves a division of tasks for efficiency and clarity of purpose and co-ordination between interdependent parts of the institution in order to ensure institutional effectiveness.
- The total institution should be united behind the strategy and every administrative task must be done in a manner that matches the requirements for first-rate strategy execution.
- Management commitment to the effective implementation of the strategy .

The fundamental purpose of strategic management is to position the institution effectively and to guide it within a changing environment. The relative success of the strategic management process and specifically the implementation of the strategic plans, should be evaluated by means of feedback on and evaluation of the process of strategy formulation and implementation (Strydom, 1992:25). A process for evaluating strategy execution is, therefore, essential if the strategy is to be successfully implemented and adjusted to a changing environment (Kaufman & Herman, 1991:54).

### **(c) Self-evaluation**

#### **(i) Orientation**

Kells (1988:148) advocates that self-evaluation processes can be effectively used as a base for solid planning as well as for initiating change and improvement. According to the Department of Education (1998:144) self-evaluation is designed primarily as a means of developing quality educational and organisational processes within an institution. In this respect, self-evaluation is primarily educational while external

quality assurance processes are primarily evaluative (DoE, 1998:144). Institutional self-evaluation is a systematic description of educational objects and/or an assessment of their worth (Hopkins, 1989:14). The purposes of internal review or self-evaluation can be summarised as being accountable and seeking improvement.

Self-evaluation, according to this model, is not seen as a kind of management process on its own like self-study and quality management or total quality management.

Self-evaluation is regarded as part of strategic planning: firstly through analysis, and secondly through the evaluation of mechanisms and procedures for internal quality assurance at institutional level and the attainment of goals and objectives at departmental level (Strydom, 1992:xii). The evaluation process is as important as its results and should form the basis of all attempts at goal formulation.

The Higher Education Quality Council (1997:76) defines self-evaluation as a description or analytical account of the activities, intentions, conditions, processes and performance of individuals or members of a group, which is prepared by the individuals concerned before some kind of internal or external review. Providers are expected to have in place evaluation and monitoring processes to meet the aims of institutional improvement. Self-evaluation in educational institutions is thus designed primarily as a means of developing quality educational and organisational processes in institutions (Higher Education Quality Council, 1997:1).

Effective institutions are those institutions where the process of self-evaluation is absolutely integral to the daily functioning of the institution. According to Strydom (1992:5) research revealed that institutional self-evaluation in many cases is not practiced on a regular basis as part of ongoing planning, but rather as a "one shot" approach in the face of a crisis. The process of self-evaluation should be designed in such a way that quality gaps can continually be identified and then followed by the development of measures to narrow or to close these gaps (DoE, 1998:144). An extensive range of quality criteria and supporting quality indicators should be used to inform the self-evaluation process, thus ensuring responsiveness to institutional goals and the needs of external stakeholders (Higher Education Quality Council, 1997:7).

According to Du Toit (1995:143) self-evaluation as part of a self-regulatory system, might be essential to re-establish the academic stature of universities. Self-regulation is defined as: " the informed and periodic process through which a system, institution, programme or procedure is attuned over time to expectations (intentions, standards, norms) through choices and actions judged by the regulator to be needed as a result of formative or summative evaluation. The notion of quality is inherent in the concept of regulation, for the regulator, individually or collectively, is judging the relative quality of the institution or programme. That is, the regulator judges the extent of performance against either stated intentions or against normative or a particular standard of behaviour".

Kells (1988:15) defines institutional self-evaluation as a process whereby an institution deliberately collects information about itself in order to determine what action needs to be taken to put into effect those decisions that will enhance its activities and result in corrective measures.

Self-evaluation is a process which is followed by individuals or members of a group reflecting on their activities, achievement of objectives and performance, with the aim of facilitating improvement or planned change. Self-evaluation is about whether educational objectives are being achieved and whether current practices can be improved upon (Fourie & Strydom, 1999:18-19). As such, self-evaluation is a management aid that evaluates the degree in which an institution fulfills its mission and which facilitates strategic and long-term planning. It is thus important that institutional self-evaluation should be a purely internal matter (Webstock, 1999:15).

The self-evaluation process must utilise objective or hard data as well as subjective or soft data in which perception, interpretation and similar factors play a role. Quantitative and qualitative evaluation must complement each other. All conclusions and recommendations that flow from the process of evaluation, should be action orientated, thus contain plans that will make their implementation possible (Strydom, 1992:xiv). An evaluation plan in respect of what is being evaluated, what the evaluation criteria and indicators are, what the achievement standards are, how evaluation will be done, when it will take place and who will be responsible for the evaluation, should be stated explicitly (Webstock, 1999:14).

Evaluation plans should be adaptable, should make provision for different approaches to evaluation, should be attuned to the evaluation of specific goals and objectives of the institution, should utilise recent institutional research and should involve as many participants as possible. Evaluation plans should be of adequate scope and depth to evaluate accountability, should focus on assessing the outcomes or results of goals and objectives and should stimulate a process of self-evaluation (Strydom, 1992:xiv).

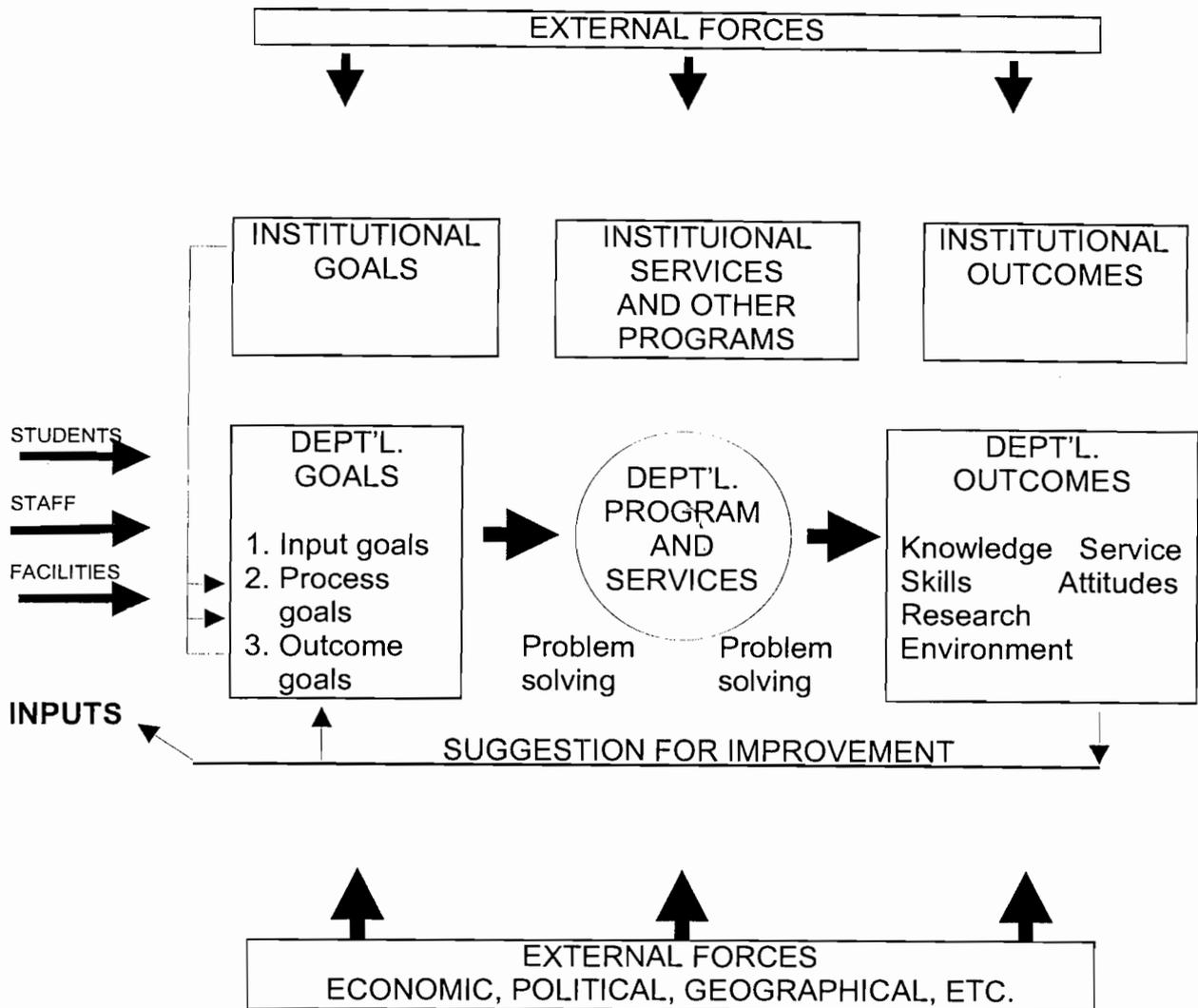
Brennan's (1996:13) concerns about self-evaluation stress that if self-evaluation is undertaken prior to a process of external evaluation, it may be done as an attempt to influence external judgements rather than to inform the "self". Self-evaluation, which has external consequences for the institution, runs the danger of compliance on the part of those who are carrying it out. However, when there is no external consequences there may be no incentive to take up the self-evaluation process seriously. Strong, credible self-evaluation probably remains the best chance for disciplinary units to assert their authority in the quality assessment process. Depending on how it is done, this can further be strengthened by external peer review.

In the literature that was studied the concept of self-evaluation is often defined by means of referring to different approaches to self-evaluation.

## **(ii) Approaches to self-evaluation**

Institutions differ markedly in terms of goals, planning processes, data systems, external climate, psychological, historical and political factors. Certain institutions will thus have a need for a comprehensive self-study, while other institutions will have to emphasise certain aspects of their own current agendas, quite to the exclusion of other factors (Kells, 1988:18). According to Strydom (1989:1) there are several kinds of approaches that can be considered when designing an institutional self-evaluation process. It is, however, essential to have a useful conception, ideally in the form of a diagrammatic representation, of the system to be studied and of the two major elements in any study of effectiveness, namely the extent to which goals are achieved and the functioning of the system. In figure 4.12 a general model for self-evaluation is illustrated:

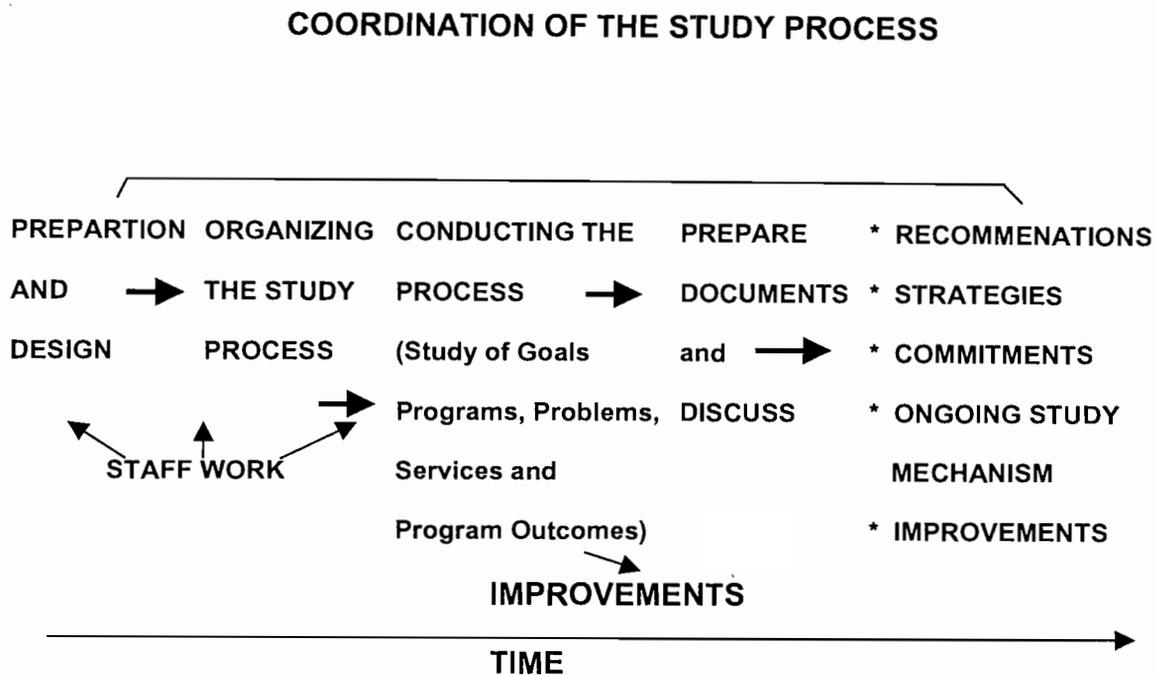
**Figure 4.12 : The general open systems model, depicting the organisation, its environment and the study elements (Strydom, 1989 : 2)**



According to the above model, the process of institutional self-evaluation is represented by the elements of input, goals, programmes and outcomes. The dotted lines present the review of goals, the relationships of intentions to results, the analysis of inputs, the analysis of functioning and the suggestions for improvement of any of the elements as a result of the process (Kells, 1988:20).

In figure 4.13 a second general type of model, a flow model, namely “conducting the process” is illustrated.

**Figure 4.13 : General flow model for a self-evaluation process**  
**(Strydom, 1989 : 2)**



These approaches to institutional self-evaluation represent various degrees of comprehensiveness of the self-evaluation effort, namely (Kells, 1988:1-2):

- **The comprehensive self-evaluation approach**

Every major aspect of the institution is appraised in relation to the institution's self-defined and rescrutinised goals and accepted standards.

- **The comprehensive approach with special emphasis**

This form of self-evaluation involves a general review of goals, programmes and supporting elements and outcomes, followed by or concomitant with an in-depth examination of those aspects of primary significance to an institution at a specific time.

- **The selected-topics approach**

The selected-topics approach is followed when the concentration is on certain areas, units or aspects of an institution or programme, the basic performance and functioning can be readily verified through available information and evaluation of selected functions or aspects of its work promises to illuminate the whole.

- **The current special-evaluation approach**

The focus of this approach is that of evaluation, followed by planning and repeated evaluation. Evaluation and planning should be a continuous and improving cycle. This model provides the opportunity for an institution, fully involved in a participatory planning process, to present itself for useful review by peers without initiating an unnecessary, separate evaluation process.

- **The regular institutional research approach**

This model involves the acceptance of the product of an institution's regular research programme in fulfillment of the self-study requirement without further documentation other than an introductory statement.

The different approaches to self-evaluation indicate that the degree of external impetus and internal effort is proportional to the comprehensiveness of the evaluation.

Strydom (1992:5) states that although the different approaches to self-evaluation reflect varying degrees of sophistication in different institutions, self-evaluation per se is often not conceptualised sufficiently. A lack of clarity on the concept of self-evaluation often leads to misconceptions about the process needed to support successful self-evaluation.

**(iii) Misconceptions regarding the attributes of different approaches to self-evaluation**

According to Strydom (1992:7) the following misconceptions exist regarding the attributes of the different approaches to self-evaluation:

- The design of the process of self-evaluation is not always appropriate to the circumstances of the institution because of, for example, no thorough external environmental analysis.
- The process does often not resemble an informed attempt at clarifying organisational goals and does not assess achievement of those goals for purposes of improvement.

- Incorporation of relevant institutional research into the life of the institution or programme by way of appropriate management information is in most institutions not present.

Strydom (1992:11) and Kells (1992:8) identify the following factors that will impact negatively on the implementation of self-evaluation:

- Disagreements about the mission of the institution.
- Expectations that self-evaluation will eliminate the politically difficult task of decision-making.
- Inconsistencies between management structures and self-evaluation structures and processes.
- Incorrect assumptions about information and procedures required for self-evaluation.
- An uncertain future.
- Pressure to address immediate concerns without any strategic focus.
- A lack of time and human resources required for comprehensive self-evaluation.
- Avoidance of politically sensitive but critical issues.
- Unrealistic financial resources available for a self-evaluation system at the institution.
- External factors such as financial pressures, moves towards deregulation, rationalisation and retrenchment providing the impetus for self-evaluation. The focus of self-evaluation initiated by such external factors, takes place in a rather unfavorable mode and climate and misses the real purpose of self-evaluation, namely internal institutional improvement.
- A lack of internal support and involvement, which may be the result of fear of an unfavorable evaluation and the notion that the quality of higher education cannot be measured. There is often a perception that internal and external evaluations are misleading, simplified and inaccurate.
- Methodological problems such as the selection of a design for self-evaluation and choosing a suitable model and instruments for the process

- The interpretation of results of self-evaluation.
- The fact that self-evaluation processes have occasionally been successful at institutional and programme levels without external pressure. Strydom (1992:9) emphasises that this is one of the most important factors impacting on a self-evaluation process. An institution that has positive thoughts about previous attempts at self-evaluation, is more willing to engage in the next effort.

In the light of the above misconceptions, Strydom (1992:10) advises educational institutions to consider the proven elements of success implementation of institutional self-evaluation.

#### **(iv) Elements of a successful self-evaluation process**

Strydom (1992:10), Webstock (1999:14), Hopkins (1989:14) and Kells (1988:17) state that literature on organisational effectiveness indicate that the following attributes are desirable in a self-evaluation process of an educational institution:

- The process should be internally motivated
- The top-leadership must be committed to the process
- The design of the self-evaluation process must be appropriate to the circumstances of the institution and should be rooted in the culture of the institution
- The process should contain an informed attempt to clarify organisational goals and to assess achievement of the goals for purposes of improvement
- There should be representative, appropriate and useful participation by members of the various segments of the academic community
- The process must well fed regarding problem clarification, problem solving, staff work, group leadership and effective group process
- The ability of the organisation to function effectively should be studied and enhanced
- Some improvement should occur both during and as a result of the process
- A readable report, potentially useful to several audiences, should result from the process

- A better system of ongoing institutional research, self-analysis and self-improvement should be a major product of the process
- Institutional leaders should actively seek to create trust and confidence among constituencies and clearly articulate and communicate the purpose, scope and procedures of self-evaluation. A well-planned evaluation process is characterised by committed leadership at different levels of the institution. The successful implementation of the total process depends largely on the leadership demonstrated by the rectorate of the institution.
- Self-evaluation is regarded as the basis for all other management functions
- Self-evaluation focus on strategic issues and is not a comprehensive effort
- Open, frank discussion on trends and challenges in the external and internal environments of the institution is held regularly
- Planning processes, including the process of self-evaluation, are kept simple and inexpensive
- Academic leaders and participants recognise and accommodate the political aspects of self-evaluation in designing their efforts.

According to Kells (1988:17) self-evaluation processes must be planned, organised, directed and studied, thus the process must be managed in order to be successful.

Figure 4.14 is a diagrammatic representation of such a self-study process for higher education institutions.

In order to eliminate factors that might have a negative impact on an attempt at institutional self-evaluation, Kells (1988:18-19) and Strydom (1989:7-8) suggest a number of steps or sequential elements that must be followed to ensure a worthwhile self-evaluation process.

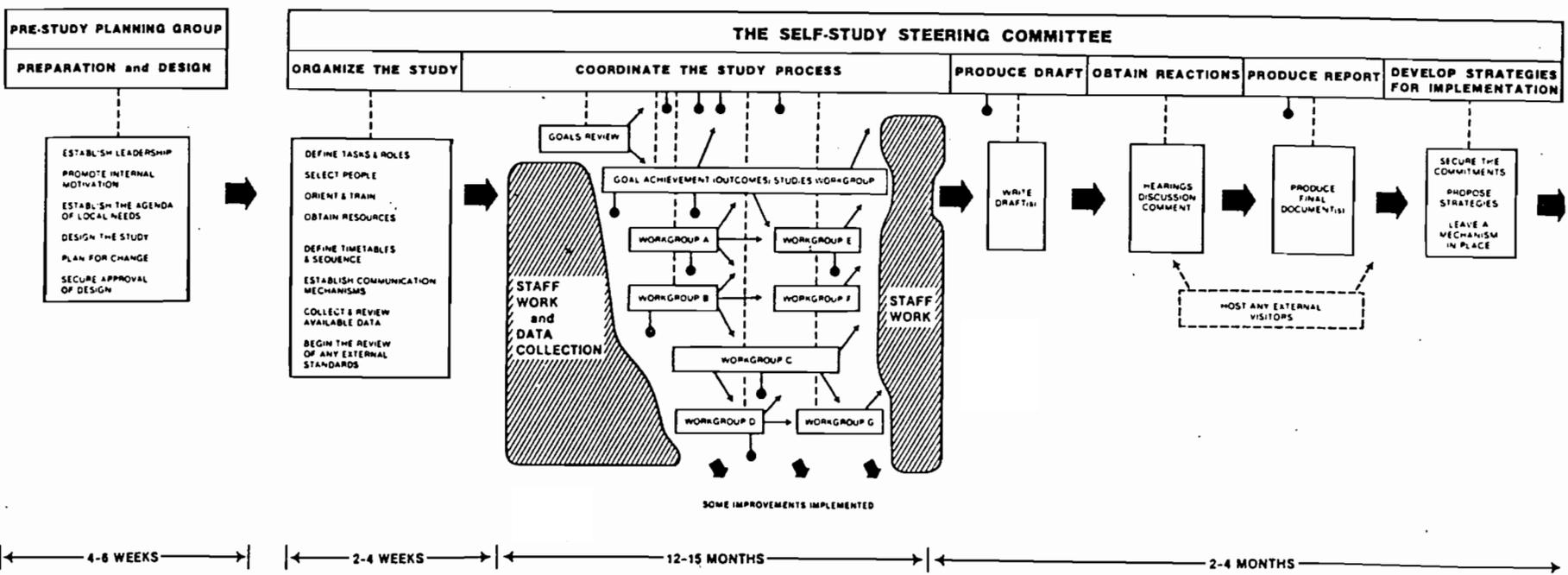
#### **(v) Sequential elements of a self-evaluation process**

- **The pre-evaluation planning group**

There are arguments for and against establishing a unit for quality assurance at an institution. One concern is that units tend to become marginalised.

Figure 4.14 : Flow diagram of an entire self-study process for an institution

(Kells, 189:17)



Another is that responsibility may be delegated to the unit rather than creating a situation where every staff member takes responsibility for assuring quality within the leadership at all levels. However, a mass of human resources is necessary to ensure the effective functioning of a quality assurance system. An overview of the development of the system is necessary to ensure coordination and integration across the various elements of the system. An infrastructure to facilitate the development of quality assurance across an institution needs to be set up (Webstock, 1999:15).

It is important to identify whose responsibility it is to implement quality assurance. In most cases it will be line management, including Deans of Faculties and Heads of Departments. It is, however, important that quality assurance be implemented in such a manner that it is not experienced as a managerialist intervention in academics' lives, but rather as a genuine effort to improve the quality of education offered and thus the working lives of academics (Webstock, 1999:15).

The first step in starting a self-evaluation process is to form a group whose most important function is to plan the process before it is begun. Crucial questions of leadership, motivation, specific institutional needs, group processes, sequence of activities and any appropriate process design must be addressed before the process begins in order to marshal the human and other resources of the institution to achieve the goals of the process. All self-evaluation processes require extensive preparation and design (Hopkins, 1989:15).

The self-evaluation planning group must prepare the actual design-specific focuses, procedures, sequences, human resources and expected outcomes of the process.

- **Planning for change**

People must be prepared for change. The following points must be considered in planning for change (Strydom, 1992:27; Webstock, 1999:14):

- In the published design the planning group must include the expectation that change will result from the process and should expect the highest authority to endorse this concept.
- A wide range of participation must be accomplished in the process. People must "buy in psychologically" or they will oppose the recommended new order.

- The planning group must insist on an open evaluation process. Open and frequent communication by the steering group is of vital importance.
- The self-evaluation process must be applied systematically and mechanisms for follow-up should be developed
- The self-evaluation process must continue until a real and potentially effective group has been established to oversee the consideration and some implementation of change suggestions.
- The self-evaluation process should not end until the first steps of a succeeding planning process are at least visible on the institutional horizon. Self-evaluation should be prelude to planning as well as a spur to change and improvement.
- **Designing the evaluation process**

During this phase of the process leadership, internal motivation and a specific list of local needs should be established. Designing of the self-evaluation process should involve the following aspects (Strydom, 1992:26 & Hopkins, 1989:38):

- Selection of the focus and goals.
- Decisions on the scope and depth of the self-evaluation.
- Choosing the sequence of activities.
- Decisions on the nature of participation.
- Determine evaluation questions and collection methods
- Relation of the self-evaluation process to the current problems and agenda of the institution.

In the design stage of the self-evaluation process the substance, sequence, structure, human dimensions and expectations of the process are determined so that it can be organised for the next phase of the process and be conducted in the following one.

Questions that could form the basis of designing the self-evaluation process could be structured around the following aspects (Strydom, 1989:7-8):

- What is the status of institutional research or the availability of useful data at the institution and what is the status of the data base on students, staff, programme,

resources and goal achievement? Should the self-evaluation process result in improvement capacities in these areas?

- What is the status of planning in the institution? How recently has a thorough planning process been conducted? What studies would enhance the next planning phase?
- What is the status of the statement of goals in the institution: are they clearly stated, complete and current? What work remains to be done?
- Have there been recent useful evaluation processes at the institution and what written evidence that resulted from it is available?
- What accreditation relationships and state-related or other activities or responsibilities does the institution or programme have or must be completed in the near future?
- **Organisation of the self-evaluation process**

The organisation of the process flows naturally from the design and from the need to move as effectively as possible into the self-evaluation process itself. According to Strydom (1992:26) the organisation of the process should involve the following:

- Define tasks and roles.
- Establish a means for guiding the study.
- Select people and orientate and train them.
- Obtain resources, including adequate staff assistance.
- Establish working groups.
- Establish co-ordination and communication.
- **Mechanics of the self-evaluation process involves the following:**

Mechanics of the self-evaluation process involves the study process itself and the individual and work group activities that it encompasses (Kells, 1988:71). According to Strydom (1992:26) it involves:

- Working with goals.
- Studying input, environment, programme and process.

- Reviewing any standards and professional norms.
- Collecting facts and opinions.
- Undertaking goal achievement studies.
- Discussing results and prepare a useful report.
- Using results and implement changes.
- **The use of peers**

An institution that engages in an internally motivated process of self-evaluation and which is serious about the implementation of its results, must use peers and an external agency with which it can work if optimal results are to be achieved (Webstock, 1999:14). According to Kells (1988:137) institutions should:

- Use any team visit to foster changes.
- Work with outside agencies.

- **Preparing a useful report**

Along with the absence of pre-study planning and design and an orientation toward description rather than analysis and improvement, the prevailing weaknesses in self-evaluation processes include the nature of the self-evaluation report prepared (Kells, 1988:131). Certain qualities can make a large difference in the extent to which a self-evaluation report is useful. According to Kells (1988:131) and Hopkins, (1989:47) the desired attributes of a self-evaluation report include the following:

- The report should be clearly written and well organised.
- The report should be concise.
- The report should focus on key issues.
- The report should be distributed widely.
- The report should be useful for several audiences.
- The report should list those goals that the institution should achieve or those aspects that should be changed. Ideally it should indicate the strategies necessary to accomplish the changes.

According to Strydom (1992:8) no single procedure for self-evaluation can be prescribed to any one institution because of local circumstances such as previous experiences with self-evaluation attempts, the availability of data, the size of the institution, the consensus on goals and objectives, the complexity of the institution, the level of needs or problem areas and the opinions of academic leaders about self-evaluation as such. Of utmost importance is the fact that every higher education institution has a specific context that cannot be disregarded in any attempt at internal quality assurance.

#### **(d) The context of a higher education institution**

Strydom (1992:28) defines the term context as the total situation or set-up, including the background and environment or milieu of an educational institution. According to Weller (1996:30) the context of an institution refers to the way in which things are put together, are interwoven or coherent with a view to determine strategic focus on the ground of institutional mission. Strategic focus that results from contextual-strategic thought and analysis directs the long-term behaviour of an institution on its way to the best possible future position.

According to Strydom (1992:29) the joining up of "context" with "strategic" and "operational" focuses the attention on the fact that the internal environments of higher education institutions have often been over-emphasised in the past. On the other hand, there is also a tendency to over-emphasise the external environment which can lead to the idea that the higher education institution must cater mainly for the needs of its clients. The "context" notion, however, brings together the two above mentioned ideas. It ensures that the institution will not surrender to one of these extremes and will remain true to its unique structure and direction.

The idea of context is not solely applicable to the structure and direction of the institution, but also applies to its immediate social environment, termed by Strydom (1992:xv) the extended sense of context.

The restricted and the extended contexts are always embedded in a further context, namely the meta-context. This overarching context of a higher education institution and its planning processes concerns two separate but interconnected frameworks: internal images that govern the goals of the institution as well as the ideological

value systems that operate in modern societies and systems that surround the institution and its planners (Strydom, 1992:xv).

Institutional self-evaluation needs to be described in terms of the contextual issues which shape its course and its form. It is vital to establish the contextual parameters and to eliminate their effects in terms of practical case studies (Strydom, 1992:10).

**(e) Integration and implementation of the strategic management model for purposes of internal quality assurance**

In higher education in South Africa it is currently not possible to evaluate internal quality assurance in the way that it is done by accrediting agencies in other countries. What might be realistic is, according to Strydom (1992:33), that higher education institutions manage their internal self-evaluation exercises as part of strategic management. In doing so the aim should be :

- to consider and review the institution's mechanisms for monitoring and promoting strategic management for purposes of internal quality assurance through self-evaluation; and
- to comment on the extent to which procedures are in place in the institution so that quality can be promoted and safeguarded in practice.

According to Strydom (1992:33) it would, however, be a mammoth task for any institution to embark on a process of internal quality assurance through strategic management. Strydom (1992:37) suggests that what might be possible to achieve, is a strategic choice of internal quality assurance goals after analysis with a focus.

**(i) Implementing the model at institutional level**

At this level, higher educational institutions should be concentrating their internal quality assurance processes or self-evaluation efforts on monitoring whether the mechanisms and procedures are available to manage strategically in areas such as (Strydom, 1992:34):

- quality assurance in provision and design of programmes of study which may include scrutinising new programmes of study and monitoring programme design;
- quality assurance in teaching, learning and communication which may involve monitoring existing programmes of study and their achievements, promoting

innovative teaching, learning and communication practice and provision of student counseling and development;

- quality assurance in relation to academic staff development and appraisal; and
- quality assurance in relation to the role of external examiners and their reports, students' views on programmes of study and provision of student services, views of external bodies.

The process of scrutinising mechanisms and procedures at the institutional level could be guided by asking the following questions (Strydom, 1992:37-38).

- Is the stated goal so important that its attainment will justify the effort required to reach it?
- Given the available resources of the institution are other goals not more important; does the probable outcome matter enough to justify the investment in the stated goal; what are the implications for society or the institution if the stated goal is not achieved?
- Is it assessable or verifiable and can its results be identified? Will everyone know when it has been achieved?
- Can objectives be derived from it?
- Is it flexible or adaptable and does it take into account external threats and opportunities and internal strengths and weaknesses?
- Is it derivable from the institutional mission statement?
- Is it consistent with ordinary planning at different levels of the institution?
- Does it contribute to the accomplishment of the mission and planning at different levels of the institution?
- Is it consistent with the educational philosophy of the institution?
- Is it achievable and within reach, given the institution's current or planned capabilities?

After answering these questions, an institution can determine its primary areas of focus.

## **(ii) Implementing the model at departmental level**

Kells (1988:96) states that the evidence of ongoing self-evaluation at higher education institutions is relatively small and that the lack in this regard is most seriously felt at the departmental level of these institutions. It is, however, at this level that most of the decisions which directly affects clients, students, learning and research are made. It is essential to have cyclical departmental reviews and to involve a descriptive self-evaluation.

The advantages of doing self-evaluation on the institutional level are that it requires fewer experts, is less time consuming and less expensive. However, the disadvantages of this approach include the fact that there is little involvement of people at grassroots level and there may be no feedback at the department or programme level and no direct recommendations for improvement. Institutional assessment tend to overlook the fact that the most relevant focus for assessing performance might be at the departmental level. Across the board aggregate assessment can produce a flattening effect which reduces accuracy (Fourie & Strydom, 1999:20).

At the departmental level a more detailed approach, though using the same kind of analysis as for the institutional level, should be followed. Strydom (1992:39) stresses once more that too many goals and objectives at this level may mean failure to obtain results and suggests that the development of goals and objectives at the departmental level should be based on the following questions:

- What should the result (outcome, process or input) be?

This question helps to focus on a general intent and on whether the intent is an outcome, a process or an input. It thus leads to the identification of a desired end.

- How will achievement of the result be recognised?

This question refers to expected concrete behavioural expressions of the outcome which can be assessed and evaluated.

- What specific evidence can be regarded acceptable as evidence that these concrete behaviours have occurred?

Questions two and three are related to the recognition and judgement of the achievement of an outcome and lead directly to assessment methods (criteria and

indicators) that will help to demonstrate whether or not the expected concrete behaviours have occurred.

**Criteria** stand in a similar relationship to objectives than objectives to goals. Criteria, according to Strydom (1992:41) are more narrow slices of behaviour that more specifically represent the broader outcomes, described by their subordinate objectives. The outcome stated in an objective provides the justification for the behaviour stated as the criterion. The criterion specifies how the outcome will be assessed and what specific behaviour will be assessed. Clarifying the mission and identifying the outcomes and evaluating and assigning priority to goals and objectives constitute only one part of the process of planning for evaluation.

After the desired outcome and the criteria that will represent the outcome have been identified, attention should be given to identifying indicators and standards and the specific methods that will be used to assess and evaluate achievement of the outcome. The identification of indicators and standards of performance is part of the design of assessment and evaluation. Indicators and standards should be identified before planning the activities that will produce the desired outcome. When indicators are identified, it will aid the clarification of criteria to be used to represent the outcome (Strydom, 1992:41).

**Performance indicators** are defined on the basis of which to measure improvement. In the designing of internal review processes it is important to make a careful selection of key quality indicators. For any quality assurance process to be effective, it is necessary to be precise about primary indicators of quality (assessed on an ongoing basis) and contributory indicators of quality (assessed randomly) (DoE, 1998:143).

Nutall (1997:15) identifies three categories of important performance indicators:

- **Quality related processes**, which primarily focus on the examination of the soundness and adequacy of educational processes and explore whether organisational and management processes assist in developing a high quality educational environment.
- **Quality related outcomes**, which include both the degree to which students demonstrate that they have achieved the standards as well as the degree to which they have satisfied employers.

- **Pedagogy related inputs**, which involve an analysis of teacher educator's qualifications as well as the existence and use of facilities important for a conducive teaching and learning environment.

The Technical Committee (DoE, 1998:142) suggests a primary focus on quality-related processes and quality linked outcomes. Providers should identify the educational processes which will be required to develop professional educators with the required applied competencies.

**Standards of attainment** specify how much of the criterion is acceptable as evidence that the goal or objective has been achieved. Standards provide a mechanism for providing high quality education, training and development and also a frame through which greater articulation, integration, consistency, coherence and consensus on these aspects can be attained within the system (Strydom, 1992:41).

Common principles which seem to prevail in most countries indicate that standard setting processes should (Strydom, 1992:41 & DoE, 1997a:149):

- analyse each field area, its field delineation, domains and issues;
- develop collaborative processes for including stakeholders and professional participation;
- provide guidance to ensure transformation and improvement
- promote a culture of professionalism
- promote a climate of trust among various stakeholders within the educational system
- define reasonable timetables for completion of standards;
- support continuous capacity building;
- adopt flexibility in developing standards; and
- plan for revision as conditions change.

#### **4.3.5 Adapting the strategic management model for purposes of internal quality assurance to the needs of the specific institution**

The circumstances of an institution or programme must be thoroughly considered in order to design a process which will enable the goals of the institution or programme

to be achieved (Kells, 1988:18). According to Kells (1992:43) the strategic management model will have to be adapted to specific institutional variables such as:

- the positioning of power in the institution to be evaluated;
- the history of the institution concerning previous evaluation efforts;
- the availability of information in the institution;
- the beliefs of leaders of the institution concerning the need for and the purposes of the process;
- the amount of time available;
- the conditions in the institution including stress, workload, maturity and resource levels;
- the availability of funds to support the evaluation process and the required improvements; and
- the availability of talented and willing participants.

The implementation of this model will have to be concerned with the development of a broad policy framework for internal quality assurance at institutional level which can then be used as a mechanism for guiding operational policies at the departmental level of an institution (Strydom, 1992:44).

According to Carlson and Awkerman (1991:160) educational institutions have not been viewed as likely candidates for strategic management in the past as these institutions have done little more than react to environmental pressures. Strydom (1992:4) states that although higher education institutions are not ideal settings for management as leaders and managers are often not trained for or inclined towards management, internal quality assurance can successfully be achieved by implementing the proposed strategic management model. Bitzer (1991:94) and Kells (1988:17) advocate that this can be done if self-evaluation is undertaken in an attempt to improve the teaching, research and community service of an institution by critically assessing goals, by identifying problems, by evaluating goal attainment and by examining procedures and resources. Self-evaluation must be enthusiastically

undertaken to ensure a psychological bond in all attempts at institutional development.

The failure of many quality assurance systems has been due to overly complex and prescriptive definitions of quality, quality indicators as quality assurance systems. The Technical Committee (DoE, 1998:139) thus suggests an approach that focuses on institutional self-evaluation and which emphasises a minimum of key indicators and key processes established as minimum requirements for all institutions.

#### **4.3.6 Summary**

The strategic management model for purposes of internal quality assurance indicates that analysis, strategic planning and self-evaluation are sub-processes or functions of a more encompassing management approach. An educational institution that intends to establish and manage an internal quality assurance system, could start the process by implementing institutional self-evaluation and then move towards TQM in order to reach total quality. By treating self-evaluation and analysis as integral components of strategic management, the benefits to be derived from both processes can be synergistically combined in an effort toward total quality management .

The literature study that was undertaken made it clear that both the models that were discussed can provide an educational institution with a framework for the management of internal quality assurance. However, both TQM and the strategic management model for purposes of internal quality assurance fail to provide institutions with requirements or specific standards which can form a solid basis for improvement towards total quality management.

The International Organisation for Standardisation (ISO 9000) is a quality system that provides requirements and specific standards that educational institutions may adopt for the management of internal quality assurance. This model will now be discussed.

## **4.4 THE INTERNATIONAL ORGANISATION FOR STANDARDISATION (ISO 9000)**

### **4.4.1 Introduction**

The goals and aspirations of higher education institutions, affirming a commitment to become market leaders in the field of higher education, are often quite clearly stated in the vision and mission statements of these institutions. Quality statements often emerge as a result of a number of activities, the first of which is normally a long and intensive quality debate. However, moving from debate to developing a quality management system, seems to be a more difficult process. In order to develop quality management systems, quite a number of higher education institutions have attempted to implement TQM.

An essential element in the TQM methodology is the need to improve processes - improve the process and the quality will improve itself. Forrest (1995:90) states that the essence of the management of quality is process control. However, if an institution's understanding of its processes is poor, it is difficult to work on these processes and to improve its effectiveness. According to Doherty (1995) educational institutions are notoriously vague about quality processes and control mechanisms and about the position of authority and responsibility in terms of these processes.

Process control is the focus of ISO 9000, a generic management system standard applicable to any organisation, regardless of the product or service it produces. According to Wilson (1996:37) the ISO 9000 series of international quality standards have, since their release in 1987, become one of the most significant influences on the advancement of the global quality movement. The ISO 9000 series comprises a set of standards for quality assurance systems. It is not in itself a standard, but a label for a series comprising several standards. ISO 9000 provides a framework for organisations so that they can assess where they are and where they would like to be. According to Chase and Aquilano (1995:191) ISO 9000 sets out how to establish, document and maintain an effective management system that will indicate a serious commitment to quality and the willingness to satisfy customer needs. It can be regarded as a benchmark for evaluating the effectiveness of an organisation's quality management program.

Recently a number of higher education institutions in the UK have started to change the emphasis from TQM to ISO 9000 (Lundquist, 1997:1). As ISO 9000 is a very general set of principles about good management, the principles are relevant to both training and education (Freeman, 1994:11).

In South Africa, the Council of the South African Bureau of Standards (SABS) has accepted the ISO International Standard as a South African standard. As the concept of "International Standard" was not viewed as appropriate in a South African standard, it was accordingly altered to "Code of Practice" (SABS, 1997:ii). The SABS ISO 9000 is therefore an international code of practice which promulgates the ISO 9000 international standards for quality management systems (SABS, 1997:5).

Doherty (1995) states that there is no doubt that ISO 9000 can be effectively applied to educational institutions. ISO 9000 can establish a firm base for the development of a philosophy and methodology for the continuous improvement of quality.

#### **4.4.2 The philosophy of ISO 9000**

The intent and basic philosophy behind ISO 9000 is the requirement that a basic quality system must be implemented to ensure customers that suppliers have the capabilities and systems to provide quality products and/or services (Sun, 1999:1). The philosophy of ISO 9000 is portrayed through the manner in which a number of fundamental concepts are defined. These concepts will now be discussed.

##### **4.4.2.1 Quality**

In ISO 9000 (1999:6) the concept quality is defined as fitness for purpose or conformance with requirements. This definition does not allow for high quality or low quality. A product either conforms with its specifications/purpose or it does not. Ideally, conformance with requirements is what organisations should aim for. There is an onus on getting things right the first time. IOS 9000 outlines rules and guidelines to be followed by management in order to achieve fitness for purpose.

Quality can be a "magic bullet" which provides lower cost, higher customer service, better products and services and higher margins. However, without managing quality, assuring and adding value become an impossible proposition. According to Peters (1999) the concept of quality in ISO 9000 involves:

- understanding what people want from a service or product and delivering it to match those needs (fitness for purpose);
- drawing detailed specifications, based on the articulated customer needs and delivering carefully to them (conformance specification);
- understanding and managing the variables in the manufacturing or service delivery process which can lead to deviation from specification (process control); and
- keeping detailed records of the process, allowing deviations to be traced and rectified (quality audit or document control).

Peters (1999) states that if a service is truly fit for its purpose, has had a specification set out and followed accurately and if it can be done consistently, knowing when something goes wrong and knowing how to rectify it and keep the problem from re-occurring, an institution can claim that service quality is being well-managed. According to Peters (1999) the above mentioned tenets can be traced directly to the notion of codifying and independently setting third-party issued quality standards, best exemplified by the ISO 9000 quality series.

#### **4.4.2.2 Total quality**

Four elements are involved in total quality, namely processes, systems, people and management. Whilst the application of effective systems may provide a strong basis for the systematic achievement of quality, concentration on this aspect to the exclusion of all else will result in failing to achieve critical targets and goals. In order to achieve total quality, organisations must concentrate upon all aspects of performance that have impact on the customer, as quality is what gives the customer complete satisfaction (ISO 9000, 1999:2).

#### **4.4.2.3 Quality management**

ISO 9000 (1999:3) defines quality management as all activities that determine the quality policy and objectives and implement them by means such as quality planning, quality control, quality assurance and quality improvement within the quality system. Successful quality management requires annual improvements in quality and annual reductions in quality related costs.

Czuchry *et al.*, (1997) state that the most important role of all levels of management in a quality improvement initiative is to be committed, dedicated and personally involved with every aspect of the quality effort.

Along with the setting of expectations for the strategic quality objective, management has to create a clear, realistic vision of what the objective is to do for the institution and has to motivate all employees to believe in the vision of the institutions as a key to successful change towards improvement. It is the responsibility of management to create a culture which supports and reflects the strategy for quality and quality assurance (Czuchry *et al.*, 1997). A lack of management commitment to the strategic quality objectives at any level of the institution will result in low employee interest and participation.

According to Czuchry *et al.*, (1997) the artistry of quality services requires building relationships between customers, employees and other stakeholders. Employees need to work harder and smarter and must adopt a culture of achievement. Managers must change from traditional directional roles to leadership and coaching roles and inspire employees to excel. Delivering an exceptional service is difficult because trust relationships are fundamental and because old attitudes and systems must be replaced with new attitudes and systems. Recognising that the individual is fundamental to achieving any institutional system changes, helps to implement large-scale changes in the methods of doing business. Change does not come easily or quickly, but can be achieved by helping team members to transition through each stage. Top management support and frequent review, encouragement and corrective actions are vital throughout the process of change.

#### **4.4.2.4 Quality control**

Quality control involves all the operational techniques and activities that are used to fulfil requirements for quality. These techniques and activities include measuring, examining, testing, gauging one or more characteristics of an entity and comparing these with specified requirements in order to determine whether conformity is achieved for each characteristic (ISO 9000, 1999:6).

#### 4.4.2.5 Quality assurance

According to ISO 9000 (1999:3) quality assurance is a prevention based philosophy. Quality assurance is the total system of activities implemented within the quality system which provide assurance and objective evidence to management and the customer that an adequate level of quality is being achieved. Quality assurance contains a future connotation and is about products working reliably in future and about service activities being dependable and consistent. Quality assurance has to give confidence that future activities will produce the desired end result.

Sparkes (1998:2-3) state that the planned and systematic actions needed to provide confidence in an organisation's capabilities include the following:

- a set of procedures for obtaining information on how well the methods for achieving quality are known and practiced; and
- ensuring that all taking part in the quality initiative have clear job descriptions and know their responsibilities, carry out their responsibilities competently and on time, are properly trained and retrained, keep appropriate records and participate in the procedures for ensuring the tasks necessary for achieving good quality are being carried out.

ISO 9000 (1999:6) indicates that only when an organisation has determined the amount of quality assurance that is needed, the processes, procedures and test mechanisms to achieve, it can be designed. If an organisation achieved success by means of following systems and procedures in a relatively formal way and continue to operate following precisely the same rules and methods, there is a greater chance that the desired result will be achieved in future. This is quality assurance and it is achieved by implementing quality system ideas. There is no guarantee that all activities and products will perform perfectly when following such a philosophy, although it has been consistently found that where quality systems are introduced and followed, failure rates and problems are cut dramatically.

According to Shutler and Crawford (1998) and Doherty (1995) a goal is senseless without a plan for achieving it. ISO 9000 recognises this truth by outlining how it intends that its requirements for quality assurance should be achieved. The mechanism which ISO 9000 specifies is continuous improvement through preventive action, characterised by thoroughness, regularity and incrementally.

#### 4.4.2.6 Quality assurance systems

Quality assurance systems are defined as systems which provide the basis for systematic methods of working and demand a disciplined approach to the performance of work (ISO 9000, 1999:7). According to Freeman (1994:14) a quality assurance system is merely a term used for a well-run management system.

Poor materials, design, construction, equipment and workmanship, together with poor training, attitudes, procedures and supervision are not the root causes of organisational problems (ISO 9000, 1999:2). Management is overwhelmingly responsible for the difficulties which cause subsequent problems. Recent studies have confirmed that over 95% of problems can be traced back to management deficiencies.

Quality assurance systems were introduced in the late 1950s and more commonly in the 1960s to help, guide and advise the management's of organisations regarding those areas in which managers consistently under-perform. Quality system standards were developed with the purpose of advising how to prevent problems and recurrence of problems which lead to inferior products or services. Quality assurance systems have built-in quality improvement programmes (ISO 9000, 1999:2).

Freeman (1994:15) states that the implementation of a quality assurance system is an approach to organising work which ensures that:

- the organisation's mission and aims are clear and known to all;
- the systems through which work will be done are well thought through, foolproof and communicated to everyone;
- it is always clear who is responsible for what;
- what the organisation regards as quality is well-defined and documented;
- there are systems to check that everything is working according to plan; and
- when things go wrong there are agreed ways of correcting them.

According to Doherty (1995) the philosophy of ISO 9000 is based on the following key beliefs:

- The primary aim of quality systems is to achieve good management control, which will result in good quality of output, be it a product or a service.

- ISO 9000 standards are not designed primarily to address technical inadequacy. It is the management of the infrastructure of the organisation which needs to be examined.
- A quality system meeting the ISO 9000 standards, does not guarantee to provide perfection at all times.
- IOS 9000 does not supersede or take the place of product/service specifications or standards, but is complementary to such specifications or standards.
- A clear understanding of roles, responsibilities and authority across the whole institution.
- A wide understanding of the institution's aspirations and mission objectives.
- A wide sense of ownership of quality across the whole institution.
- A clear articulation of the respective rights and responsibilities.
- A high profile for internal training for all personnel.
- Constantly improving standards of module design, documentation and delivery.
- One quality management system for the whole institution.
- Internal audit as a means of internal benchmarking and spreading good practice.

In order to create and run a quality assurance system, a number of tools, which can be referred to as the building blocks of a quality assurance system, are used (Freeman, 1994:24-28). The building blocks of ISO 9000 will now be discussed.

#### **4.4.3 The building blocks of ISO 9000**

##### **4.4.3.1 Establishing customer needs**

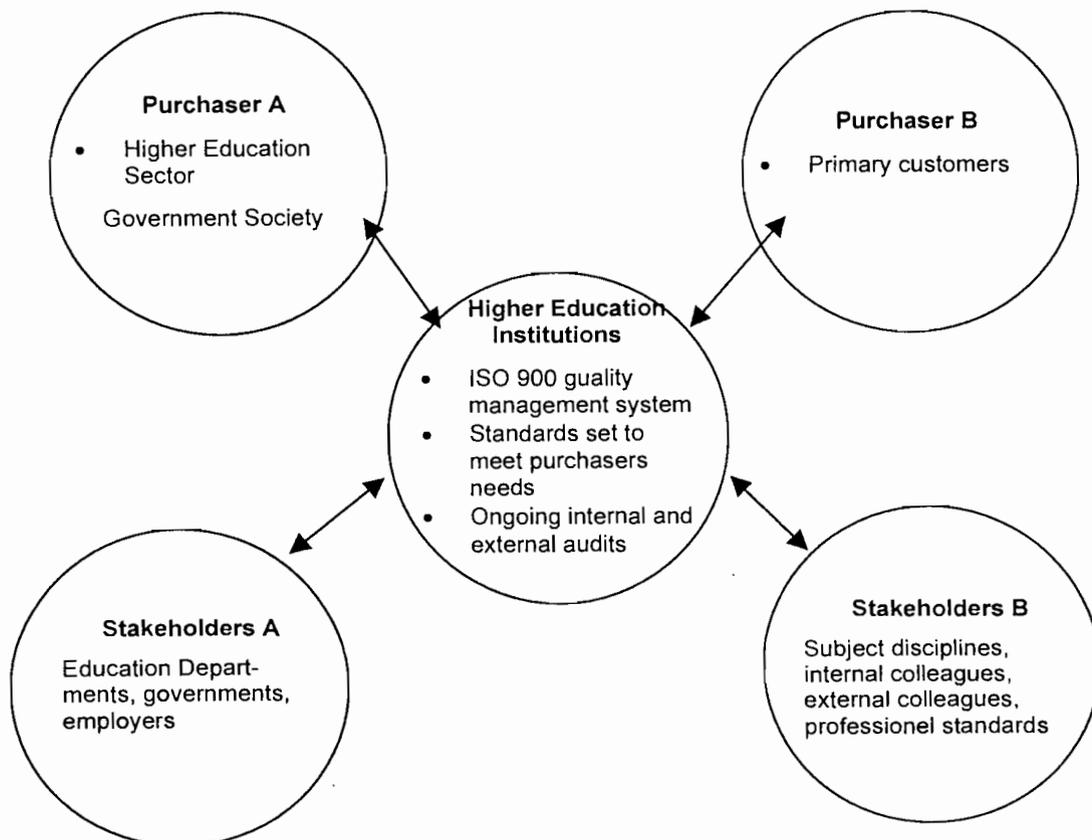
Although the ISO 9000 series is the international standard for quality assurance systems intended for manufacturing industry, Peters (1999) state that service branding and the significance of the brand can hardly be understated to business. Brands state that "what you expect is what you get, and until we tell you differently, that's what you will get every time". Brands deliver a trust in a service and customers pay for services that can be trusted. Service brands need to be reliable and

replicable even if it is not exactly the same all the time. Without quality assurance, brands become an impossible proposition.

As service businesses, higher education institutions have generally failed to build brand strategies in the eyes of their customers. While these institutions are often the embodiment of what is recognised as empowerment organisations, the benefits of this empowerment have been felt more keenly by teaching and research faculty members than by customers and the wider publics of these institutions (Peters, 1999). There is, however, every need for regulatory bodies to insist that what has been promised by a provider is what is delivered. By implementing ISO 9000 institutions can assure that the promise is delivered.

The key accountabilities of higher education institutions, as illustrated in Figure 4.15, indicate that these institutions have several customers:

**Figure 4.15 : Key accountabilities in higher educational organisations in ISO 9000 terms (Doherty, 1995 : 5)**



#### **4.4.3.2 The mission of the institution**

Quality assurance starts with a clear sense of what the institution wants to achieve: its mission. It will be pointless to install a quality assurance system in an institution where no shared view of what will constitute success, exists (Freeman, 1994:19).

A mission statement is aspirational and it raises the sights of the institution to a higher level of achievement. According to Freeman (1994:19) a mission statement is:

- statement of what the institution is there to achieve;
- aspirational;
- in itself a quality statement; and
- not a set of objectives or targets.

Once the mission is agreed, a quality assurance system compels the institution to agree on the methods by which things have to be done.

#### **4.4.3.3 Methods and tasks**

According to Freeman (1994:20) a great deal of uncertainty generally exists in educational institutions in terms of what tasks need to be done, how those tasks should be done and who is responsible for performing those tasks.

In the case where the 'what' is ill-defined, tasks may not get done at all; if the 'how' is ill-defined, different trainers may use conflicting methods; and if the 'who' is ill-defined the danger exists that tasks will not be carried out as no one regarded it as their responsibility (Freeman, 1994:20).

The critical point at which quality can effectively be assured is at the interface between two functions, when person A hands a task over to person B. According to Freeman (1994:21) an interface involves a preparer, a receiver and a task. The receiver expects that the preparer has done a job completely and in an agreed manner, as the receiver cannot do his job unless the preparer has done the same. It is thus essential to identify all the critical interfaces in an institution and to correct them.

#### **4.4.3.4 Standards**

In a quality assurance system it is assumed that there are agreed standards and/or formats in which tasks are handed over. Problems in terms of how well tasks need to be done can be resolved if there is general agreement to use the commonest definition of quality, namely fitness for purpose (Freeman, 1994:23). This means that all debates on quality are tested against standards and customers' expectations and standards.

#### **4.4.3.5 The quality policy**

A key part of setting up a quality system is to define a quality policy. The document has to be clear and specific and all staff must be able to understand it. The quality policy might cover the following aspects (Freeman, 1994:24):

- who is responsible for setting up and running the quality assurance system;
- how the system is to be monitored and reviewed by management;
- for which functions/tasks will defined procedures be written;
- how the implementation of those procedures will be monitored; and
- how failures to adhere to the procedures will be corrected.

#### **4.4.3.6 Documented management controls**

According to ISO 9000 (1999:29) the foundation of any quality management system is its documented manuals, procedures and records. Although documentation is mentioned throughout the ISO 9000 requirements, too much documentation can result in system that is too regimented and stifles initiative. It is thus important to pitch the documentation at the right level, just enough to help staff to implement the system but not to drown them in paperwork and procedures.

##### **(a) The paper mountain**

All organisations have a paper mountain: memos, manuals, procedures and work instructions intending to ensure that jobs are carried out correctly. In order to implement a quality system successfully, the paper mountain must be brought under control. Most organisations do this by dividing their paper mountain up into three levels and then ensuring that the people at the right level receive the paperwork

appropriate for that level (ISO 9001/2, 1999:29). At top management level there is a need for policy documentation, with no detailed procedures, but with reference to where those procedures can be found. The next level will be a level of procedures, which may be brought together in one or more procedure manuals that contain all the main procedures to which a number of people will require access to. At the lowest level detailed work instructions or procedures that have a limited circulation requirement are kept by the area where they are needed (ISO 9001/2, 1999:29)

#### **(b) · The quality manual**

The typical form of the top level document used in drawing up and implementing a quality system is a quality manual. The quality manual is a reference document for the implementation of the quality system (ISO 9001/2, 1999:30). It has the primary purpose of providing an adequate description of the system while serving as a permanent reference document on the implementation and maintenance thereof. In order for the manual to be effective, the following points should be considered (ISO 9001/2, 1999:30):

- It should be a reference base for policies and procedures, with the necessary explanations and justifications to ensure a complete understanding of the system by everyone.
- It should demonstrate that the policies and procedures have been well thought out.
- It should provide a basis for auditing to ensure maintenance of quality procedures against the tendency of systems to deteriorate.
- It should be written with the intention that it may become a training document, not only for specialists, but for staff in general.

If the above mentioned points are observed, the quality manual can become a continuity aid for operations despite employee turnover. Change in personnel can alter procedures but the manual will act as a stabiliser to minimise the alterations. It is vitally important that the manual is written by the specific organisation and is not taken from another organisation. The manual has to reflect the aims, objectives and procedures of the user organisation and there must be commitment to it within the organisation (ISO 9001/2, 1999:30).

### **( c ) Quality procedures**

Level two of the documentation generally involves written procedures covering all the main areas of ISO 9000, adapted to suit the purposes of the organisation. An organisation has to identify the functions or tasks where performance critically affects the service as perceived by the users. Procedures must then be written for each of these functions (Freeman, 1994:25). A procedure is a clear and systematic method of setting out how a function is to be carried out and who is responsible for each part of it (Shutler & Crawford, 1998:4).

Documentation at this level must be written as simply as possible in order to help those employees actually carrying out the tasks. Good procedures are not written by management in isolation from those performing the work. Typical procedures will have the following format (ISO 9001/2, 1999:31):

**Purpose:** what the procedure is for

**Scope:** what the procedure covers

**Responsibility:** who has quality responsibilities

**Procedure:** details of the procedure itself

**Annex:** associated forms, quality records, etc.

### **(d) Work instructions**

Procedures must be short and must not include unnecessary detail. When more detail is needed to ensure that a job is done in a precise manner, the extra detail is put into a work instruction, that relates to the detailed operation of a process or equipment. This documentation is found in the workplace where the job is carried out. It provides detailed instructions in local situations and need not be circulated widely but do need to be properly controlled and updated (ISO 9001/2, 1999:31).

According to Freeman (1994:26) procedures refer to a process that includes many sub-tasks and outlines what needs to be done. Work instructions refer to just one task and provide detailed guidance on how to complete the task.

### **(e) Quality plans**

ISO 9000 (1999:32) defines a quality plan as a document setting out the specific quality practices, resources and sequence of activities relevant to a particular

product, service, contract or project. A quality plan identifies the key elements of the product or service necessary to provide fitness for purpose and the means by which the elements are to be provided and measured. In a service business where relatively routine activities are undertaken on a daily basis, a quality plan can be as simple as a drawing, suitably dimensioned and inscribed or a straight forward checklist (ISO 9001/2, 1999:32). Where an organisation undertakes work in the form of projects, each project being different from any other, a unique quality plan should be produced for each project. A quality plan should contain data such as (ISO 9001/2, 1999:32):

- a statement of quality objectives;
- a list of quality and other resources to be implemented;
- a list of key factors which will demand special care and attention;
- a description of the project quality system;
- programme timescales;
- relevant project quality records and certification; and
- interfaces with clients and other inspection/regulatory/approval authorities.

**(f) Control of documentation**

The fact that sufficient documentation should be available to ensure the effective operation of the quality system, necessitates that the right documentation procedures be in the right places at the right times. All documentation should be legible, dated, readily identifiable and maintained in an orderly manner and should be reviewed and approved for adequacy by authorised personnel before issue. The system should provide a method for removing and/or disposing of all out-of-date documentation in order that no obsolete documents can be used. Changes to documents can only be made by approved people and master lists have to be kept of details regarding the present revision status. Documents must be re-issued after a suitable number of changes have been made (ISO 9001/2, 1999:33).

#### **4.4.3.7 Auditing**

Auditing refers to the means by which the organisation checks that the procedures are really being implemented. Regular checks are made in a systematic manner to identify whether or not the procedures are being adhered to (Freeman, 1994:26).

#### **4.4.3.8 Corrective action**

Corrective action is aimed at putting right what has been overlooked or done incorrectly. When auditing reveals that the procedure is out of date, the action will be to amend the procedure. Corrective action does not apply to the quality of the product, but to the quality of the production system as a whole (Shutler & Crawford, 1998:5). In the case where the procedure is still agreed to be the right way of doing things, past incorrect action must be corrected and attention must be focused on preventing the problem from recurring (Freeman, 1994:27).

#### **4.4.3.9 Management review**

The final part of a quality assurance system is management review. Regular review meetings are held to assess how well the quality assurance system is meeting the organisations' and the customers' needs and how effectively the system is being run. According to Freeman (1994:27) such a review would receive summary reports on the system which might document areas such as:

- Adherence to the audit schedule - are audits being done on time?
- Implementation of corrective action - are problems revealed by audits being corrected in the agreed manner and promptly?
- Procedure review - are procedures being regularly reviewed and amended if necessary?
- Mission - is the mission statement still appropriate?

#### **4.4.3.10 Certification**

ISO 9000 is a process that begins with the decision to use ISO 9000 as the basis for the organisation's quality system and ends with the verification and validation of the installed quality system (Wilson, 1996:38).

A competitive advantage over rivals is essential to realising the objective of maximising owner welfare and is obtained by performing multiple functions on the highest level the organisation can accomplish with the resources at its disposal (Nunes, 1997:46). Organisations often have difficulties to make an impression in the market, to create a favourable reputation, or to convince customers that it can indeed perform to the required standards expected. It is here that good quality practices, formalised by way of certification, registration and awards assist in making the organisation's reputation formally known to others. These measures serve to differentiate organisations from one another by way of achievement.

Quality certificates and awards signify success in achieving quality management. Since the 1980's, the most significant of these quality registration efforts to effect the world quality was the ISO 9000 series standards. Recognition to ISO 9000 and other quality awards serve as a public indication that the organisation's management system is well under control and complies to acceptable standards and requirements (Nunes, 1997:48). ISO 9000 certification provides the organisation with a competitive edge, giving a clear signal to customers that the processes are capable and under control, thus reducing quality audits and mistrusts in the organisation's ability to satisfy customer requirements (ISO, 1999:1).

In South Africa the SABS has introduced a formal SABS ISO 9000 quality management system. The SABS states that an organisation's involvement with the registration scheme provides proof that the organisation is serious about quality and carries more weight because conformance is underwritten by an independent third party (Edwards, 1997:7).

There are three forms of certification, described by Chase and Aquilano (1995:193) as:

- **First party certification**

An organisation audits itself against ISO 9000 standards. The conformance to criteria is subjectively self-awarded, without any outside intervention.

- **Second party certification**

A customer audits its supplier against ISO 9000 standards. The customer assesses the supplier's quality management system solely with the view to fulfil the requirements of the contract.

- **Third party certification**

An independent accredited national or international agency serves as the auditor. This is the only manner in which successful assessment may lead to officially recognised ISO 9000 registration.

The actual test for certification of a sufficient quality system is its effectiveness in relation to work affecting the quality of a product or a service. Auditors will, in assessing compliance, determine whether a person's work affects product and service quality and if the quality system is effective in preventing errors (Nunes, 1997:67).

ISO registration is not indefinitely valid, but dependent on periodic follow-up audits. Any organisation seeking ISO 9000 registration should thus realise that it is a long-term commitment of maintaining an effective quality management system and not simply a once-off effort.

According to Doherty (1995:3) and Crowe *et al.*, (1998) the implementation of ISO 9000 can help to ensure that an educational organisation provides a consistent quality product or service and can establish a firm basis for the development of a philosophy and methodology for the continuous improvement of quality.

ISO 9000 is not a product specification or a product standard, but rather a management system standard that covers a broad scope of quality system elements which are specified by 20 elements or requirements that will now be discussed.

#### **4.4.4 ISO 9000 standard series and requirements**

##### **4.4.4.1 ISO 9000 standard series**

The ISO 9000 standard series consists of five individual but related quality standards, detailed as follows (SABS, 1997:8 & Freeman, 1994:31):

- **ISO 9000**

ISO 9000 is a road map for quality management and quality assurance standards and the use of the other standards in the series.

- **ISO 9001**

A comprehensive model for quality assurance from initial product design, through development, production, testing, installation and servicing.

- **ISO 9002**

This model is applicable to quality assurance related in production, installation and servicing.

- **ISO 9003**

This model deals with quality assurance related to final inspection and testing.

- **ISO 9004**

Provides guidelines on quality management and the quality system elements that are subject to audits during the certification process.

ISO 9000 and ISO 9001 are advisory or guides, while the rest are standards to which a company can be certified. Of these, ISO 9001 is the most comprehensive. ISO 9001, 9002 and 9003 describe three distinct quality models of varying stringency for use in different applications. Each standard defines the activities for which an organisation must provide adequate and appropriate controls.

Kerzner (in Nunes, 1997:64) states that ISO 9000 is a three part, never-ending cycle involving:

- **Planning**

Planning is required to ensure that the objectives, goals, authority and responsibility relationships of each activity are properly defined and understood.

- **Controlling**

Controlling is required to ensure that the goals and objectives are met and that problems are anticipated and averted through proper corrective actions.

• **Documentation**

Documentation is used predominantly for feedback on how well the quality management system is performing to satisfy customer's needs and what changes are necessary.

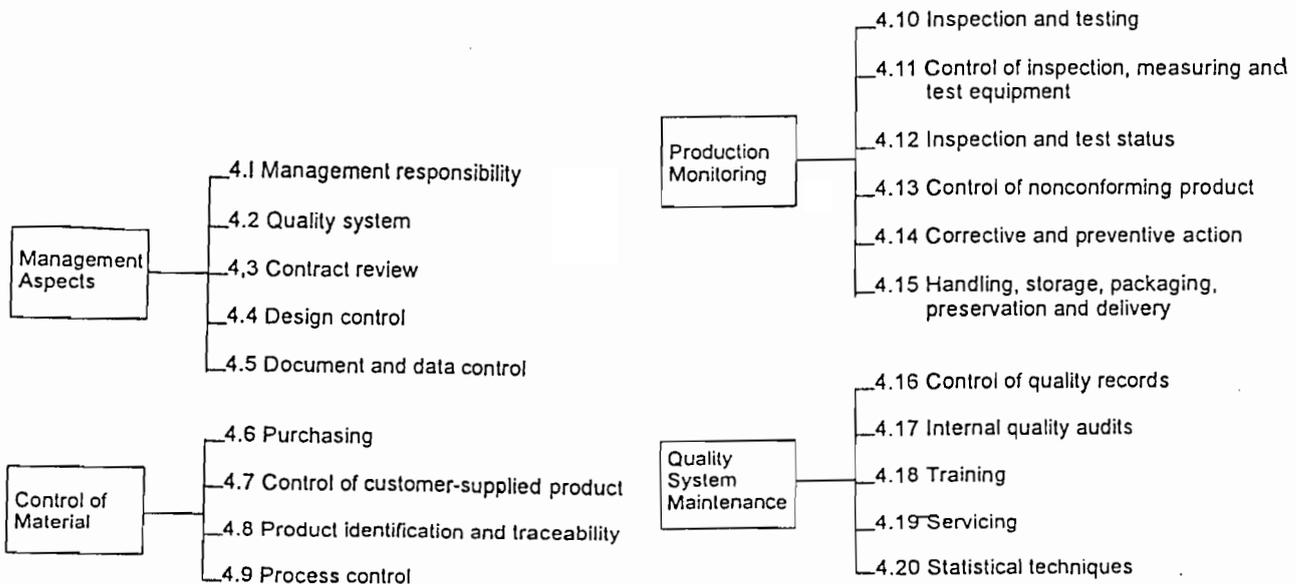
Once a decision has been taken in terms of which of the parts of the ISO 9000 series best apply to the specific educational institution, an ISO 9000 management system has to be created (Freeman, 1994:31).

Various activities or principal requirements exist within each ISO 9000 quality standard. ISO 9000 has the basic assumption that for any organisation, the process of providing a product or service to a customer is characterised by twenty basic elements or clauses. These clauses are interrelated and form a quality assurance system (Beaumont, in Nunes, 1997:65).

**4.4.4.2 ISO 9000 series requirements**

The ISO 9000 series requirements is represented in figure 4.16.

**Figure 4.16: The structure of the ISO 9000 series requirements (ISO 1999:12).**



The discussion that follows is a description of the basic ISO 9000 series requirements as it is used in manufacturing industries. In the discussion a number of guidelines on how to adopt and how to apply ISO 9000 in educational institutions, will be set out.

**(a) Management responsibility**

**(i) Requirement**

• **Quality policy**

Management has to define and document its policies for, and commitment to, quality. Management must ensure that this policy is understood, implemented and maintained at all levels in the organisation (ISO 9001/2, 1999:5.2; (ISO/CD2, 1999:11).

• **Responsibility and authority**

The responsibility, authority and the interrelation of all personnel who manage, perform and verify work affecting quality must be defined, particularly for personnel who need the organisational freedom and authority to (ISO 9001/2, 1999:5.3; (ISO/CD2, 1999:12):

- initiate action to prevent the occurrence of product nonconformity;
- identify and record any product quality problems;
- initiate, recommend or provide solutions through designated channels;
- verify the implementation of solutions; and
- control further processing, delivery or installation of non-conforming products until the deficiency or unsatisfactory condition has been corrected.

• **Verification: resources and personnel**

The supplier must verify in-house verification requirements, provide adequate resources and assign trained personnel for verification activities, such as inspection, testing and monitoring of the design, production and servicing processes and/or product. Design reviews and audits of the quality system, processes and/or product must be carried out by personnel independent of those having direct responsibility for the work being performed (ISO 9001/2, 1999:5.4; ISO/CD2, 1999:11).

• **Management representative**

The supplier must appoint a management representative who, irrespective of other responsibilities, have to define authority and has responsibility for ensuring that the

requirements of the international standard are implemented and maintained (ISO 9001/2, 1999:5.4; ISO/CD2 9000, 1999:12).

- **Management review**

The quality system adopted to satisfy the requirements of the International Standard must be reviewed at appropriate intervals by the supplier's management to ensure its continuing suitability and effectiveness. Records of such reviews have to be maintained (ISO 9001/2, 1999:5.73; ISO/CD2 9000, 1999:11).

**(ii) Application in educational institutions**

The quality policy of an institution should be understood by almost anyone who has an interest in the institution: learners, parents, lecturers, awarding bodies and employers. According to Freeman (1994:40) the quality policy has to set out the following:

- the type of quality commitment which the institution makes to its learners, employers, etc.;
- the broad methods which it takes to ensure that it meets that commitment;
- the systems available to put right omissions and errors;
- the broad responsibilities that different types of staff have for implementing the policy; and
- how to find out more about the quality system.

Educational management tasks should be assigned on the basis of appropriate training or experience and the training needs of management should be identified and provided for.

**(b) Quality system**

**(i) Requirement**

The supplier should establish and maintain a documented quality system as a means of ensuring that the product conforms to specified requirements. This includes (ISO 9001/2, 1999:5.6; ISO/CD2, 1999:12):

- the preparation of documented quality system procedures and instruction in accordance with the requirements of the international standard;

- the effective implementation of the documented quality system procedures and instructions;
- the preparation of quality plans and a quality manual in accordance with the specified requirement;
- the identification and acquisition of controls, processes, inspection equipment, fixtures, total production resources and skills that may be needed to achieve the required quality;
- the updating, as necessary, of quality control, inspection and testing techniques;
- the identification of any measurement requirement involving capability that exceeds the known state of the art in sufficient time for the needed capability to be developed;
- the clarification of standards of acceptability for all installation, inspection and test procedures and the applicable documentation; and
- the identification and preparation of quality records.

## **(ii) Application in educational institutions**

According to Freeman (1994:41) it is of utmost importance that educational institutions ask the following two questions in order to specify the quality system, to avoid irrelevant detail and a blind and inappropriate application of ISO 9000 (designed for manufacturing sectors) to education:

- What kind of a business are we really in?
- What is really critical?

For any quality assurance system to work well, it is essential that it concentrates on the things which make a difference. Areas that might prove to be critical in most training and education organisations are (Freeman, 1994:41):

- how market needs are identified;
- how needs are turned into curricular or course specifications;
- how learners are recruited and counseled;
- how the progress of learners are monitored;

- how learner achievement is assessed;
- how staff are selected;
- how staff are developed; and
- how courses are evaluated.

It is the responsibility of management to decide which items are critical and for which items there will be a quality policy. The quality policy should set out the approach of management to each identified critical function. For each of the identified functions, the policy should be followed by the writing of a detailed operational procedure.

### **(c) Contract review**

#### **(i) Requirement**

The supplier has to establish and maintain procedures for contract review and for the co-ordination of these activities. Each contract must be reviewed to ensure that the requirements are adequately defined and documented. Any requirements differing from those in the tender has to be resolved. Records of such contract reviews has to be maintained (ISO 9001/2, 1999:5.10; ISO/CD2, 1999:14).

#### **(ii) Application in educational institutions**

The term contract review is a typical example of manufacturing terminology which is quite difficult to translate into education and training. In educational organisations contract review is, however, clearly relevant in the case where a training supplier has received a contract to supply a training programme for a group of teachers. ISO 9000 then obliges the educational institution to carry out three tasks (Freeman, 1994:54):

- to make sure that the customers' requirement is adequately defined and documented. This may include details of learners and their current skills and knowledge;
- in the case of the customer having changed the requirement since any earlier specification, it is being taken account of; and
- to check that the organisation has the resources to fulfil the contract, such as skilled staff, training rooms and appropriate learning materials.

**(d) Design control**

**(i) Requirement**

- **General**

The supplier has to establish and maintain procedures to control and verify the design of the product in order to ensure that the specified requirements are met (ISO 9001/2, 1999:5.43; ISO/CD2, 1999:19).

- **Design and development planning**

The supplier has to draw up plans that identify the responsibility for each design and development activity. The plans must describe or reference these activities and must be updated as the design evolves (ISO 9001/2, 1999:5.45; ISO/CD2, 1999:17).

- **Activity assignment**

The design and verification activities must be planned and assigned to qualified personnel equipped with adequate resources (ISO 9001/2, 1999:5.46; ISO/CD2, 1999:17).

- **Organisational and technical interfaces**

Organisational and technical interfaces between different groups must be identified and the necessary information documented, transmitted and regularly reviewed (ISO 9001/2, 1999:5.47; ISO/CD2, 1999:18).

- **Design input**

Design input requirements relating to the product has to be identified, documented and their selection reviewed by the supplier for adequacy. Incomplete, ambiguous or conflicting requirements must be resolved with those responsible for drawing up these requirements (ISO 9001/2, 1999:5.48; ISO/CD2, 1999:17).

- **Design output**

Design output must be documented and expressed in terms of requirements, calculations and analysis. Design output has to (ISO 9001/2, 1999:5.54; ISO/CD2,1999:18):

- meet the design input requirement;
- contain or reference acceptable criteria;

- conform to appropriate regulatory requirements whether or not those have been - stated in the input information; and
- identify those characteristics of the design that are crucial to the safe and proper functioning of the product.

- **Design verification**

The supplier has to plan, establish, document and assign functions for verifying the design to competent personnel. Design verification must establish that design output meets the design input requirement by means of design control measures such as (ISO 9001/2, 1999:5.55; ISO/CD2, 1999:18):

- holding and recording design reviews;
- undertaking qualification tests and demonstrations;
- carrying out alternative calculations; and
- comparing the new design with a similar proven design, if available.

- **Design changes**

The supplier must establish and maintain procedures for the identification, documentation and appropriate review and approval of all changes and modifications (ISO 9001/2, 1999:5.57; ISO/CD2, 1999:19).

**(ii) Application in educational institutions**

Freeman (1994:60) states that this requirement emphasises the need for the whole process of design to be controlled. In order to determine what design control in education and training is, institutions should first identify what the product is that education and training produces. If educational institutions wish to be in control of their products, they need to be in control of the quality of the process that is offered to learners and the quality of their final achievement. This cannot be achieved if institutions do not have a design process to plan what will be offered.

According to Freeman (1994:61) the design process in educational institutions is course planning as well as planning the teaching of the courses. If an institution plans the wrong courses, whatever the quality of delivery, the courses would still be wrong. The main purpose of the design system is to take the identified needs of the

customer and to develop a way of meeting these. Design has to include the following aspects (Freeman, 1994:61; Shutler & Crawford, 1998:8-9):

- curriculum plans;
- course plans;
- learning materials;
- assessment materials;
- work placements; and
- handouts.

In educational institutions design and development planning is done at many levels. At course level it might entail the identification of critical tasks that go into the development of a course plan; identification of what the output of that task is and deciding who is responsible for carrying it out (Freeman, 1994:62). In terms of design input. Freeman (1994:64) suggests that a standard checklist, specifying what would be expected to be known before designing a course, be designed and incorporated as a work instruction for the procedure on design control. Such a checklist might include the following aspects (Freeman, 1994:64):

- characteristics of learners;
- the learning outcomes to be achieved;
- number of hours available for study;
- types of learning with which learners are familiar; and types of support available to learners.

As even the most carefully designed course might have to be changed after the initial design has been approved, it is essential to have a system for identifying when changes are needed and for making and recording those changes (Freeman, 1994:65). For most types of education and training provision, the following measures would be required (Freeman, 1994:65):

- reviewing the course regularly to determine if the need has changed;
- specifying where changes are to be recorded; and
- specifying who is to receive copies of these changes.

## **(e) Document and data control**

### **(i) Requirement**

The supplier has to establish and maintain procedures of all documentation and data that relate to the requirements of the International Standard. Documents must be reviewed and approved for adequacy by authorised personnel prior to issue. This control must ensure that the pertinent issues of appropriate documents are available at all locations where operations essential to the effective functioning of the quality system are performed and obsolete documents are promptly removed from all points of issues or use (ISO 9001/2, 1999:5.13; ISO/CD2, 1999:13).

### **(ii) Application in educational institutions**

The most common categories of quality assurance documentation are procedures, work instructions, specifications and quality records. In the case where a new training course is introduced, all relevant staff need to have copies of the course specification (Freeman, 1994:67). Document and data control can be applied to the course specification in the following manner (Freeman, 1994:68):

- Each edition should have a version number and date.
- Each edition should be signed by the course tutor before issuing it.
- A list of tutors should be kept.
- Each new revision should be send to all tutors.
- Users should be asked to confirm destruction of out of data specification.

## **(f) Purchasing**

### **(i) Requirement**

#### **• General**

The supplier has to ensure that purchased products conform to specified requirements (ISO 9001/2, 1999:5.58; ISO/CD2, 1999:19).

#### **• Assessments of sub-contractors**

The supplier must select sub-contractors on the basis of their ability to meet quality requirements and has to establish and maintain records of acceptable sub-contractors. The selection of sub-contractors and the type and extent of control

exercised by the supplier, must be dependent upon the type of product and, where appropriate, on records of sub-contractors' previously demonstrated capability and performance. The supplier must ensure that quality system controls are effective (ISO 9001/2, 1999:5.60; ISO/CD2, 1999:20).

- **Purchasing data**

Purchasing documents has to contain data clearly describing the product ordered including, where applicable (ISO 9001/2, 1999:5.62; ISO/CD2, 1999:19):

- the type, class, style, grade or other precise identification;
- the title or other positive identification and applicable issue of specifications, drawings, process requirements, inspection instructions and other relevant technical data, including requirements for approval or qualification of product, procedures, process equipment and personnel; and
- the title, number and issue of the quality system to be applied to the product.

- **Verification of purchased product**

Where specified in the contract the purchaser or his representative must be afforded the right to verify at source or upon receipt that the purchased product conforms to specified requirements. Verification by the purchaser must not absolve the supplier of the responsibility to provide acceptable products nor must it preclude subsequent rejection. When the purchaser or his representative elects carry out verification at the sub-contractor's plant, such verification must not be used by the supplier as evidence of effective control of quality by the sub-contractor (ISO 9001/2, 1999:5.63; ISO/CD2, 1999:20).

**(ii) Application in educational institutions**

According to Freeman (1994:69) educational institutions are likely to purchase a range of items externally, including:

- learning materials;
- consultancy;
- external examiners and assessors; and
- awarding body services.

To each of these items the principles of purchasing should be applied. An institution needs to identify and specify the following (Freeman, 1994:70):

- the standard of performance required;
- the selection process;
- the records that it wishes the suppliers to keep; and
- the resulting list of approved suppliers.

**(g) Control of customer supplied product**

**(i) Requirement**

The supplier has to establish and maintain procedures for verification, storage and maintenance of purchaser supplied products for incorporation into the supplies. Any such product that is damaged, lost or is otherwise unsuitable for use has to be recorded and reported to the purchaser (ISO 9001/2, 1999:5.23; ISO/CD2, 1999:19).

**(ii) Application in educational institutions**

According to Freeman (1994:71) educational institutions rarely encounter purchaser supplied products. The few instances where it might apply, include the following:

- a customer who supplies training manuals to be used in a course; and
- a customer who supplies equipment to be used in a course.

Institutions have to check whether the right product has been sent to them; have to store it carefully and report to the customer any loss or damage to the product (Freeman, 1994:71).

**(h) Product identification and traceability**

**(i) Requirement**

Where appropriate, the supplier must establish and maintain procedures for identifying the product from applicable drawings, specifications or other documents during all stages of production, delivery and installation. Where, and to the extent that traceability is a specified requirement, the individual product or batches of products must have a unique identification. This identification has to be recorded (ISO 9001/2, 1999:5.22; ISO/CD2, 1999:20).

## **(ii) Application in educational institutions**

Educational institutions generally have two principle products to which identification applies, namely (Freeman, 1994:73):

- the course taken by the learner; and
- the award given to the learner.

Educational institutions have to keep records of which courses have been taught. Product identification refers to the linkage of these titles with the written specifications of what each course comprises (Freeman, 1994:73). It is further essential to put in place a mechanism which ties each learner to each course, thus providing traceability.

### **(i) Process control**

#### **(ii) Requirement**

- **General**

The supplier has to identify and plan the production and where applicable, installation processes which directly affect quality and has to ensure that these processes are carried out under controlled conditions. Controlled conditions must include the following (ISO 9001/2, 1999:5.64; ISO/CD2, 1999:21):

- documented work instructions defining the manner of production and installation, where the absence of such instructions would adversely affect quality, use of working environment, compliance with reference standards/codes and quality plans;
- monitoring and control of suitable process characteristics during production and installation;
- the approval of processes and equipment, as appropriate; and
- criteria for workmanship which must be stipulated to the greatest practicable extent in written standards or by means of representative samples.

### **(ii) Application in educational institutions**

Freeman (1994:75) states that in order to apply process control in education, institutions should first identify what it is that constitutes the process. The heart of the

process is everything that is normally referred to as teaching, training, tutoring and assessment. The process includes everything that is expected from lecturers during the teaching process and which is critical to quality. A process control list for education would have to cover the following aspects (Freeman, 1994:76):

- teaching methods;
- how feedback to learners is given;
- how checks are made to ensure that learner needs are being met by the courses that they attend; and
- how learners are assessed.

Students may graduate, still not having learned what they hoped to learn, either because they were not assessed at all in some areas or because the assessment was incapable of distinguishing between satisfactory and unsatisfactory learning outcomes. ISO 9000 requires that students be examined in such a way as to ensure that the desired learning outcomes have actually been achieved before a certificate is awarded. The examination should be benchmarked against nationally recognised standards of attainment or where no such standards exist, against standards specified by the institution.

Freeman (1994:77) argues that process control is the most contentious area for educational institutions. This implies that any process control procedure should put special emphasis on ensuring that the right staff are in the first place selected and that continuous development of staff takes place. Traditionally institutions have simply appointed suitably qualified staff and left them to do the job. To do that is too complacent, but equally to over-prescribe how teaching is to be carried out, is pointless. According to Freeman (1994:77) recognises the fact that all detail of a service process cannot be specified in prescriptive detail but that quality can be assured through staff selection and development. A process control list for selection, training and development of staff would have to cover the following (Freeman, 1994:77):

- standards for staff selection;
- how the continuing relevance of staff skills is monitored;
- how staff development needs are met;

**(j) inspection and testing**

**(i) requirement**

• **Receiving inspection and testing**

The supplier has to ensure that incoming products are not used or processed until it has been inspected or verified as conforming to specified requirements. Verification must be in accordance with the quality plan or documented procedures. Where the incoming product is released for urgent production purposes, it must be positively identified and recorded in order to permit immediate recall and replacement in the event of non-conformance to specified requirements (ISO 9001/2, 1999:5.28; ISO/CD2, 1999:20).

• **In-process inspection and testing**

The supplier has to (ISO 9001/2, 1999:5.30; ISO/CD2, 1999:21):

- inspect, test and identify products as required by the quality plan or documented procedure;
- establish product conformance to specified requirements by use of process monitoring and control methods;
- hold products until the required inspection and tests have been completed or necessary reports have been received and verified, except when the product is released under positive recall procedures. Release under positive recall procedures must not preclude the activities outlined; and
- identify non-conforming products.

• **Final inspection and testing**

The quality plan or documented procedures for final inspection and testing must require that all specified inspection and tests, including those specified either on receipt of the product or in process, have been carried out and that the date meets specified requirements.

The supplier has to carry out all final inspection and testing in accordance with the quality plan or documented procedures to complete the evidence of conformance of the finished product to the specified requirements. No product must be despatched until all the activities specified in the quality plan or documented procedures have

been satisfactorily completed and the associated data and documentation are available and authorised (ISO 9001/2, 1999:31; ISO/CD2, 1999:18).

## **(ii) Application in educational institutions**

The service as perceived by the learner is broadly made up of physical items such as learning materials and the teaching and assessment processes. As the quality of teaching and assessment processes is already covered under process control, the only aspects of inspection and testing left are physical components of the product or the physical items used to make a product, for example teaching materials (Freeman, 1994:79).

Higher education institutions usually base their selection of students upon standards of attainment in public secondary examinations. Recently doubt has been cast on the validity of this approach. According to Shutler and Crawford (1998) many higher education institutions have recently complained that incoming undergraduates are less well prepared than they were in the past. It is clear that other factors have to be taken into account if students capable of making the transition from secondary to tertiary education are to be more reliably selected. ISO 9000 requires that incoming students be assessed to ensure that they satisfy appropriate entry requirements for the specific course.

## **(k) Control of inspection, measuring and test equipment**

### **• Requirement**

The supplier has to control, calibrate and maintain inspection, measuring and test equipment, whether owned by the supplier, on loan, or provided by the purchaser, to demonstrate the conformance of the product to the specified requirements. Equipment must be used in a manner which ensures that measurement uncertainty is known and is consistent with the required measurement capability:

The supplier has to (ISO 9001/2, 1999:5.25; ISO/CD2, 1999:21-22):

- identify the measurements to be made, the accuracy required and select the appropriate inspection, measuring and test equipment;
- identify, calibrate and adjust all inspection, measuring and test equipment and devices that can affect product quality at prescribed intervals, or prior to use, against certified equipment having a known valid relationship to nationally

recognised standards. Where no such standards exist, the basis used for calibration must be documented;

- establish, document and maintain calibration procedures, including details of equipment type, identification number, location, frequency of checks, check method, acceptance criteria and the action to be taken when results are unsatisfactory;
- ensure that the inspection, measuring and test equipment are capable of the accuracy and precision necessary;
- identify inspection, measuring and test equipment with a suitable indicator or approved identification record to show the calibration status;
- maintain calibration records for inspection, measuring and test equipment;
- assess and document the validity of previous inspection and test results when inspection, measuring and test equipment are found to be out of calibration;
- ensure that the environmental conditions are suitable for the calibrations, inspections, measurements and tests being carried out;
- ensure that the handling, preservation and storage of inspection, measuring and test equipment are such that the accuracy and fitness for use is maintained; and
- safeguard inspection, measuring and test facilities, including both test hardware and test software, from adjustments which would invalidate the calibration setting

## **(ii) Application in educational institutions**

Freeman (1994:81) states that in education and training this requirement refers to any instrument which is used to ensure that the planned learning takes place. Institutions need to identify the critical systems which are used to check learner progress and make sure that these proper steps are taken to ensure their validity and reliability. Equipment which might be included under this requirement includes the following (Freeman, 1994:82):

- assessment materials;
- moderation systems;
- external examination systems; and

- external awarding systems.

**(l) Inspection and test status**

**(i) Requirement**

The inspection and test status of products must be identified by using markings, stamps, tags, labels, routing cards, inspection records, test software, physical location or other suitable means, which indicate the conformance or non-conformance of the product with regard to inspection and tests performed. The identification of inspection and test status must be maintained throughout production and installation of the product to ensure that only the product that has passed the required inspections and tests is dispatched, used or installed (ISO 9001/2, 1999:5.18; ISO/CD2, 1999:24).

**(ii) Application in educational institutions**

ISO 9000 requires that the learner's test status is recorded in learner records (Freeman, 1994:86).

**(m) Control of nonconforming product**

**(i) Requirement**

The supplier has to establish and maintain procedures to ensure that a product that does not conform to specified requirements is prevented from inadvertent use or installation. Control must provide for identification, documentation, evaluation, segregation, disposition of non-conforming products and for notification of the functions concerned (ISO 9001/2, 1999:5.15; ISO/CD2, 1999:24).

The responsibility for review and authority for the disposition of non-conforming products must be defined. Non-conforming products must be reviewed in accordance with documented procedures. It may be reworked to meet the specified requirements, accepted with or without repair by concession, re-graded for alternative applications, rejected or scrapped. Repaired and reworked products must be inspected in accordance with documented procedures (ISO 9001/2, 1999:5.17; ISO/CD2, 1999:24).

## **(ii) Application in educational institutions**

If the product of education is seen as the learner, then non-conforming products would refer to learners who have failed examinations. Freeman (1994:86), however, chooses to limit non-conforming products to items used in teaching which are faulty. These items could include damaged books; teaching materials which do not fit the latest syllabus; and assessment items that are incorrect or not applicable.

## **(n) Corrective and preventive action**

### **(i) Requirement**

The supplier has to establish, document and maintain procedures for (ISO 9001/2, 1999:5.20; ISO/CD2, 1999:24-25):

- investigating the cause of non-conforming products and the corrective action needed to prevent recurrence;
- analysing all work operations, processes, concessions, quality records, service reports and customer complaints to detect and eliminate potential causes of non-conforming products;
- initiating preventative actions to deal with problems to a level corresponding to the risks encountered;
- applying controls to ensure that corrective actions are taken and that they are effective; and
- implementing and recording changes in procedures resulting from corrective action.

### **(ii) Application in educational institutions**

According to Freeman (1994:87) a non-compliance in education is the same as one in manufacturing. Procedures specify exactly what needs to be done and the work instructions specify how the tasks are to be done. Through auditing, any discrepancy might be detected. These discrepancies then require corrective action.

**(o) Handling, storage, packaging, preservation and delivery**

**(i) Requirement**

**• General**

The supplier has to establish, document and maintain procedures for handling, storage, packaging and delivery of the product (ISO 9001/2, 1999:5.35; ISO/CD2 1999:49).

**• Handling**

The supplier has to provide methods and means of handling that prevent damage or deterioration (ISO 9001/2, 1999:5.35; ISO/CD2, 1999:49).

**• Storage**

The supplier has to provide secure storage areas or stock rooms to prevent damage or deterioration of the product, pending use of delivery. Appropriate methods for authorising receipt and the despatch to and from such areas must be stipulated. In order to detect deterioration, the condition of the product in stock must be assessed at appropriate intervals (ISO 9001/2, 1999:5.36; ISO/CD2, 1999:49).

**• Packaging**

The supplier has to control packing, preservation and marking processes to the extent necessary to ensure conformance to specified requirements and must identify, preserve and segregate all products from the time of receipt until the supplier's responsibility ceases (ISO 9001/2, 1999:5.38; ISO/CD2, 1999:49).

**• Delivery**

The supplier has to arrange for the protection of the quality of the product after final inspection and testing. Where contractually specified, this product must be extended to include delivery to destination (ISO 9001/2, 1999:5.38; ISO/CD2, 1999:50).

**(ii) Application in educational institutions**

Freeman (1994:89) states that in order to be able to interpret this requirement, educational institutions should ask themselves the following question: "If the product of education is the process of learning and what is learnt, what do we have to handle, store, pack and deliver to do this?" Once agreement on this has been

reached, the system for handling and storing must be written down and be available to all who need to be informed about it.

**(p) Control of quality records**

**(i) Requirement**

The supplier has to establish and maintain procedures for identification, collection, indexing, filling, storage, maintenance and disposition of quality records. Quality records must be maintained to demonstrate achievement of the required quality and the effective operation of the quality system. All quality records must be legible and identifiable to the product involved. Quality records must be stored and maintained in such a way that they are readily retrievable in facilities that provide a suitable environment to minimise deterioration or damage and to prevent loss. Retention times of quality records must be established and recorded. Where agreed contractually, quality records must be made available for evaluation by the purchaser or his representative for an agreed period (ISO 9001/2, 1999:5.11; ISO/CD2, 1999:14).

**(ii) Application in educational institutions**

Deciding which records to keep as quality records is not an easy task. According to Freeman (1994:92) the process starts as each procedure is written. As an institution checks each procedure, it also has to check the specification of the quality records. Educational institutions will generally have to keep the following quality records (Freeman, 1994:92):

- learner records of courses taken, tests taken and results obtained;
- staff records which show qualifications held, appraisals and development activities; and
- course design records and evidence of how it matches market needs.

**q) Internal quality audits**

**(i) Requirement**

The supplier has to carry out a comprehensive system of planned and documented internal quality audits to verify whether quality activities comply with planned arrangements and to determine the effectiveness of the quality system. The audits

and follow-up actions must be carried out in accordance with documented procedures. The results of the audits must be documented and brought to the attention of the personnel having responsibility in the area audited. The management personnel responsible for the area must take timely action on the deficiencies found by the audit (ISO 9001/2, 1999:5.71; ISO/CD2, 1999:23).

**(ii) Application in educational institutions**

In terms of this requirement training and education does not differ from manufacturing. To comply with this requirement an institution should write a procedure which specifies how the internal audit will be done. This would include the following measures to be taken (Freeman, 1994:93):

- appoint internal auditors;
- ensure that the auditors have the necessary skills or arrange training if needed;
- have a schedule which ensures that the full range of procedures is audited and that audits are carried out on schedule;
- ensure that records are kept; and
- ensure that audit progress is reported to those managing the quality assurance process.

**(r) Training**

**(i) Requirement**

The supplier has to establish and maintain procedures for identifying the training needs and provide for the training of all personnel performing activities affecting quality. Personnel performing specific assigned tasks must be qualified on the basis of appropriate education, training and /or experience, as required. Appropriate records of training must be maintained (ISO 9001/2, 1999:5.40; ISO/CD2, 1999:28).

**(ii) Application in educational institutions**

As for manufacture, this requirement refers to the fact that only properly trained staff should be used for those activities affecting quality (Freeman, 1994:94). In education jobs should be well defined with clearly stated standards or minimum qualifications.

According to Peters (1999:2-3) students may fail to learn even when effective teaching methods are specified, because lecturers do not have the skills or training

required to put these methods into practice. ISO 9000 requires that teaching duties should be assigned on the basis of training or experience and that the training needs of lecturers be identified and provided for.

**(s) Servicing**

**(i) Requirement**

Where servicing is specified in the contract, the supplier has to establish and maintain procedures for performing and verifying that servicing meets the specified requirements (ISO 9001/2, 1999:5.70; ISO/CD2, 1999:20).

**(ii) Application in educational institutions**

Freeman (1994:95) states that few educational institutions have contracts that include commitments to provide after-course services. A vocational training programme may include a review after the trainee has been back in work for a period of time.

**(t) Statistical techniques**

**(i) Requirement**

The supplier has to use statistical techniques where applicable to control and verify processes. Statistical techniques must be applied to measure, describe, analyse, interpret and model variability in processes and their results. By applying statistical techniques organisations can solve technical problems, prevent problems arising from variability and enhance efficiency (ISO 9001/2, 1999:28; ISO/CD2, 1999:11).

**(ii) Application to educational institutions**

The aim with this requirement is to add a specialist view to determine whether or not the production is going according to plan. Freeman (1994:96) states that in education and training, adequate techniques are essential to determine whether an institution is achieving its objectives. If a question in terms of the successful learning of learners can be answered adequately without statistical techniques, there is no need to apply it. If such question can only be answered with the aid of statistical techniques, then the institution should employ such techniques.

According to Crowe *et al.*, (1998) and Lundquist (1997:164) the effort and time spent in the implementation of ISO 9000 and its 20 requirements varies widely from one

organisation to the other. Not only does it depend on the size, the type of products and/or services rendered, but also on the status quo of the organisation: the existing documentation status and the type of quality system already adopted and practiced. The decision to implement ISO 9000 clearly involves a multi-attribute deterministic perspective.

The literature review exposed that there are numerous views and opinions on the most effective and efficient manner to implement ISO 9000 in an organisation. Strategies range from very detailed plans to guaranteed quick-fixes (Nunes, 1997:95). An overview of a number of ISO 9000 implementation strategies will now be given.

#### **4.4.5 The implementation of the ISO 9000 series**

Rabbit *et al.* (1993:32) suggests the following sequence of activities for ISO 9000 implementation:

- **Senior management commits**

Management must commit to achieving ISO 9000 by showing determination, allocating resources and assigning responsibility.

- **Establish an ISO steering council**

The steering council has the primary responsibility for a development program and the proper allocation of resources. The council forms the focal point for all activities within the organisation.

- **Educate the council on ISO 9000**

The council members are expected to have detailed understanding of ISO 9000 and its elements. An evaluation should be conducted to assess the organisation's readiness for the effort.

- **Evaluate and select a certifying agent**

As it is an interpretive standard, grey areas may exist within ISO 9000. A certifying agent, understanding the business, should be selected to facilitate the implementation and registration process. Such an agent should show commitment to the quality effort and should allocate adequate time to the organisation.

- **Define quality responsibility**

The steering council defines the responsibilities for quality in the entire organisation. Documented proof, detailing that the activity related to the defined responsibility has taken place, must be kept.

- **Establish procedure structure**

The existing quality procedures must be evaluated for commonality and hierarchy.

- **Define documentation standards**

As many documents as possible are standardised. An organisation should attempt to develop generic documents which can serve as many purposes as possible.

- **Educate employees on ISO 9000**

Participation and commitment of employees at all levels of the organisation is essential in the implementation of ISO 9000. Employees should thus fully understand the requirements and advantages of ISO 9000. Employees who are trained and who understand the requirements and advantages of ISO 9000 are more confident and willing to buy into the effort.

- **Develop operational ISO management teams**

Management teams introduce the information obtained into the organisation and generate the momentum required to execute the various elements of the program. The operational units are set up by the department which becomes responsible to implement the ISO 9000 issues relevant to that department.

- **Procedure upgrades**

Management is responsible for evaluating existing procedures in order to identify areas where procedures are absent and/or require development and where procedures are present but not optimised and thus requires upgrading.

- **Establish corrective action tracking**

The establishment of a corrective action process is a requirement of ISO 9000. This is attained by internal audit teams that document their findings in a Quality Corrective Action Request (QCAR) which then becomes the primary method by which the strengths and weaknesses of the organisation are identified. Corrective actions are

documented in the QCAR, providing a base to additionally track the status of the implementation effort.

- **Train internal audit teams**

Internal audit teams are composed from different sections of the organisation under the leadership of a certified auditor. These teams also assist in auditing prospective suppliers on their compliance to quality standards.

- **Use corporate audit teams to verify compliance**

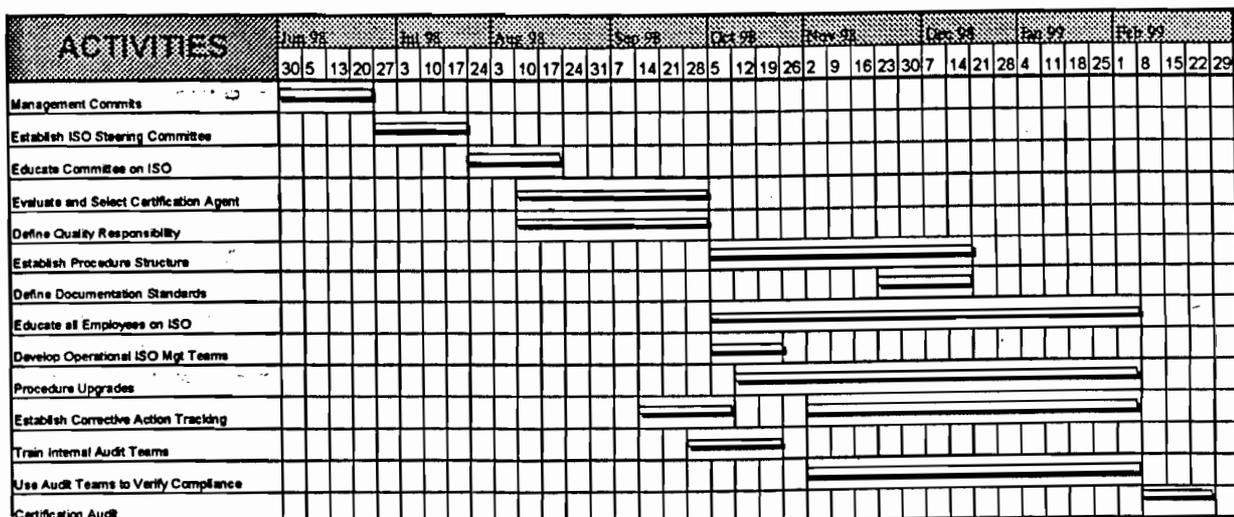
A Corporate Quality Assurance audit team provides the formal review of the organisation and compliance to procedures as required by IOS 9000. These teams operate on a higher level than the internal audit teams but have authority to investigate any level in the organisation they deem necessary.

- **Certification audit**

This is a comprehensive process that can take up to twelve weeks to complete. The auditors take up permanent office to investigate available documentation. The steering committee members act as assistants during this process. Once certification has been achieved, regular pre-determined periodic audits will ensure continued ISO certification.

The activities and their estimated duration, predecessor activities and sequence, are presented in Figure 4.17 in the form of an ISO certification project schedule.

**Figure 4.17 : ISO Certification Project Schedule (Rabbit et al., 1993 : 32)**



Wilson (1996:38) provides an eight-step process to ISO 9000 implementation. This process, which addresses all the requirements necessary to achieve ISO 9000 compliance, involves the following sequential steps or modules:

- **Step 1**

The organisation must investigate all the considerations related to the implementation of ISO 9000 to determine if the resultant quality system will be beneficial.

- **Step 2**

This step involves the decision to implement ISO 9000 standards. The specific ISO 9000 directive quality standard that will be most suitable to focus the organisation's implementation activity must be evaluated and selected.

- **Step 3**

The organisation's actual variation from acceptable ISO 9000 compliance must be determined through a shortfall analysis and its associated activities.

- **Step 4**

The ISO implementation plan has to be developed. Each activity for successful implementation must be subdivided into tasks detailing their schedule, the people responsible for these tasks and the allocated resources.

- **Step 5**

All the identified compliance variances with those elements of the standard associated with the organisation's documented quality system, are resolved. The new quality system is developed and documented.

- **Step 6**

All the remaining ISO 9000 implementation activities, including the related orientation, training, management approaches, employee interfaces and system related transitional concerns, must be addressed.

- **Step 7**

A series of reviews and audits must serve as guidance to assure that the organisation has successfully implemented its selected standard. This review is performed in preparation for the independent compliance accepted audit.

- **Step 8**

Information must be provided about the visit of the selected acceptance agency. The entire compliance process, advise in terms of what is expected and how the organisation can increase its chances of being successful, must be documented.

Grace Speciality Polymers (GSP) prepared a road map to ISO 9000 implementation and registration. This road map serves the purpose of outlining the procedures to follow to achieve ISO registration in less than two years and is an excellent visual summary that can be used as a core document to inform all employees as to the effort required and the expected time frame towards ISO 9000 implementation. The road map is illustrated in figure 4.18.

The success or failure of ISO 9000 implementation can be speculated on but the proof will only be in the actual implementation of a specific plan. Nunes (1997:95) suggests that organisations attempt to develop a unique, organisation-specific solution, taking into account what is deemed to be the best practices of all the suggestions and experiences provided.

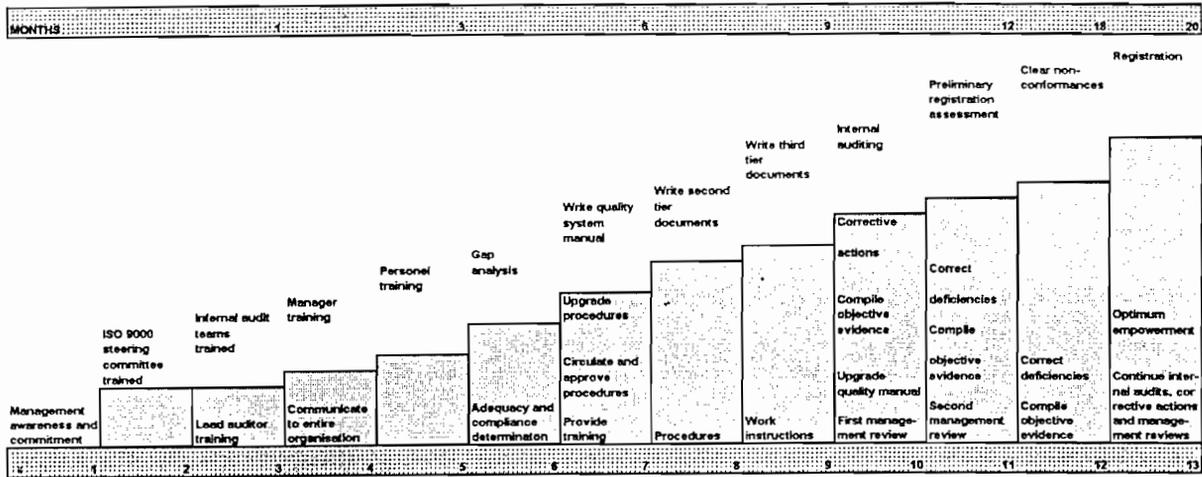
The literature that was studied makes it clear that the application of ISO 9000 to higher education institutions will involve a vast number of key educational management issues. Once an institution has developed and implemented a quality assurance system, it will be necessary to evaluate quality management system maturity for each requirement of the ISO 9000 series on a periodic basis.

#### **4.4.6 The ISO 9004 self-assessment model**

ISO 9004 self-assessment model intends to provide a simple, easy-to-use approach that can be used by any organisation to determine its relative degree of quality assurance management system maturity and to identify areas for improvement.

Specific features of the ISO 9004 self-assessment model are that it can (ISO/CD2, 1999:66):

Figure 4.18 : Road map to ISO 9000 registration (Benson & Sherman, 1995 : 6)



- be applied to the entire quality management system or to a part of the quality management system;
- be applied to the entire organisation or a part of the organisation;
- be completed in approximately one half day;
- be completed by a cross-section team or by one person in the organisation, when supported by top-management;
- form the input to a more comprehensive quality management system self-assessment process;
- be used to evaluate priority areas for improvement;
- identify vital actions for improvement; and
- be regularly used to appraise progress of improvement efforts.

The self-assessment model is structured to evaluate quality assurance management system maturity for each major clause of ISO 9004 and to provide guidance in the form of typical questions that the organisation should ask in order to evaluate performance in each of the major clauses (ISO/CD2, 1999:66).

#### 4.4.6.1 Performance maturity levels

The performance maturity levels used in the ISO 9004 self-assessment model are represented in figure 4.19.

**Figure 4.19 : Performance maturity levels (ISO 9000, 1999:67)**

<b>Maturity level</b>	<b>Performance level</b>	<b>Guidance</b>
1	No formal approach	No systematic approach evident; No results, poor results or unpredicted results
2	Reactive approach	Problem or prevention based systematic approach; Minimum data on improvement results available
3	Stable formal system approach	Systematic process-based approach, Early stage of systematic improvements; Data available on conformance to objectives and Existence of improvement trends
4	Continual improvement emphasised	Improvement process in use; good results And sustained improvement trends
5	Best-in-class performance	Strongly integrated improvement process; Best-in-class benchmarked results demonstrated

#### 4.4.6.2 Self-assessment questions (ISO 9000, 1999:67-70).

The example sets of questions that can be used by organisations to perform self-assessment are given below, against particular clauses from the main body of the International Standard.

##### (a) Interested party needs and expectations

- How does the organisation identify customer needs and expectations on a regular basis?
- How does the organisation identify peoples' need for recognition, work satisfaction. Competence and knowledge development?
- How does the organisation identify other parties' needs and expectations which can result in meeting long term objectives?

##### (b) Legal requirements

- How does the organisation establish its legal requirements?

**(c) Policy**

- How does the quality policy ensure that customer and other parties' needs and expectations are understood?
- How does the quality policy lead to visible and expected results?

**(d) Planning**

- How do the objectives translate the quality policy into measurable goals?
- How are the objectives deployed to each management level to assure individual contribution for achievement?

**(e) Quality management system**

- How does the quality management system ensure that processes are optimised to give predictable results at minimal costs?
- How does the quality management system ensure clearly established responsibilities that are communicated to all levels?

**(f) Management review**

- How does management review lead to an operational system?
- How does the organisation promote understanding of roles, responsibilities and involvement?
- How does the organisation assure that the competence level of each individual is adequate for current and future needs?

**(g) Information**

- How does the organisation assure that appropriate information is easily available for fact-based decision making?

**(h) Infrastructure**

- How does the organisation assure that the infrastructure is appropriate for optimised achievement of the policy and objectives?
- How does the organisation consider the optimal use of natural resources?

**(i) Work environment**

- How does the organisation manage the work environment for promotion motivation, satisfaction, development and performance of its people?

**(j) Finance**

- How does the organisation plan, provide, control and monitor its financial resources to maintain an effective and efficient quality management system?
- How does the organisation assure awareness amongst people about the link between quality and costs?

**(k) Product and/or service realisation**

- How has the organisation defined customer related processes to ensure consideration of customer needs?
- How has the organisation defined other interested party processes to ensure consideration of people?
- How are all interested party processes managed in practice?

**(l) Design and development**

- How has the organisation defined design and development processes to ensure consideration of needs?
- How are design and development processes managed in practice including the definition of design and development requirements and achievement of planned outputs?
- How are quality related activities such as reviews, verification, validation and configuration management addressed in design and development processes?

**(m) Purchasing**

- How has the organisation defined purchasing and partnership processes to ensure consideration of needs?
- How are purchasing processes managed in practice, including qualification and ordering needs?

- How does the organisation ensure quality of products and/or services from specification through to acceptance?

**(n) Production and service operations**

- How has the organisation defined processes and service operations to ensure consideration of needs?
- How are the production processes and service operations managed in practice from inputs to outputs?
- How are quality related activities such as control, verification and validation addressed in production processes and service operations?

**(o) Control of measuring and monitoring devices**

- How does the organisation control its measuring and monitoring devices to ensure that correct data is being obtained and used?

**(p) Measurement, analysis and improvement**

- How is relevant data obtained about satisfaction of all parties for analysis and improvement?
- How is data obtained on products and/or services and processes for analysis for improvements?
- How does the organisation use self-assessment methods of the quality management system for improving the system's overall effectiveness and efficiency?

**(q) Control of non-conformity**

- How does the organisation control non-conformities?
- How does the organisation analyse non-conformities for learning and improvement?

**(r) Analysis of data for improvement**

- How does the organisation use analysis for identifying major trends?

### **(s) Improvement**

- How does the organisation use corrective action for evaluating and eliminating recorded problems affecting its performance?
- How does the organisation use preventive action for evaluating the significance of potential problems affecting its performance?
- How does the organisation use systematic improvement approaches, methods and tools to improve its performance?

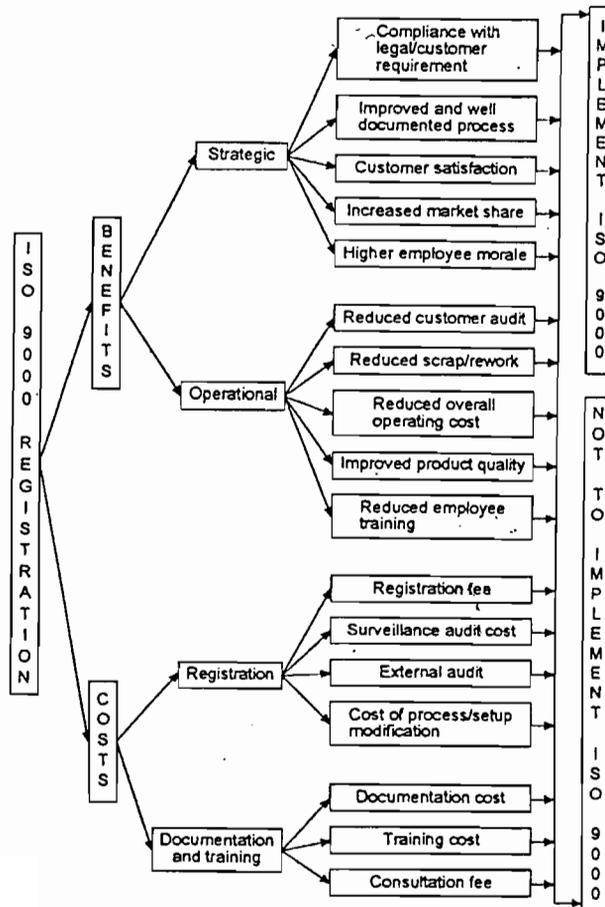
The self-assessment questions can be used in a flexible way according to the needs of the organisation. The effective use of self-assessment questions is limited to the imagination and ingenuity of the individuals in an organisation with an interest in achieving excellence (ISO/CD2, 1999:71).

#### **4.4.7 Benefits and barriers of ISO 9000 implementation**

By means of the amalgamation of relevant literature on ISO 9000 implementation and case studies conducted at a number of companies and institutions which successfully implemented ISO 9000, Crowe *et al.*, (1998) developed a model, namely the analytical hierarchy process (AHP) for the analysis of investment in ISO 9000. The analytical hierarchy process model is illustrated in figure 4.20.

The proposed model incorporates five levels of hierarchy. Level one is the objective of the model, level two indicates the two main attributes to meet the objective, level three lists the attributes under the respective criterion in level two, level four lists various sub-attributes corresponding to the higher level attributes and level five shows the two alternatives: whether or not to implement ISO 9000. According to Crowe *et al.*, (1998) the model is simple to use and is flexible in its application. It allows an institution to assess the state of its quality system before and after the implementation of ISO 9000 and is a helpful tool for analysing the potential costs and benefits of applying ISO 9000. Although the model is generic in its application, the structure and hierarchy can be easily changed to incorporate specific attributes.

**Figure 4.20 : AHP model for analysing ISO 9000 implementation  
(Crowe et al., 1998)**



According to the SABS (1997:3) and based on interviews conducted by Quazi and Padibjo (1998) at a number of organisations there are numerous benefits resulting from ISO 9000 implementation:

**(a) Internal benefits**

- More consistent quality of workmanship
- Error reduction resulting from increased employee participation, involvement and training
- Error reduction resulting from better systematic inspection
- Improved products resulting from better design control
- Improved productivity resulting from planning and team-work
- Reduction in cost associated with failures

- Reduction in quality problems
- Reduction in waste of human and financial resources
- Increase in motivation and commitment from employees

**(b) External benefits**

- Improvement in image, reputation and market share
- More competitive edge in instilling greater customer confidence
- Provides evidence of compliance with agreed standards and specifications
- Provides confidence that a product or service will be of consistent quality
- Recognition of compliance by an unbiased organisation

It seems that the approach of combining the key benefits to be gained from the quality system and self-assessment against specific clauses of ISO 9001/2, would enable an organisation to identify and initiate improvement projects that would potentially provide the best benefits to the organisation based on its priority needs. It would, however, be essential that an institution considers the following key success factors in the implementation of ISO 9000 ( Czuchry *et al.*, 1997)

- employee empowerment towards improvement, especially in terms of teamwork;
- employee ownership of the process of improvement;
- a sense common purpose amongst all employees;
- access to all relevant information needed to solve problems;
- organisational management accepting the responsibility to create clear quality value policies as well as high expectations for the quality objective;
- a clear, realistic vision of what the objective is to do for the organisation;
- management commitment, dedication and personal involvement with every aspect of the effort;
- open communication in a quality improvement environment;
- an organisational culture that supports and reflects the strategy towards quality assurance; and
- a system of internal audit by which action plans are implemented and progress is monitored.

#### **4.4.8 Perspective on ISO 9000**

The literature study that was undertaken made it evident that despite the interest and enthusiasm in terms of the potential of ISO 9000 for institutional quality assurance, little has been done to explore whether this standard might be successfully applied to higher education.

The implementation of ISO 900 to higher education, necessitate that a number of key educational management issues be faced, many of which are currently being debated in the literature studied. Although a number of higher education institutions have started to explore how they could adopt ISO 9000, few have attained success. The main reason for not achieving success might be the fact that ISO 9000 was designed for manufacturing industry. However, the underlying principles, concentrating on meeting customer needs and the elimination of errors, are ones which seems to be fully applicable in the new education and training markets.

ISO 9000's main emphasis is on the quality management system and quality assurance. The implementation of ISO 9000 would, for example, require a higher education institution to determine what students want to learn and then modify the course syllabus accordingly; adopt effective teaching methods and ensure that lecturers are suitably trained to use them; develop approaches to assessment which will ensure that entrants are up to the course and that graduates have indeed achieved the desired learning outcomes; and commit the institutional authority to take action in implementing the above

The fact that the above mentioned issues are important is not in doubt but may give rise to the impression that ISO 9000 is asking the impossible. However, the requirement for continuous improvement does not require immediate perfection, but does require that the institution faces up to problems inherent in its teaching system, investigate the root causes, and then take action to improve the situation. This is the challenge of ISO 9000 implementation in higher education.

#### **4.5 CONCLUSION**

The literature study that was undertaken made it clear that the methods to improve quality through the management of quality assurance are numerous, but that the implementation of these models is not always parallel.

One of the difficulties of talking about quality and quality assurance is its complex set of interrelationships. It is not merely tools and processes and it is not only portfolio assessments or continuous improvement. Attempts to produce quality by imitating any of these or countless other strategies are doomed to failure. The impact of quality and quality assurance processes do not lie in any cookbook approach to change (Langford & Cleary, 1995: xi). Quality assurance systems are collections of parts with some identifiable internal relations, but with equally identifiable sets of external relationships to other systems.

In the context of teacher training an internal quality assurance system which focuses on key strategic issues, continuous improvement rather than periodic development efforts and the integration of day-to-day management practices to support the implementation of a strategic plan for improvement, needs to be developed. In this chapter three models for the management of internal quality assurance in education were discussed. TQM, the strategic management model for purposes of internal quality assurance in higher education institutions, as well as the ISO 9000 series address the above mentioned issues, although not to the same extent and with differences in focus.

TQM is an organisational strategy that makes quality the responsibility of all employees. It is based on a philosophy of creating competitive advantage by reducing costs which derive from deviations from performance standards and by maximising the quality of products and services in terms of client requirements. It involves a large component of quality control and encompasses a set of techniques and systems for fostering continuous improvement through the whole organisation. It is, however, implicated that a strong quality management system is the foundation of building TQM in an organisation. The basic philosophy of ISO 9000 is the requirement of a quality system to be developed and implemented to ensure customer satisfaction. Although it emphasises improvement in an organisation, it is a prevention-based philosophy. ISO 9000 provides a series of standards for quality management systems. The strategic management model for purposes of internal quality assurance focuses on accountability and on seeking improvement through a process of institutional self-evaluation. Although not explicitly stated, it requires the development of a quality management system, a component of quality control and a disciplined approach to the performance of tasks. An essential element of the above

mentioned models for the management of quality assurance is a concern for processes in order to assure that form follows function.

TQM as well as the strategic management model for purposes of internal quality assurance emphasise the concept of a new management theory or philosophy, a new corporate culture and organisational transformation. Both these models address quality assurance as a direct management function. ISO 9000 does not require a transformation of management practices but rather the support and involvement of senior management in continuous improvement of the system through corrective action to prevent repeated mistakes.

TQM requires that all components of strategic management be addressed in the process of internal quality assurance. The implementation of the strategic management model for purposes of internal quality assurance involves all the components of strategic management, but focuses on the process of institutional self-evaluation. ISO 9000 does not address these issues in the same depth.

The ISO 9000 series is a guide to building a quality management system, but cannot be a substitute for TQM. The strategic management model for purposes of internal quality assurance is an uncontested guide for institutional self-evaluation, but can, as ISO 9000, not replace TQM. ISO 9000 can help an organisation to build a quality management system and the strategic management model for purposes of internal quality assurance can provide an organisation with a firm basis for institutional self-evaluation, which in both cases, is far from a total quality organisation. It seems that ISO 9000 fails to include some essential elements to obtain world-class quality, such as quality goals in the organisation's strategic plans, quality improvement at a revolutionary rate, training in the management of quality assurance and full participation by the entire work force. These elements are addressed in both TQM and the strategic management model for purposes of internal quality assurance. However, both TQM and the strategic management model for purposes of internal quality assurance fail to provide organisations with requirements or specific standards which can form a solid basis for improvement towards total quality. In order to cover these aspects and to develop a solid quality assurance system, ISO 9000 and the strategic management model for purposes of internal quality assurance with its focus on institutional self-evaluation, could be integrated into TQM.

For an educational institution that is located in TQM, the next step may be the implementation of ISO 9000. This would necessitate adjusting the existing quality management system for ISO 9000 conformance. An institution that is located in the ISO 9000 or institutional self-evaluation paradigm, might move towards TQM in order to reach total quality. For higher education institutions it might be suitable to implement the process of strategic management with a specific focus on the component of institutional self-evaluation, conform to the minimum requirements of ISO 9000 and then to upgrade gradually towards TQM.

It would be wrong for any organisation to conclude that ISO 9000, the strategic management model for purposes of internal quality assurance and TQM are interchangeable. However, ISO 9000 provides a framework for a quality assurance system that meets minimum requirements and the strategic management model for purposes of internal quality assurance provides a framework for, especially, institutional self-evaluation. The real difficulty remains organisational transformation to TQM, as most higher education institutions have only limited management capabilities, time required for implementation, incentives and resources. Hence the TQM implementation approach used in large companies cannot be directly adopted by most higher education institutions.

Quality assurance and quality management bring the focus of development and accountability together. Both accountability and quality assurance require a process of educational audit and review. Although many accountability systems operate without explicit criteria, quality assurance requires the establishment of systematic criteria for the standard of practice and the level of outcomes required. ISO 9000 implementation may be a stepping stone toward TQM practices, as it is relatively economical of resources and could be operated with minimal use of practicing academics whose primary concerns are held by many to be teaching and research.

It is necessary to explore the existing practices regarding the management of internal quality assurance in teacher training institutions in the Gauteng Province. The next two chapters expose the empirical research pertaining to existing internal quality assurance practices in teacher training institutions.

The next chapter presents the empirical research design.