THE APPLICABILITY OF TOTAL QUALITY MANAGEMENT TO THE ENGLISH HIGHER EDUCATION SYSTEM AND IMPLICATIONS FOR THE DEVELOPMENT OF TQM THEORY

VOL 1

MARLENE CLAYTON

Degree of Doctor of Philosophy

ASTON UNIVERSITY

May 1998

Aston University

The applicability of Total Quality Management to the English higher education system and implications for the development of TQM theory

Marlene Clayton

Degree of Doctor of Philosophy. 1998

Thesis Summary

The quality debate in English higher education has continued unresolved for over ten years, focusing on the meaning of 'quality' in higher education and how to assess and improve it. An obstacle to consensus has been the absence of an agreed statement of the purpose of higher education. Tensions exist between views of purpose which focus on the needs of the economy, and those which concentrate on the university fostering learning for its own sake. This thesis contributes to this debate, drawing on the development of TQM practice, vocabulary and culture, first in manufacturing, and then in the service sector and in education. Then follows an empirical investigation of Aston University's BSc Optometry programme. The views of 'quality' held by the different categories of 'stakeholders' or 'customers' of this programme have been collected and analysed using TQM and "the Voice of the Customer" techniques. Supporting evidence is provided for the research hypothesis that a TQM-based understanding of quality in higher education, set in the context of 'fitness for purpose' and 'meeting the needs of customers', would not only provide a shared understanding of quality and therefore a means of reconciling the needs of higher education stakeholders, but also a method by which quality in higher education could be measured, assessed and improved. A research conclusion is that the power of TQM is in the insight it can provide into what needs to be done to bring about higher education transformation. It is also suggested that by applying it to the complex environment of English higher education, light is shed on the basic concepts of TQM, and that TQM theory itself remains a developing area of study.

Key words and phrases

TQM. Universities. Customers. Stakeholders. The Voice of the Customer.

Dedication

Dedicated to the memory of my parents and my sister.

Acknowledgments

My thanks are due to many people who have helped me in different ways while I was working on this thesis. I have very much appreciated the instructive comments of my research supervisor, Dr. Fred Hewitt, who has provided guidance and support throughout the major stages of the project, and I particularly thank him. Completion of the thesis would have been very difficult without the practical help and co-operation of Mr. Derek Barnes of the Department of Vision Sciences at Aston University who helped me gain access to the 'customers' of the BSc Optometry programme who were the subjects of the research. I also thank the many people who gave their time and ideas in the interviews, discussion groups and responses to the questionnaires.

Thanks also go to Dr. Peter Slee of Durham University who provided help from the time when the idea for the research was first emerging, and whose subsequent input assisted its progress. Ideas about the mechanics of the survey were also contributed by Mr. Mike Hussey of Aston Business School, and by Ms Cari Loder of the Centre for Higher Education Studies, University of London Institute of Education.

Administrative help, and friendship, have been provided at Aston University by Mrs.Carol Ravenscroft and Mrs. Pam Lewis. Particularly warm thanks in this respect are due to Ms Rachel Probert who has helped me in lots of ways, including taking charge of the formatting of the final version of the thesis.

In a private capacity I owe much to my husband, Tony, who has given me unfailing support and encouragement to continue the research, even when his life might have improved if I had given it up.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

Introduction

In 1991 the Secretary of State for Education and Science stated that "the central issue for the universities in the 1990s will be how to maintain quality while expanding rapidly and economically" (Department of Education and Science, 1991b).

1. The quality issue in English higher education

The government has made funding for higher education conditional upon institutions' ability to demonstrate "quality" in delivering their purpose. Quality is therefore a pivotal issue in English higher education.

The broad purpose of this thesis is to make a reasoned and original contribution to the debate about the meaning of quality in higher education, and the means by which it can be assessed and improved. This is a debate which has continued, with little evidence of agreement on key points, for over ten years. The major contributors to the debate are the representatives of government on the one hand, and the representatives of the universities on the other. Other parties have also joined in, notably the employers of graduates.

A major obstacle to reaching consensus has been the fact that any attempt to determine the quality of a product or service is dependent on an explicit statement of purpose. Tensions exist between purposes which are focused on the needs of the economy (which is largely the government's position), and the more traditional role of the university in transmitting culture and fostering learning for its own sake. It has been said that:

> the debate over quality should be seen for what it is: a power struggle where the use of terms reflects a jockeying for position in the attempt to impose own definitions of higher education (Barnett 1992, p.6).

1.1 The government's agenda: their view of the purpose of higher education and their approach to "quality"

A major theme of government policy in the 1990s has been the universities' role in providing a highly skilled workforce to meet the needs of the economy. This was set out in the 1987 White Paper 'Higher Education: *meeting the challenge*'. In summarising the aims of higher education the, then, Secretary of State for Education and Science (Kenneth Baker) subscribed to the view that:

> Higher education should:
>
> - serve the economy more effectively
> - pursue basic scientific research and scholarship in the arts and humanities
> - have closer links with industry and commerce, and promote enterprise (Department of Education and Science, 1987, p.V).

A policy of expansion in the number of students in higher education was introduced, based on the premise that a better educated workforce would lead to an improvement in the United Kingdom's economic position. The higher education White Paper, published in 1991, (Department of Education and Science (DES), 1991a), continued the policy of expansion and predicted that 1 in 3 of all 18-19 year olds would be entering higher education by the year 2000, compared with 1 in 7 in 1987. The universities, according to the 1987 and 1991 White Papers, must also be open to a wider range of the population, i.e. higher education should be available to all who could benefit from it and not just to those in possession of 'A' levels; the traditional entry qualification.

However, because of overriding economic policy which requires the containment of public expenditure, the government has been unable to match the expansion in student numbers with a proportionate increase in funding. Consequently, for the past ten years or more, the higher education system has been encouraged to expand in terms of student numbers at the same time as being squeezed financially in real terms.

A major structural change in higher education was brought about by the Further and Higher Education Act, 1992. This abolished the "binary line" between the former polytechnics and the universities, bringing the two

together in a single sector with equal legal status and the same funding mechanism. The university sector changed from being one that was largely homogeneous, to being one that, although united by name, was quite diverse in terms of the background of the student intake and the kinds of programmes and qualifications offered. Against this background of changing size and structure and financial constraint, the government has been anxious to ensure that there is improvement rather than a diminution in standards and quality.

It has required the universities to demonstrate the quality of their educational provision in a way that would allow the information to be made available to all who need or want it, for example, prospective students and employers. From the government's point of view, this would enable comparisons and encourage improvement through a spirit of competitiveness This is consistent with its requirement that all public sector activities should become more accountable for their use of public funds, and that they should be able to demonstrate their efficiency, effectiveness and economy, as well as their efforts to improve in all of these areas.

The government has wanted answers to questions about comparative quality and standards. (Committee of Vice-Chancellors and Principals, 1994). It has wanted to ensure that evidence of quality and the distribution of resources are linked, and to know if there is a so-called "gold-standard" in the new heterogeneous system, i.e. would it be correct and useful to inform, say, a potential student from overseas that a degree from Oxford University is the same as one from Aston University, from the University of Central England in Birmingham and from the University of Luton? Or is there a threshold standard, and if so, how is it defined? What, for example, can an employer expect from a graduate which he or she would not get by employing someone without a university education? (Otter, 1991).

In an attempt to make the meaning of "quality" and "standards" explicit and to ensure that the quality of higher education is at least maintained during the period of expansion, reduced *per capita* student funding and changes in funding methods, the 1992 Act placed a statutory requirement on each Funding Council to establish teaching quality assessment exercises which would inform funding. Each Council was to determine for itself the assessment method to be adopted, in consultation with the institutions

affected. These exercises were to be in addition to the Funding Council's Research Assessment Exercise (which was already in place and used to distribute research funding), and the Quality Audit developed by the pre-1992 universities and, since 1997, carried out by the Quality Assurance Agency (QAA). The purposes of the assessment of the educational provision of English universities are currently given as:

a. To secure value from public investment:

   i By ensuring that all education for which the HEFCE provides funding is of approved quality, and by encouraging speedy rectification of major shortcomings in the quality of education;

   ii By using quality judgements to inform funding.

b. To encourage improvements in the quality of education through the publication of assessment reports and subject overview reports, and through the sharing of best practice.

c. To provide, through the publication of reports, effective and accessible public information on the quality of the education for which the HEFCE provides funding. (Higher Education Funding Council (England) (HEFCE), 1995b, p.4).

The government documents do not give a clear definition of what is meant by "quality" in higher education. The current position is that they have handed the problem of finding definitions to the universities while, at the same time, progressively tightening the grip of assessment and its relationship to funding.

1.2 The universities' agenda: their view of the purpose of higher education and their approach to quality

The linkage between funding and quality in delivering purpose has raised "quality" to a central issue for universities.

There are key divergencies of approach between the universities and the government in respect of quality because:

1 the universities do not necessarily share the government's view of the *purpose* of higher education and some of their representatives are

suspicious of the government's motive for introducing "quality'" assessment

2 the concept of "quality" is inextricably linked to "standards" which is a problematic term in the context of a heterogeneous higher education system.

Purpose

Some academics believe that too great a concern with the outside world, and especially with the economy, is damaging to the true academic values of scholarship, free enquiry and rigorous thought (Burgess, 1987). Barnett (1994) maintains that government ideology (the 'New Right', as described in Quicke (1988) and Jordan (1989), which promotes a belief in the distributive justice of the market, the centrality of choice and competition, and a diversified system of provision), is resulting in terms such as 'insight' and 'understanding' being devalued and increasingly superseded by those of 'skill' and 'competence':

> The new vocabulary of 'competence', 'learning outcomes', 'credit accumulation', 'learning profiles' and references to students as 'products': all these are not just symptomatic of internal changes to the higher education curriculum but also indicative of a re-shaping of knowing in response to the contemporary demands. (Barnett, 1994, p.43).

The quality debate, and particularly the issue of assessment, has re-opened questions about the continuing relationship between the universities and the government. In 1992 Barnett wrote:

> [the] various voices contributing to the [quality] debate are groups of actors attempting to secure their claim either to continue to defend their traditional idea of higher education and their means of valuing it (the academic community), or to impose alternative views of higher education with new means of assessing it. (Barnett, 1992, p.6).

The history of the relationship between the universities and the government provides the context for such comments. Until the 1970s an 'arm's length' relationship had existed between the two, protected by the University Grants Committee (UGC) which acted as a buffer between them. The universities held tenaciously to the concept of 'academic freedom', and to their view that

they must be autonomous experts trusted to run their own affairs for the greater good of society.

The question of the *purpose* of universities was not raised in any way that seriously affected them. There was a general assumption that they were a self-regulating group of experts in their academic subjects, providing an education for the minority of the population who would become society's leaders and specialists. The Robbins Report of 1963 (Robbins, 1963) asserted four essential aims for higher education, (instruction in skills; the promotion of the general powers of the mind; the advancement of learning, and the transmission of a common culture and common standards of citizenship), but as pointed out by Burgess (1977), these were mentioned in the first few pages of the report and not referred to again.

The changing economic climate in the 1980s led to a marked change in the relationship between the universities and the government. The government began to require a greater say in how public resources were allocated and they became reluctant to leave the distribution of funds to the UGC. It also needed to steer the universities towards expansion in student numbers and the provision of high quality educational programmes which would result in a workforce whose education had prepared them for their employment.

Trow (1994) has written about the government's motives for its intervention in the university system. He contends that Quality Assessment is a manifestation of what he calls "hard managerialism". He believes that the government is imposing an assessment system not because it is seriously questioning the quality of the UK higher education system, but because it does not believe that the universities can be trusted to manage themselves and introduce the changes required of them. He contends that the government is trying to transform the management of universities into a business model, i.e. a model it understands. Without an effective competitive market to control quality and cost, the government has not yet found for the universities an equivalent of the "bottom line"; the profit and loss sheet by which they would judge the performance of a commercial business. It is therefore, Trow argues, substituting assessment linked to funding which means control by an external bureaucracy.

Trow sets this approach against the academic norms and decision-making processes of the universities. Academics, he argues, work through intrinsic, not extrinsic rewards. Their satisfaction comes from internal motivations associated with their profession including, for example, a desire for a good reputation among their peers.

Despite the expressions of concern, however, it seems inevitable that while the government holds the purse strings, the pressures from quality audit and assessment and the drive towards a consumer culture will oblige the universities to make explicit their purpose - their mission, their objectives and their goals. Progressively they will only be financed to the extent that their published goals meet the needs of their 'customers', or 'stakeholders', and that they are demonstrably achieved.

Quality and Standards

In an attempt to retain charge of the situation, in 1994 the university Vice-Chancellors agreed to address the government's concerns about quality and academic standards. They were not against the principle of accountability, nor did they deny the need for quality assessment, but they did not agree with the mechanisms which were being put in place. Funding Council judgements about the distribution of public funds, according to the Vice-Chancellors (Committee of Vice-Chancellors and Principals (CVCP),1994c), should be based on information which, for the most part, is already available within the system. The universities did not want to be burdened with additional and expensive work for the purposes of assessment at a time when they were already having to find more economical ways of maintaining and improving standards for the increasing number of undergraduates.

The Vice-Chancellors also agreed to investigate a way of showing whether there is comparability of standards throughout the British University system and asked the Higher Education Quality Council (HEQC, now subsumed within the Quality Assurance Agency (QAA)), to help them with this task. The work of HEQC has produced reports on what graduates should be able to do (Wright, 1996), but the questions about the control and definition of an 'academic standard' remain unresolved.

The choice of a 'gold' or a 'threshold standard' is a key issue as it will influence the future development of higher education by either encouraging compliance with an agreed set of educational standards, or allowing variety

throughout the system. If compliance with a single gold standard is the preferred option, this raises additional questions about how the universities can deliver a standard programme when the entry standards of students are so varied, and when degree courses cover a wide range of subject disciplines and professional and vocational education. If diversity is to be encouraged, this clearly has different and very significant implications for the nature and structure of the system as the drive to respond to market forces and compete for students and resources becomes stronger.

1.3 The influence of the private sector's approach to quality

The government's interest in issues of quality has paralleled British manufacturing industry's revived emphasis on quality. It may be deduced that the government's own view of what comprises quality in higher education has been influenced by the way in which industry, and to some extent, the commercial service sector, have tackled the need to improve their quality and their marketing in order to compete on a global scale. In most instances, this has involved a heightened sense of competitiveness, a greater focus on providing the customers with what they need and want, and improved methods of quality control and quality assurance as a means of winning market share. The private sector is different from higher education, however, in that the purpose of a private sector organisation's work is usually evident and is decided by the company itself, and usually it is not controversial. Profitability is a visible measure of success.

Within the universities there have been two disparate reactions to these possible influences on the government. On the one hand, a reluctance has been demonstrated to consider any approach used in the private sector because of a belief that it is part and parcel of "hard managerialism". Others, however, have been prepared to research "quality", including commercial applications and, in a limited way, have experimented with some of the practices.

Total Quality Management (TQM) is an approach which has been applied successfully outside the education sector to bring about quality improvement. It has potential relevance to many of the issues raised within the higher education sector as it requires the identification of the needs of a range of customers, or 'stakeholders', and includes methods for ensuring

these are taken into account in the design and delivery of products and services. Evaluation and measurement are integral to the method.

Notable research into TQM in the context of universities, particularly defining "stakeholder" needs, has been carried out by the Centre for Higher Education Studies of the University of London Institute of Education on 'Identifying and developing a quality ethos for teaching in higher education' (Centre for Higher Education Studies (CHES),1991), and by the Centre for Research into Quality, University of Central England in Birmingham, which has extensively researched the topic. The first project from this research group was completed in October 1992 on 'Criteria of quality' (Harvey, Burrows and Green, 1992).

1.4 Research scope and thesis structure

The research presented in this thesis starts from the proposition that unless a consistent and commonly agreed understanding can be reached, the judgement of quality and the application of measures of performance will remain controversial and will possibly be damaging to the university system. This thesis will provide a review of the respective positions of those who have already contributed to the debate and will then consider, on the basis of original fieldwork, whether one particular approach that has been successful in helping to address issues of quality in other sectors could be beneficial in resolving the problems in higher education. This approach is the one developed by Juran, Deming and others (sometimes, but controversially, labelled 'Total Quality Management' (TQM)).

The broad question is:

whether the adoption of TQM, which has a process-oriented rather than output-oriented approach, can produce tangible benefits to higher education by:

- enabling a university to improve its performance within the existing system
- ensuring all universities could be recognised as high-quality institutions
- providing a more effective quality assessment system.

Chapters 2 to 4 provide a review of the key facts and opinions, as expressed in the literature, of:

a) the view of 'quality' in higher education from the perspective of government, the universities and other key stakeholders,
b) TQM vocabulary, ongoing practice and culture
c) Applying TQM to the service sector, and to education.

Chapter 5 defines the research hypothesis and describes the method used to test it. Chapters 6, 7 and 8 present the results of the fieldwork undertaken to test the research hypothesis, providing data on "the Voices" of the students, the departmental staff and other stakeholders. Chapter 9 provides an analysis and interpretation of the data and the concluding remarks.

Chapter 2

Quality in English Higher Education: stakeholder perspectives

> *"There is less a debate about quality, therefore, than a babel of voices, their different messages reflecting alternative points and conceptions of higher education itself". (Barnett, 1992, p. 5).*

This chapter reviews the most significant events of the past ten years concerning "quality" in the English university system. It provides an account of the facts, the relevant opinions and the associated actions of each of the major contributing parties, as they are recorded in the literature.

The chapter is divided into three parts. Part 1 gives the government's perspective of quality in universities; what they have done about it and why. Part 2 gives the universities' response and the apparent motivation for their actions. Part 3 gives the position of the other major stakeholders - the employers and the regulatory and professional bodies.

2.1 PART 1: GOVERNMENT PERSPECTIVE

2.1.1 Summary of the key issues and problems

From government's perspective, the key higher education issues related to quality in higher education over the past ten years have been:

- encouraging the universities to meet more directly the needs of the economy by providing a highly-educated workforce with the qualities required by employers in industry and commerce
- expanding the higher education system in terms of student numbers at the same time as containing, if not reducing, the amount of public money allocated to it
- widening access to higher education to all those who have the potential to benefit from it, rather than restricting it to those with the traditional university entry qualifications
- ensuring that academic quality and standards are not diminished because expansion is not matched with a proportional increase in *per capita* student funding
- determining how to manage a sector which does not operate in truly competitive market conditions (the government, for example, regulates undergraduate tuition fees), and where the unrestricted

operation of market forces might lead to a shortage of graduates in areas that the government believes to be essential to the economy.

Significant problems arise from:

- assessing the quality and performance of organisations which do not operate for profit or have any other tangible output, and where there is no agreement on what 'quality' is, in order to:
  - ensure accountability, i.e. demonstrate that the contribution to higher education from public funds is being used effectively (that requirements are being met), and efficiently (through the best use of resources)
  - compare institutional performance
  - invest in the universities judged to have the highest quality and offering the best value for money
  - identify those which are low quality and take action
  - know if quality in the sector is improving or deteriorating.

These issues and problems and the way that the government is approaching them are documented in a number of policy, legislative and other documents that may be considered key when tracing the government's input to the quality debate. The key documents include:

- *'Higher Education: Meeting the Challenge'* (The 1987 White Paper). (Department of Education and Science (DES), 1987)

- *The Education Reform Act, 1988*
  (Education Reform Act, 1988)

- 'Higher Education: A new framework' (The 1991 White Paper)
  (Department of Education and Science (DES),1991a)

- *The 1992 Further and Higher Education Act.*
  (Further and Higher Education Act 1992, 1992)

- *The 'Dearing Report'*
  (Dearing, 1997).

To achieve a better understanding of the government's position and the reasons why it has chosen to approach the problems in the ways described in this chapter, it is helpful to understand the historical relationship between the universities and the government.

2.1.2 The history of the relationship between the government and the universities

Until the 1970s an 'arm's length' relationship had existed between government and the universities; the Universities Grants Committee (UGC), was created in 1919 and was seen as an effective buffer between the universities and the politicians. Until 1972 the UGC, on behalf of government, allocated quinquennial grants to the universities which were then given freedom to work within the sums awarded. After 1972 this became an annual grant with adjustments made by the government for inflation.

From 1964 the UGC reported to the newly-formed Department of Education and Science which took responsibility for government policy in higher education, although intervention was initially minimal, primarily, according to Becher, because:

> neither the politicians nor their senior civil servants could come up with a strategy that carried the conviction necessary to challenge the entrenched independence of the higher education community. (Becher, 1987, p.12).

Becher also describes the significance of academic freedom and independence to the universities:

> The idea that governments should interfere as little as possible in the universities was derived as much, one suspects, from the way in which the universities were founded, and the relatively late involvement of the Exchequer in their funding, as from any ideological commitment to the highly prized academic freedom that has been one of the beneficiaries of this benign neglect. Academic freedom, however has become one of the cornerstones of higher education, and its defence against subtle undermining will continue to figure in the politics of education.
>
> An extension of this notion of academic freedom has been the idea that universities serve the body politic as repositories of independent criticism and non-partisan wisdom. This has appealed to the universities (for it flatters their aspirations and licenses their political judgements) and to governments (who have found it useful to use academic experts to diffuse highly charged issues). But the more polarized politics becomes and the more extensive the intervention of government, the less

> welcome is the idea of licensed criticism from any source. (Becher, 1987, p.11).

The 'arm's length formula', however, could only continue while there was mutual trust between the universities and government. This trust suffered a crisis in 1981 when university funds were severely reduced. The necessary cuts in the funding allocations to the individual universities were not divided evenly or proportionately by the UGC which favoured the more established universities at the expense of those which had more recently achieved university status (the former Colleges of Advanced Technology such as Aston and Salford Universities).

The UGC's actions in 1981, however, may have been regarded by government as a step too far as the universities which had been penalised were, by and large, those which had been perceived as being more in line with government policy, for example by trying to develop links with industry. They also educated a significant number of the engineers that government considered to be vital to the economy.

In 1981 the universities had been a natural target for funding reductions as the DES could easily control the amount it allocated to the UGC. This contrasted with the polytechnic sector which, although in receipt of national funding through the National Advisory Body, was owned and administered by the local authorities. (Becher, 1987; Leverhulme studies of Higher Education, 1983).

During the 1980s government strategy was directed at achieving greater influence on the affairs of the universities in order to align them more closely with government policy and to steward public funds at a time of acute financial constraint. The 1987 White Paper, which set out government policy in very direct terms, was a major landmark in this change. Its view of the purpose of higher education was clearly focused on the needs of the economy; a view which remained constant in other government documents.

2.1.3 Aims and purposes of higher education as expressed by government

Until the publication of the 1987 White Paper, (Department of Education and Science (DES), 1987), no statement of the aims and purposes of higher education had appeared in a government document since 1963 when the

Robbins Report (Robbins, 1963) listed them as being "instruction in skills, the promotion of the general powers of the mind, the advancement of learning, and the transmission of a common culture and common standards of citizenship".

The 1987 White Paper stated its intention to adhere to the Robbins Committee's definition, but the role of higher education in supporting the economy and the need for strong links between the universities and industry and commerce were strongly emphasised:

> Meeting the needs of the economy is not the sole purpose of higher education; nor can higher education alone achieve what is needed. But this aim, with its implications for the scale and quality of higher education, must be vigorously pursued. The achievement of greater commercial and industrial relevance in higher education activity depends much on close communication between academic staff and people in business at all levels. (Department of Education and Science (DES), 1987, p.2).

This theme is further endorsed by the summary signed by the, then, Secretary of State for Education and Science (Kenneth Baker), and individually by the Secretaries of State for Wales, Scotland, and Northern Ireland. They wrote:

> Higher education should:
>
> - serve the economy more effectively
> - pursue basic scientific research and scholarship in the arts and humanities
> - have closer links with industry and commerce, and promote enterprise (ibid, p.V).

Almost ten years later, in May 1996, the Dearing Commission was appointed by the Secretaries of State for Education and Employment, Wales, Scotland and Northern Ireland to:

> make recommendations on how the purposes, shape, structure, size and funding of higher education, including support for students, should develop to meet the needs of the United Kingdom over the next 20 years, recognising that this embraces teaching, learning, scholarship and research. (Dearing, 1997, p.3).

Dearing's emphasis was that education and learning must continue throughout life and career and that universities must play their part in preparing their students for this. The report further states:

> We believe that the aim of higher education should be to sustain a learning society. The four main purposes which make up this aim are:
>
> - to inspire and enable individuals to develop their capabilities to the highest potential levels throughout life, so that they can grow intellectually, are well equipped for work, can contribute effectively to society and achieve personal fulfilment;
> - to increase knowledge and understanding for their own sake and to foster their application to the benefit of the economy and society;
> - to serve the needs of an adaptable, sustainable, knowledge-based economy at local, regional and national levels;
> - to play a major role in shaping a democratic, civilised, inclusive society. (ibid, p.13).

2.1.4 Access, the needs of the economy and national human resource planning

The 1987 White Paper gave an early indication of the government's intention to increase student numbers to meet an economic need. It describes how the Secretaries of State would plan an increase in student numbers to take account of the country's needs for highly qualified manpower. To this end they would study the needs of the economy in order to achieve the right number and balance of graduates in the 1990s.

Historically, the universities had tolerated the exertion of some government influence on the programmes they ran and the numbers of students they enrolled in the cases where the national interest was evident, for example, in the areas of scientific research and the supply of teachers and medical staff . All other attempts to align the universities' plans with human resource planning for the nation, however, had been strongly resisted. The statements in the 1987 White Paper could again be seen as a sign of greater intervention in the future.

Consistent with its view of the role of the universities in serving the needs of the economy, government, as shown in the 1987 White Paper, was also steering the universities towards opening their doors to more people from a wider range of educational and social backgrounds. The commitment to the

Robbins principle (Robbins, 1963) was reconfirmed in the White Paper, i.e., that university places should be available to all "who have the necessary intellectual competence, motivation and maturity to benefit from higher education and who wish to do so" (p.7). It further acknowledges that:

> The changes required [by widening access to universities] should not be underestimated; it will be necessary both to adjust the balance of provision to match the needs of the economy and to accommodate students with a wider range of academic and practical experience than before, many of whom will not have the traditional qualifications for entry. (Department of Education and Science (DES), 1987, p.9).

Students should be provided with a broad education, including not just subject-specific skills, but also those they will need as future employees:

> ... higher education must also build on the broad education increasingly provided by schools, ensuring, for instance, further development of skills in communication and numeracy and the fostering of positive attitudes to enterprise and work generally. (Ibid, p.18).

There was recognition that this would require the universities to change their teaching methods to accommodate the different needs of the new type of undergraduate. The government's expectations nevertheless were that standards must be maintained and improved:

> Not only will entry requirements and procedures have to be changed; institutions of higher education will have to adapt their teaching methods and the design of their courses to accommodate new types of student. The Government attaches no less importance than previously to its policy of maintaining and raising standards. It believes that increased participation in higher education need not be at the expense of academic excellence; indeed the stimulus of change should help to sharpen awareness of the different types of achievement that properly form part of the output of higher education. (Ibid, p.9).

Expansion and change continued to be encouraged by government. The 1991 White Paper: Higher Education: A new framework, (Department of Education and Science (DES), 1991a), set a target of 1 in 3 18-19 year olds entering higher education in the year 2000 (compared with 1 in 7 in 1987). This target was almost reached as early as 1994 (Committee of Vice-Chancellors and Principals (CVCP), 1994a).

The pressure to expand and improve higher education in the United Kingdom in the interests of retaining global competitiveness was reinforced by government departments other than the Department for Education. For example, the 1993 White Paper 'Competitiveness helping business to win', submitted to Parliament by the President of the Board of Trade, the Chancellor of the Exchequer, the Secretaries of State for Transport, Environment and Employment, and with an introduction by the, then Prime Minister, John Major, states:

> For too long the UK's level of participation and achievement have dragged us down the international education and training league...The government is working to lever up the expectations of students and providers alike; to strengthen standards of teaching, learning and assessment; to promote more effective training by employers, and to foster a culture of lifetime learning and flexibility. Across the globe other countries are setting ever higher standards for the educational and training attainment of their workforce, and benefiting from the boost to competitiveness that this provides. While we are second to none in securing results from those in our society who choose the most academic options, we need to raise further the attainment of those, whatever their age, who choose vocational education and training. (Competitiveness: helping business to win, 1993, p.30).

The changes were of such a scale, however, that the government took significant action in order to help bring them about. This included restructuring the system, including its funding mechanisms.

2.1.5 Restructuring

The system of polytechnics and universities

The Education Reform Act of 1988 brought about the incorporation of the English polytechnics as independent higher education corporations, as proposed in the 1987 White Paper, thus taking them out of local authority control.

The 1992 Further and Higher Education Act removed the so-called 'binary line' between the polytechnics and the universities, putting them into a single structure and giving them equal legal status and the right to use the title 'university'. Degree awarding powers were also extended to major institutions. The Council for National Academic Awards, which had previously validated degrees within the polytechnic sector, was abolished.

The 1991 White Paper, leading to the 1992 Act, had stated:

> The distinction between universities on the one hand and polytechnics and colleges on the other, known as the binary line, has become an obstacle to further progress [towards achieving increasing participation in higher education]. The government therefore proposes to abolish it and establish a single framework for higher education. (Department of Education and Science (DES), 1991a, p.14).

The funding bodies

At the time of their incorporation in 1988, the polytechnics were put under contract to a new Polytechnics and Funding Council (PCFC). Together these actions, according to the plan set out in the 1987 White Paper, would encourage improvements in management and allow greater responsiveness to economic needs.

In parallel with this, the UGC was to be reconstituted as the Universities Funding Council (UFC). The UFC would be responsible for the distribution of funds among universities in Great Britain under new contract arrangements. The membership of UFC would include strong representation from outside the academic world. The government, according to the 1991 White Paper, would provide "planning guidelines for the university system as a whole" (Department of Education and Science (DES), 1991a, p.v).

The 1992 Further and Higher Education Act, which had brought the polytechnics and universities together within the higher education structure also provided a new single funding structure to include universities, polytechnics and colleges of higher education. Higher Education Funding Councils within England Scotland and Wales would distribute public funds for both teaching and research; and there would be new links to continue the present relationship with Northern Ireland's existing unitary structure.

2.1.6 Funding

On the topic of funding, the 1987 White Paper had been clear in its statement that "higher education is expensive" (p.14). In 1986-87 it accounted for 2.6% of public expenditure. Warning was given that there

would be further tightening of finances and also an expectation of improved standards:

> The government welcomes the efforts and positive achievements on the part of many institutions in seeking better value for the very large sums of public money made available for higher education. It recognises that hard and sometimes painful decisions are involved but is committed to achieving the further gains in value for money that will be needed, particularly if access to higher education is to be widened in future. This means pursuing both quality and efficiency. (Department of Education and Science (DES), 1987, p.15).

The themes were continued and in 1991 the Secretary of State for Education and Science said "the central issue for the universities in the 1990s will be how to maintain quality while expanding rapidly and economically" (Department of Education and Science (DES), 1991b).

"Expansion" during the decade was defined in the government's projections for an increase of 300,000 students by the year 2000 (Department of Education and Science (DES), 1986). "Economically" was set in the context of a new funding methodology and predictions for annual reductions in unit costs in the order of 1-2%. (Committee of Vice-Chancellors and Principals (CVCP), 1992).

The imperative to reduce *per capita* student funding during the late 1980s and the 1990s was heightened by a period of economic recession and government economic policy that required the containment of public expenditure.

The Funding Councils reacted to the universities' early success with recruiting larger numbers of students, and the financial implications of this, by the introduction throughout the period 1994-1997 of mechanisms designed to slow down expansion in the areas where the government paid student tuition fees.

These mechanisms included:

- The introduction of Maximum Aggregate Student Numbers (MASNs) which enabled Funding Council control of the recruitment of funded student numbers (Higher Education Funding Council (England) (HEFCE), 1994).

- A 45% reduction in tuition fees in 1994/95 to deter the recruitment of "fees only" students (Higher Education Funding Council (England) (HEFCE), 1994).
- Reductions in per capita student funding to encourage "efficiency" gains (a unit cost reduction of more than 40% over the last 20 years). (Dearing, 1997).
- The calculation of the national Average Unit of Council Funding (AUCF) for different subject categories. Universities spending more than the average have "efficiency" gains imposed. The main effect is to drive down costs and reduce variation in the funding levels of different universities. (Higher Education Funding Council (England) (HEFCE), 1995a).

Student tuition fees

The commissioning of the Dearing Report (Dearing, 1997) was preceded by a threat in 1996 by the university Vice-Chancellors to impose a top-up fee to make good the financial cuts which had been imposed by the Funding Councils and which the Vice-Chancellors considered to be threatening academic standards and quality. (*Times Higher Education Supplement* (THES), 1997b).

The Report expressed particular concern about planned further reductions in the unit of funding for higher education because this would damage both the quality and effectiveness of higher education. It recommended that new sources of finance would have to be found to provide for growth. To this end, it recommended that students should make a flat rate contribution towards tuition fees of the order of 25% of average tuition costs each year, not varied by subject of study. Dearing's recommendation allowed for income-contingent terms for the payment of any contribution towards living costs or tuition fees once a graduate was in employment.

The government rapidly accepted Dearing's principle of payment of tuition fees but not necessarily the proposed method of implementation. It is currently holding a period of consultation before drafting legislation. It is not yet known whether, in accordance with Dearing's recommendations, the fees collected will be used directly to provide additional funding for the universities.

The Report and its aftermath did not deflect attention from, or (as yet), do anything to resolve the issues of funding, access and quality. Higher education minister, Baroness Blackstone, told the 1997 annual conference of Vice-Chancellors and Principals that the control of funded student numbers would not be lifted and that "our immediate priorities will be to improve quality for all currently in higher education and to widen access for people who, more than ever, need the chance to benefit from a university education". (*Guardian*, 1997, p.i).

2.1.7 Quality and standards

The 1987 White Paper did not explicitly define the terms 'quality' and 'standards' but some guidance is provided. "Quality", the report said, can be judged by looking at:

- academic standards as reflected in the design and content of courses, their fitness for purpose, what they require of students and how they meet the needs of employers;
- the quality of teaching;
- the achievements of students - both whilst in higher education and in subsequent employment; and
- the quality of research - pre-commitment scrutiny and subsequent evaluation of achievement. (Department of Science and Education (DES), 1987, p.16).

The judgement of academic standards and the quality of teaching in higher education should be judged by reference to students' achievements. Certain performance indicators would assist this, together with the reports of external examiners:

> Academic standards and the quality of teaching in higher education need to be judged by reference mainly to students' achievements. The number and class distribution of degrees awarded provide some measures as, conversely, do non-completion rates. External examiners' reports offer a vital commentary, and effective scrutiny of these by institutions is essential. (Ibid, p.18).

Quality in higher education, the 1987 White Paper said, is the responsibility of the universities but the government would act as overseer:

> Quality in higher education depends primarily upon the commitment of the academic community to the maintenance and improvement of standards. This cannot be created or imposed from outside, but the Government on behalf of the public can and will seek to ensure that systems are in place to promote and give effect to that commitment and to monitor the results. (Ibid, p.16).

The 1987 White Paper therefore allowed the continuation of a system in which universities were subject to little external quality regulation. Checks, balances and scrutiny were based on peer review through a system of external examiners. It was on the latter that the consistency of the standard of the British degree rested. The polytechnics were subject to external quality regulation through the CNAA and HMI. In 1991, the CVCP established an Academic Audit Unit (AAU) to visit institutions and report on their systems of quality control, reputedly to counter the threat of Her Majesty's Inspectorate to extend its control to the universities (Young, 1990). This action was generally thought to be too little too late (Fry, 1995).

The system of quality assessment was significantly changed by the 1992 Further and Higher Education Act which placed a statutory requirement on each Funding Council to establish teaching Quality Assessment exercises which would "inform" funding and be in addition to the existing arrangements for assessing the quality of university research. Each Council should determine for itself the assessment method to be adopted, in consultation with the institutions affected.

The AAU was placed under the auspices of a newly-formed Higher Education Quality Council (HEQC), with responsibility for Quality Audit, supported by the CVCP, the Standing Committee of Principals (SCOP) and the Conference of Scottish Centrally-Funded Colleges (CSCFC). In 1997 the newly-formed Quality Assurance Agency took responsibility both for higher education audit and assessment of educational provision. (Joint Planning Group for Quality Assurance in Higher Education, 1996).

2.1.7.1 Research Assessment

Research Assessment Exercises (RAEs), known as research selectivity exercises until 1992, were conducted in 1986, 1989, 1992 and 1996. Ratings from RAEs and their predecessor exercises have been used to inform selective funding of research according to 'quality'.

The common approach and procedure for each of the exercises has been:

- Peer review involving the exercise of academic judgement. Peer review has been defined as "any method of judgement of (a portion of) someone's work by one or more individuals who are supposed to be knowledgeable about this field of work, usually from working in the same field, and that relies solely or predominantly on the judge's (or judges') statements" (Westerheijden, 1991).
- Universal coverage - a broad definition of research. For the purpose of RAE, research is "to be understood as original investigation undertaken in order to gain knowledge and understanding". (Higher Education Funding Council (England) (HEFCE), 1997b. Annex A).
- A common basic approach with the assessment panels all working within the same general framework and a standard written presentation.
- Differentiation by subject within the common approach. (Higher Education Funding Council (England) (HEFCE), 1997a).

Experience of the process over the years as well as national policy developments have led to some changes in the RAE. The context for the 1992 RAE was particularly turbulent. Before 1992, all institutions funded by the UFC were funded for research and had reasonably similar amounts of teaching and research activity and similar disciplinary priorities. The 1992 Act which removed the binary line changed this situation as the former polytechnics, most of which had received very little public funding for research, were now eligible to enter the RAE and compete for university research funding. The four funding bodies, however, had no additional sums to distribute.

The key new features of the 1992 RAE were:

- Higher education Institutions (HEIs) themselves chose which members to submit to the exercise (termed "research active" staff). Those staff submitted were 'credited' to the institution where they were employed on the census date for the exercise, for both assessment and subsequent funding. The rating, based on the individual's performance over the previous four years, then determined the institution's funding for research for the following four years.
- Assessment focused on up to four outputs (two publications and up to two other forms of output) from each member of research active staff.

A publication count, along with other quantitative material, was also provided for each unit submitted.

- Universities were allowed, if they wished, to make separate submissions for applied and basic research.
- The aim of the exercise was to judge quality of research against national and international standards, using a five-point scale.
- The number of subject areas or Units of Assessment (UOAs) was roughly halved (to 72) between 1989 and 1992. This change was intended to help the assessment panels (which roughly mapped on to UOAs), so that they would each have enough submissions to make comparisons, and so be able to give robust ratings. It also meant that institutions could return research groups in larger aggregations, for example for interdisciplinary research.
- The Funding Councils used the 1992 RAE ratings and volume measures to calculate allocations to institutions from 1993-94 onwards. There were a number of volume measures, but much the greatest weight was given to the number of research active staff. As a result, HEIs had to choose between submitting many staff, with the risk that including some of the "lower quality" ones might bring down their RAE rating, or submitting only those of the "highest quality", and risk receiving less money because of lower volume. Although the UGC and the UFC had increasingly targeted funds to higher quality units, this had not previously been so closely based on the performance of identified individuals.

Following the 1992 RAE, the Funding Councils protected the universities from the true financial effects by the introduction of temporary measures to cap the benefits of the 'winners' and provide financial 'safety nets' for the 'losers'.

Some procedures were changed for the 1996 RAE as a result of consultation on the experience of 1992 (Higher Education Funding Council (England) (HEFCE),1997b). These included:

- The simple count of publications from the supporting quantitative material was dropped. This was done because it was perceived to be encouraging proliferation of publications of declining quality.

- Basic and applied research were now assessed together, with an instruction from the Funding Councils to treat them equally (few institutions had taken up the option of a separate submission for applied research in 1992).
- A number of techniques were used to improve the treatment of interdisciplinary research, such as cross-referral to other panels.
- The allocation processes for teaching and research funding were made more transparent by the Funding Councils
- More feedback was given to institutions than was previously the case. In particular, the Funding Councils have published assessment panels' criteria for assessment.

The purpose of the 1996 RAE was:

> to produce ratings of research quality for use by the funding bodies in allocating money for research in HEIs which they fund. (Higher Education Funding Council (England) (HEFCE). 1997b, p.1).

"Quality" remains undefined. A revised set of research ratings (1-5 and the new, and highest of all, 5*) are awarded to departments following assessment.

HEFCE's commentary on the exercise reports:

> Feedback received during and since the exercise, from panel members, HEIs and others, has in almost all cases been positive in regard to the broad framework and general approach to assessment. It is generally accepted that research assessment in some form is now an established feature of academic life, though opinions vary both as to how far its introduction has affected the way in which research is conducted and organised and whether and how far these effects are to be welcomed. Reaction to the conduct of the 1996 exercise has indicated broad acceptance that, given the willing co-operation of the sector, it is possible to conduct research assessment on the national scale by peer review of tightly specified written submissions carried out by panels made up of only 1% of the total body of active researchers. (Higher Education Funding Council (England) (HEFCE), 1997b, p.3).

2.1.7.2 Assessment of the Quality of Educational Provision

In 1992, to comply with the legislation, pilot assessments of educational provision were conducted by the Funding Councils. The main features of the methodology were a departmental self-assessment that included some

statistical indicators, a three point grading scale of judgement, limited visiting of departments, and reporting in public and private documents.

The pilots were followed by the publication of a consultative paper (Higher Education Funding Council (England) (HEFCE),1992) and the Assessment exercise was formally reviewed and evaluated through work commissioned by the Funding Councils for England and Wales (Centre for Higher Education Studies (CHES),1994). Radical change was not recommended and some crucial questions were not addressed, for example, how to achieve an assessment system that ensures objectivity and replicable results, and which uses the smallest resource consistent with achieving the purpose.

In February 1993 the HEFCE published Circular 3/93 (Higher Education Funding Council (England) (HEFCE), 1993) which describes the current approach to the assessment of the "quality" of the educational experience (at undergraduate and taught master's level) provided by higher and further education institutions.

Changes in the method adopted included:

- a graded scale of assessment under which departments receive a rating on a one to four scale on each of six "core aspects of provision":
  - Curriculum design, content and organisation
  - Teaching, learning and assessment
  - Student progression and achievement
  - Student support and guidance
  - Learning resources
  - Quality assurance and enhancement
- A rating of one in any category results in another visit in one year's time. If the rating does not improve, the Funding Council reduces or withdraws funding.
- Visits to all departments/subject areas as part of the assessment exercise.

The purposes of assessment are also given in Circular 3/93. These are:

- to ensure that all HEFCE-funded education is of satisfactory quality or better

- to ensure speedy correction of unsatisfactory quality
- to encourage improvements in the quality of education through the publication of assessment reports and an annual report
- to inform funding and reward excellence.

The assessment exercise is controversial and there are calls from the universities for it to be abolished (*Times Higher Education Supplement* (THES), 1997c).

2.1.7.3 Quality Audit

Audit acknowledges "fitness for purpose" as the chosen approach to quality. Universities are judged against their own stated aims and objectives, not against any 'gold standard'. (Committee of Vice-Chancellors and Principals (CVCP), 1991).

The audit process has three parts:

- the provision of briefing documentation by the institution describing and illustrating the structures and processes used to assure the quality and standards of the educational arrangements
- a visit by a small group of auditors
- a subsequent report published by the QAA from 1997 onwards, (earlier reports were published by HEQC). (Higher Education Quality Council (HEQC), 1994a).

Key differences between Audit and Assessment are:

- Audit is conducted at university-wide level, whereas Assessment is carried out on an academic subject basis.
- Audit is concerned to ensure that the mechanisms are in place which, if working correctly, can deliver quality. It is not concerned with measuring output. In Quality Management terms, it is a quality assurance exercise. The auditors (peer groups), through visiting and through documentation submitted to them by the universities, seek answers to the following questions:

    - What are you trying to do?

- How are you doing it?
- Why are you trying to do it?
- Why are you doing it that way?
- How do you know that it works?

(Higher Education Quality Council (HEQC), 1994c)

2.1.7.4 The QAA and the proposal to integrate quality audit and assessment arrangements

On its establishment in 1997, the QAA took over the responsibility for academic audit from HEQC. The QAA's planning document was open in its acknowledgement that universities were critical of the perceived burden of having to prepare for separate audit and assessment exercises; "Within the universities and colleges there is a widespread feeling that these arrangements lead to overlap and duplication, thus creating unnecessary work" (Joint Planning Group for Quality Assurance in Higher Education, 1996, p.4). The QAA's plan is "to operate an integrated process of quality assurance covering the totality of each institution's provision, wherever and however delivered, and however funded, which will secure significant benefits for institutions" (ibid, p.2). This would be reinforced by collaboration with professional and statutory bodies to eliminate another layer of accreditation visits. Institutions would be expected to draw up a quality assurance plan, setting out provision to be reviewed over an eight-year cycle, including any review by professional bodies.

The planning document further states the purposes of quality assurance, and its role in ensuring accountability and the public availability of information about higher education:

> ...we have given careful consideration to the purposes of quality assurance in higher education. We believe that the prime responsibility of an external agency should be to support higher education institutions in discharging their responsibility for the maintenance and enhancement of the quality and standards of their educational provision. Students, both within and beyond the UK, need to know about the quality and standards of educational provision in an increasingly diverse higher education sector. So do employers, who recruit the graduates of higher education institutions, the taxpayer and Parliament, which has placed on the funding bodies a statutory responsibility to ensure proper accountability for the use of public funds.
>
> Against this background, we believe that the purposes of quality assurance in higher education can be summarised as follows:

- to facilitate continuous improvement through the sharing of good practice and innovation;
- to enable the funding bodies and institutions to discharge their statutory responsibilities;
- to provide timely and accessible public information, on a consistent and, where possible, comparable basis, on the quality and standards of the educational provision for which each institution is responsible;
- to ensure that any unacceptable provision is speedily addressed. (Joint Planning Group for Quality Assurance in Higher Education, 1996, p.4).

2.1.7.5 Commentary on quality audit and assessment in the Dearing Report

The Dearing Report (Dearing, 1997) agrees the necessity for transparency (in the context of tuition fees, the report states that in return for additional contributions from graduates, institutions must make much clearer what they are offering to students). The report does not, however, endorse audit and assessment in their current form as the means to achieve transparency, and, instead, proposes a framework of common standards:

> The teaching quality assessments (TQA) introduced by the Funding Bodies have raised the profile of teaching within institutions and have served a useful purpose. But, given that the vast majority of outcomes have been satisfactory, we are not convinced that it would be the best use of scarce resources to continue the system in the long term. Moreover, we believe that it is exceedingly difficult for the TQA process to review the quality of learning and teaching itself, rather than the proxies for learning and teaching, such as the available resources or lecture presentation. The utility of such a system is also likely to wane as institutions 'learn' how to achieve high ratings. While, therefore, we see value in completing the current round of assessments, for the longer term we see the way forward lying in the development of common standards, specified and verified through a strengthened external examiner system, supported by a lighter approach to quality assessment. For this to happen, it would be a pre-condition that:
>
> - institutions are explicit about the content of, and terminal standards required for, the awards they offer, with students and employers having accurate and clear information about programmes.
>
> Institutions are prepared to adopt national codes of practice (analogous to those prepared by HEQC and other organisations) to support quality provision with guidance for students, overseas students and others. (Dearing, 1997, p.157).

Dearing believed this proposal would satisfy the need to make it clear to all stakeholders what they can expect from higher education, and restore a

"qualified trust" between higher education institutions, students and the public funders of higher education.

Dearing saw the responsibilities of QAA as including:

- quality assurance and public information
- standards verification
- the maintenance of the qualification framework.

2.1.8 Competition, customer choice and consumerism

Part of the government's strategy for ensuring change in the university system has been to inject a sense of competition between the universities. The view was expressed in the 1991 White Paper that:

> the real key to achieving cost-effective expansion lies in greater competition for funds and students. That can best be achieved by breaking down the increasingly artificial and unhelpful barriers between the universities, and the polytechnics and colleges. (Department of Education and Science (DES), 1991a, p.12).

Consumerism and the need to provide and facilitate customer choice are also significant related themes in the 1991 White Paper. The need for publicly available information about higher education provision is referred to, as is the need to provide what consumers, or stakeholders, say they need:

> As now, [government] will look to students, employers and the wider community to signal their needs and expectations and to the Funding Councils and institutions to respond by developing the quality and efficiency of the higher education they provide. (Ibid, p.4).

2.1.8.1 The universities and diversity of mission

Government wanted the diversity of missions between the institutions to be retained. This was to counteract the risk that the removal of the binary line would lead to a demand from the former polytechnics for research money on the same basis as the old universities. The government therefore ensured that funds for teaching and research were separately identified and administered through the newly-established single funding structure for the sector.

Williams (1990), discusses the effects of funding systems which promote competition for funds and students in the context of the move from an "elite" to a "mass" system of higher education. He describes how until the 1980s, a uniform price was, in effect, set by a single monopolistic buyer; competition between universities for students was largely based on academic reputation and facilities. Professional self-regulation worked satisfactorily in a relatively small and homogeneous system but mass higher education is heterogeneous and attracts a broad spectrum of students with many different aims. The universities may become increasingly diverse in terms of the programmes and services they offer and must compete for the students they want.

The competition may also come not only from other traditional universities but also from distance learning and other programmes. The government, for example, is setting up a University of Industry with 'a national multiple media learning network' at its centre (Department for Education and Employment (DFEE), 1997), and British Aerospace is contemplating setting up its own university (Barnett, 1997). All providers, however, if they are to attract students must accept responsibility for ensuring that the educational experience is "fit for purpose" and that stakeholders know what is being offered. The assurance of quality and standards is more important in a large and diverse system and, according to Williams (Williams, 1990), it may also be more difficult to achieve.

2.1.8.2 Consumer charters

Charters for the customers of public services were introduced to provide more public information and to facilitate customer choice. In 1993, the then Department for Education (now the Department for Education and Employment) published a 'Charter for Higher Education' which "explains the standards of service that students, employers and the general public can expect from universities and colleges and other bodies involved in higher education in England" (Department for Education (DFE), 1993, p.2). Each university and college was expected, but not mandated, to publish its own Charter specifying its total service including, for example, accommodation and facilities for the disabled.

2.1.8.3 Customer satisfaction

Concepts of 'customers' and achieving customer satisfaction through meeting customer needs have permeated the public sector and the newly privatised industries which had little experience of operating in a competitive environment. This has been encouraged by government pressures and initiatives such as Charters. However, the term 'customer' in its popular usage denotes a direct trading arrangement based on supply and demand and the exchange of money. This does not always fit comfortably into every service environment, especially where the services have had strong paternalistic overtones. Williams writes:

> Few academics like referring to their students as customers. Part of this is undoubtedly linguistic snobbishness, but it also permeates the heart of the debate about the functions of a mass higher education system and the role of students and teachers within it. (Williams, 1993, p.235).

It is also speculated (*Times Higher Education Supplement* (THES), 1997d) that the introduction of tuition fees will foster a consumer culture amongst students. Students who must repay the cost of their education will expect a more responsive system.

2.1.8.4 League Tables

Although the government has not published comparative results of institutional assessment, it has established a principle of 'ranking and grading' through the quality assessment systems. The publication in The *Times* of independently compiled League Tables (University League Tables, 1992 and 1994) supports government's belief that the public wants information on the comparative performance of universities and reinforces notions of a quasi-market and competition.

2.2 PART 2: UNIVERSITY RESPONSES

2.2.1 Concern over definitions of purpose

Tensions in the academic community arise between purposes which are focused on the needs of the economy, (which is increasingly the government's position), and the more traditional role of the university in

transmitting culture and fostering learning for its own sake. Barnett provides the view that:

> the debate over quality in higher education should be seen for what it is: a power struggle where the use of terms reflects a jockeying for position in the attempt to impose own definitions of higher education. (Barnett, 1992, p.6).

Salter and Tapper, quoted in Barton (1995) write that the State, in its endeavour to bring higher education under its tighter control, has used an "economic ideology of education". This ideology views education as an economic resource that needs to be governed in a way that will maximise its contribution to the economy. This, according to Salter and Tapper, is based on a new vision that challenges the dominance of "the liberal ideal". They argue:

> Once it is assumed that education's primary goal is to serve the economy, all else is then subordinated to that goal. As an educational principle, the disinterested pursuit of knowledge is de-valued. Knowledge no longer has an absolute status but its worth is contingent upon the yardstick of social relevance, so that applied knowledge is highly valued and pure knowledge regarded with suspicion. (Salter and Tapper, 1994, quoted in Barton, 1995, p.6).

As any attempt to determine the quality of product or service is dependent on an explicit statement of purpose, agreement on what is 'quality' in higher education has therefore remained problematic.

2.2.2 Academic freedom vs. "hard managerialism"

The universities' wish to keep government intervention to the minimum largely arises from the concept of academic freedom and from the rejection of what is seen as the imposition of an industrial model of management which is not only inappropriate, but which is less efficient than the one operating in the universities. (Laurillard, 1993; Barton, 1995).

Barnett (1994) maintains that government ideology (the 'New Right' as described in Quicke, 1988 and Jordan, 1989), which promotes a belief in the distributive justice of the market, the centrality of choice and competition, and a diversified system of provision, is resulting in terms such as 'insight' and 'understanding' being devalued and increasingly superseded by those of 'skill' and 'competence'. He writes:

> The new vocabulary of 'competence', 'learning outcomes', 'credit accumulation', 'learning profiles' and references to students as 'products': all these are not just symptomatic of internal changes to the higher education curriculum but also indicative of a re-shaping of knowing in response to the contemporary demands. (Barnett, 1994, p.43).

In Trow's view, (Trow, 1994), the universities are seen by government as operating as an academic guild which seeks to preserve an expensive and inefficient "old order". He writes that because of lack of trust, the government is seeking to control the universities through "hard managerialism". By this he means hierarchical control and the use of quality judgements as a substitute for the profit and loss sheet of commercial business. He sets this against the academic norms and decision-making processes of universities. Academics, he argues, work through intrinsic, not extrinsic rewards. Their satisfaction, he says, comes from internal motivating factors associated with their profession. His view suggests that academic staff will not respond well to the 'carrot and stick' methods being put in place, nor will they work better because of threats of competition.

Clark (Clark, 1994), responding to Trow, as the then Director of Quality Assessment for HEFCE, refuted his "control" theory. He was also sceptical of what he called Trow's "golden age" view of the grander traditional universities. Clark believed that teaching and teachers are not, as suggested by Trow, uniformly excellent, and implied that they never were. In his view, the system that Trow admiringly describes is the highly-resourced elite system of the pre-1980s and is therefore largely irrelevant to the management of the current higher education system.

There are, however, important points of agreement. When the heat is taken from the debate, the two are not in serious conflict. Clark recognises the "general thrust of policy" which Trow describes. As far as quality assessment is concerned, he confirms that the HEFCE's wishes are the same as Trow's. The HEFCE's needs would be fulfilled if university departments carried out self-analysis and development on a routine basis in the way that Trow suggests they would like to.

2.2.3 'Quality': the search for definitions and assessment methods

The confusion of terminology (e.g. using 'quality' and 'standard' as though they were synonyms), and the inability to come up with widely agreed

definitions have been at least part of the reason why there is still no widely accepted approach to quality assessment in higher education.

Two papers that might now be described as 'classic', Ball (1985) and Moodie (1986), marked the initial higher education debate about the nature of quality. The 1992 legislation (Further and Higher Education Act, 1992, 1992) and the introduction of external quality assessment to inform funding, brought about a renewed spate of investigations, conferences and publications seeking to provide definitions of quality in the context of higher education. (Green, 1994; Harvey and Green, 1993). Much of the debate was at the philosophical rather than operational level, that is, coming up with few answers to questions about how to make "quality" into something which could be described, recognised and measured in the way required by government. Hammond writes:

> Learning cannot be easily reduced to a set of competencies, and 'quality' will always be the subject of varying interpretation by teachers and students. These interpretations need to be honestly and openly debated, but whatever difficulties we, as practitioners, have in defining 'quality' we believe that, like Wittgenstein's elephant , we can recognise it when we see it. (Hammond, 1995, p.1).

The definition of quality as "fitness for purpose" has been rejected in several instances in the context of higher education and has raised the question of "whose purpose?" (Harvey, Burrows and Green, 1992).

Green (1994) points out that concern about quality was not new, but until the mid-1980s any debate was mainly internal to the higher education system. Academics considered that they had always striven to maintain the highest quality education and its consequently enviable reputation around the world was evidence that they were successful.

Moodie (1986) describes how academics had responded with bewilderment and a sense of injustice when the issue of quality became the subject of public concern. Green (1994) describes how underlying this sense of hurt was the academic staff's confidence that academic standards were safe in their hands. Fry (1995) describes how this began to change in the 1990s: the universities, now facing the realities of the move from an "elite" to a less well-funded "mass" system, began to have some doubts about the quality of educational provision. Furthermore, the reputation the British universities

had enjoyed abroad was beginning to diminish; threatening an important export and source of non-governmental funds.

The literature reveals no evidence to suggest that the universities have objected to the principle of public accountability, or to the principle of quality assessment. Their objections arise from the mechanisms being employed. A note of a meeting with the Secretary of State for Education and others in March 1994 reports the view of the Chairman of the CVCP:

> The external quality assurance of teaching, measures to ensure value for money, and appropriate information for students were all needed. The question was the mechanisms. The current system was widely considered to be unsatisfactory, it was overly bureaucratic and assessment was tending to impose a subject-content standard, limiting diversity. (Committee of Vice-Chancellors and Principals (CVCP), 1994b).

A view from practising academics is expressed by Hammond who writes:

> ... difficulty lies in a style of management (sometimes referred to as 'managerialism'), which insists on an ever-growing documentation and monitoring. One consequence has been to define quality in terms of what can be easily measured rather than by what is important for the teacher and students concerned. One head of a department which received an 'excellent' in a recent quality assessment exercise is quoted ... as saying ' the teaching assessment is an absolute monster which had nothing to do with the real world at all ... it's about whether we have in place mechanisms that make sure quality doesn't vary. So what!".
>
> Bureaucratic managerialism will lead to an approach to assessment in which departments acquire a greater understanding of checklists by which they are assessed, but no greater involvement or commitment to improving the quality of teaching. (Hammond, 1995, p.2).

The Secretary of State for Education, (then John Patten), was reported as agreeing with the CVCP view that the main problem with assessment concerned the mechanisms rather than the principles of assessment and accountability. (Committee of Vice-Chancellors and Principals (CVCP),1994b).

2.2.4 Demonstrating academic standards

The CVCP reported government doubts about the comparability of academic standards:

> The Secretary of State underlined concerns about the external examiner system with regard particularly to first degrees, and about doubts over the maintenance of standards in the UK. Tim Boswell referred to the idea of the "graduate as we know it", an implicit "gold standard" to be guaranteed by the external examiner system. If standards were in fact variable, there were major questions about the external examiner system. Some minimum "threshold" standard seemed necessary; it would be to guard against the use of "fitness for purpose" to conceal the adoption of inappropriate standards. (Committee of Vice Chancellors and Principles (CVCP), 1994b).

The Vice-Chancellors subsequently agreed to investigate a way of showing whether there is comparability of standards throughout the British University system and a paper was prepared by them and made available to the CVCP.

The paper suggests that an agency (possibly HEQC)) would be required to judge whether or not an academic programme reached the threshold standard which distinguished it as being of degree level. The paper states that:

> The advantage of referring to thresholds is that it takes account of the need to provide a degree of assurance and accountability without either searching for a gold standard or accepting the inevitable loss of diversity of mission if a single 'gold' standard were adopted. (Committee of Vice-Chancellors and Principals (CVCP), 1994c).

The paper further suggests that the Funding Councils would still have to make their own judgements for the purpose of distributing public funds. The emphasis of the paper, however, is on judgements based on information that, for the most part, is already available within the system, such as the reports of Professional Accreditation Bodies and certain Performance Indicators.

2.2.4.1 Performance Indicators

Performance Indicators (PIs) were defined by the CVCP/UGC Working Party in 1986 as "statements, usually quantified, of resources employed and achievements secured in areas relevant to the particular objectives of the enterprise" (Committee of Vice Chancellors and Principles (CVCP) and UGC, 1986, p.5). The report cautions that they should be taken as signals or guides rather than absolute measures and also makes a distinction between PIs and management statistics. The latter, according to the report,

are normally comparative data, typically relating to costs, which can be used for management and control functions but which do not comprehensively assess performance.

The 1991 White Paper proposed that the Funding Councils should work together with representatives from higher education institutions to develop PIs that might be interpreted consistently and equitably across the new post-binary sector to cover teaching and research activities. In as far as this was data already available in the system, the Vice-Chancellors were not against this idea. At the end of 1992, the Funding Councils established the Joint Performance Indicators Working Group. Membership of the group and of its sub-groups was drawn from universities, the Funding Councils and other interested parties. The terms of reference included:

> To propose a range of institutional performance indicators of the efficiency and effectiveness of the use of public funds for teaching and research distributed by the Funding Councils. In particular, to cover output measures and measures of the quality of teaching and research provided to be used in conjunction with the research assessment and teaching quality exercises and to inform an assessment of value for money, and ...
>
> to consider how the range of information which institutions are requested to publish under the further and higher education charters might be presented to make it as informative as possible. (Joint Performance Indicators Working Group, 1994, p.3).

The Working Group's report was published in July 1994, recognising that it would be the first stage in a longer term developmental process. To date there is no definitive list of PIs which fulfil all the needs of the universities and government.

2.2.4.2 "Graduateness"

In order to address questions relating to a "threshold standard", the CVCP and SCOP endorsed work on "Graduate Standards" and asked HEQC in 1996 to pursue, in collaboration with the higher education sector, the notion of "graduateness" in a university system which had significantly increased in size and heterogeneity during the 1990s. A discussion paper was produced - *What are Graduates? Clarifying the Attributes of "Graduateness"* (Wright, 1996). Its starting point was the UDACE (Unit for the Development of Adult and Continuing Education) study on 'Learning Outcomes in Higher Education' undertaken in 1990-91. (Otter, 1992).

The UDACE study on Learning Outcomes in Higher Education

The consultative stage of the UDACE project (Otter, 1991) was intended to investigate ways of describing clearly what the outcomes of learning in higher education are, and what learners can do as a result. It attempted to describe what academic staff believed to be the learning outcomes of the courses which they teach (focusing on five subject areas: design, engineering, English, environmental science and social science), rather than the learning outcomes of some "ideal" or "standard" course.

As described in the consultative document, Learning outcomes were considered to be:

> a means of stating clearly and explicitly what students know and can do as a result of higher education. Focusing on the outcomes of learning, rather than on course content or aims, could help to describe both the specific subject knowledge and intellectual, analytical, personal and enterprise qualities which are developed by HE. Clear and explicit descriptions of this kind have a number of advantages:
>
> - they make it easier to recognise that learning acquired in a range of settings can be equivalent to learning in HE. This can help to increase the flexibility of HE by encouraging the accreditation of prior learning and the development of systems of credit accumulation and transfer.
>
> - they help students to make better informed choices about higher education thus increasing motivation and reducing wastage.
>
> - they offer an opportunity for curriculum development by investigating the balance between the knowledge of the subject and its value and ethos, and the development of specific intellectual and analytical skills and qualities.
>
> - they offer an effective means of describing, and possibly also of measuring, the value and benefit of higher education by making public the ways in which HE recognises and measures quality in students. (Otter, 1991, p.5).

In describing the difference between a learning outcome and an objective, the view is given that aims and objectives are primarily the language of course designers. They describe what the course sets out to do and can tend to preserve traditional course structures by discouraging comment and input from other voices: professions, employers, government and students:

> Learning outcomes, on the other hand, describe what graduates are expected to be able to do, and do not relate directly either to courses or to any particular methods of teaching and learning. They can include both knowledge of the subject and the intellectual and personal qualities which are developed as a result of in depth study of a subject. The explicit and detailed nature of learning outcomes makes it easier for those outside HE, government, employers etc. to understand the nature of the HE curriculum and to make realistic inputs to its development. Learning outcomes also make it easier for students to understand what is expected of them and to take greater responsibility for their own learning. This can be a means of developing alternative approaches to teaching and learning resulting in greater flexibility and wider participation in HE. (Ibid, p.5).

The consultative document also draws on the debate about the meaning of "competence" and its place in higher education, describing the two major concerns of the academic world. The first is the fear of "vocationalism", i.e. the fear that important dimensions of higher education which relate to the development of the person, to the acquisition and transmission of cultural and social values, may be lost in the pursuit of short term work related value systems. The second is the fear of reductionism, i.e. that the analytical techniques which break learning down into small pieces inevitably lead to the neglect of those qualities which academics understand as a subject, profession or discipline.

In the opinion of the consultative document's author, against these fears must be set the potential advantages of the approach. The primary advantage is that breaking down learning into small and explicit statements makes it easier for the learner and teacher to understand what is expected and facilitates the identification of common ground between disciplines and occupations. The result, according to the document, can be:

> a more flexible, responsive and economical education, training and qualification system, and one which is particularly appropriate in a world where rapid change calls for continuing education throughout life as people adapt to new roles, occupations and technologies. (ibid, p.6).

Also reported is:

> widespread ignorance, in higher education, of the role of the National Council for Vocational Qualifications, and very few people are aware of the scope and potential impact of the Department of Employment's standards development programme. Many of the HE staff consulted about work expressed concern about the nature of developments in vocational education. Some clearly saw it as a threat to academic standards and autonomy but very few had real knowledge of the principles or the practice of standards development nor of the potential value to HE

> resulting from a harmonisation of the vocational qualification system. (Ibid, p 6)

The project subject group, according to the document (ibid, p.6), tended to avoid the use of competencies in the development of learning outcomes. Equally, other groups avoided the use of other constructs such as skill and knowledge, because they separated the learning outcomes in unhelpful ways. The subject groups were, however:

> attracted by the notion of developing learning outcome statements from a key statement of purpose and some groups devoted considerable time to considering what the key statement ought to be, and to working with graduate professionals to develop statements. The learning outcomes described... show clearly that the groups did not find that developing a key purpose for an occupational or vocational area was appropriate or possible. Some groups did find that a key statement, reflecting the values and ethos of the subject or the profession, was an appropriate starting point in developing their learning outcomes, while one group used the notion of a good graduate as a key statement. (Ibid, p.6).

The final report following the consultation (Otter, 1992), had as its purpose an examination of the feasibility of describing a degree in terms of its outcomes - what a graduate can do, know and understand. It is based on two premises confirmed through the consultation:

- that learning is the central purpose of higher education
- that the measurement of learning might best be achieved through the description of outcomes (what a learner knows, or can do as a result of learning) rather than the more traditional description of learning input (syllabus or course content).

The HEQC graduate standards programme

The broad aim of the HEQC graduate standards programme was "to assist those who design, teach and assess students on degree programmes to specify explicitly the expectations that they had of a graduate" (Wright, 1996, p.1). It seeks to clarify what the academic community expects of a graduate before making any attempt to match this against others' expectations.

The programme report (Wright, 1996) builds on Otter's work, quoting her conclusion that:

> Further work is required to seek clarification of what are the core qualities which characterise a "graduate". There is a wide consensus that there is such a set but, although a variety of models exist, there is no agreement about what these qualities are, nor how these are to be recognised. Both employers and academic staff felt that it was currently possible for people to graduate without some of the key qualities they expect of a graduate. (Otter, 1992, p. iv).

The HEQC graduate standards programme considered a) the feasibility of defining a generic set of abilities, and b) existing approaches:

a) generic abilities

'Generic abilities' refers to the core qualities which characterise a 'graduate' - what abilities and capabilities should someone who has completed a degree programme be expected to demonstrate?

Once identified, the aim is to see if these qualities could serve as "the basis for a threshold standard for all degrees, regardless of field and thus be used as a bench-mark for comparability of standards at the threshold level across the HE sector" (Wright, 1996, p.3). The emphasis is on generic attributes not only because they were looking across subjects, but also because the investigators had found that when staff in universities had been asked to articulate the standards of their degrees, they tended to speak of generic attributes such as analytical skills rather than of subject-specific aspects of learning.

b) existing approaches

Wright also gives examples of approaches already being taken including that of De Montfort University where the intention is to ensure that all its programmes permit students to acquire what are described as twelve 'competencies' which it groups under the following four headings:

- Managing tasks and solving problems
- Working with others
- Communication
- Self-awareness

Wright (1996) also puts forward the view that much thought in the United Kingdom about "graduateness" has been influenced by earlier work in the United States of America which was driven by the move to a mass higher education system. He cites the example of Alverno College in Milwaukee where, over a four year programme, each student must develop eight 'abilities'. These are communication, analysis, problem-solving, valuing in a decision-making context, interaction, global perspectives, effective citizenship and aesthetic response. These abilities are integrated with the content of all courses; the abilities and traditional course content support one another. Students are assessed for them together.

2.2.4.3 Threshold and other academic standards; the view from four subject groups

A further paper was published by HEQC as part of its 'Graduate standards programme'. This report, entitled *Threshold and other academic standards. The view of four subject groups* (Higher Education Quality Council (HEQC), 1996) suggested that academics believe that precise comparability of degree standards cannot exist at the broad subject level, although at the level of specialisms within subject areas greater comparability can be achieved. The four subjects reviewed were English, biology, art and design, and business and management. The study was based on the views and perceptions of academics and subject associations gathered through surveys and a series of national subject-based seminars. The study raises the question of whether 'subject' is a meaningful concept in present day higher education.

Thirty-four subject groups responded to the survey, the primary aim of which was to explore the feasibility of defining and developing threshold and other standards for undergraduate degree programmes in the context of the four subject areas. The study found that the concept of a minimum 'threshold standard' had little practical meaning as yet, except on vocational courses; instead standards were understood in terms of final degree classifications. Both staff and students regarded a second class degree as the real minimum with third and pass degrees being seen as residual categories.

2.2.5 Changes in teaching, learning and their management

The Vice-Chancellors have also responded to government higher education policy by reviewing teaching and learning. Examples of this include a series of research seminars organised jointly by the CVCP and the Society for

Research into Higher Education (SRHE). These were intended to bring together senior university staff with leading researchers in higher education. Two of the seminars; 'Management of teaching and learning; towards change in universities' (Elton, 1994) and 'Teaching and the quality of learning' (Entwistle, 1993), considered "ways in which universities may respond to the pressures affecting teaching and learning as a result of the growth in student numbers and to the decline in unit funding". (Committee of Vice-Chancellors and Principals (CVCP),1994d).

2.2.5.1 The management of teaching and learning

The seminar on 'The management of teaching and learning' (Elton, 1994) considered the role of management in support of teaching and learning and described how change might be facilitated by adopting a new model of university management, termed "new collegial", that might replace the current collegial and hierarchical models. A key feature of this new model includes the involvement of all staff, as well as students, in "the enterprise of learning".

Laurillard supports the view that change is needed. She believes that change should be driven by the universities, to meet their own needs in their own way, rather than simply as a reaction to government pressure. She writes:

> The academic system must change. It works to some extent, but not well enough ... as higher education expands we cannot always rely on human ingenuity to overcome its inadequacies ... traditions, values, infrastructure [in higher education] create the conditions for a natural inertia. (Laurillard, 1993, p.3, 4).

Regrettably, in her view, the university system is being forced to change by pressures that are nothing to do with the traditions and values of the universities:

> The pressure is for financial input to go down, and some measurable output to go up ... we all scurry about in response to the increasing external pressures which exercise their own peculiar forms of change. Academics are going on courses of management training and marketing methods. Reform of an education system might be better served if they went on courses on how to teach better. (Ibid, p.4).

She goes on to acknowledge, however, that she sees the solution as being found in a new organisational infrastructure rather than in teacher training. She says that high academic standards are assured partly through setting up mechanisms that are capable of monitoring learning and changing. The "goal-action-feedback-revise action" cycle should be evident at every point in the organisational process.

She says one can argue that students should take responsibility for their own learning, where they use the university as a set of resources largely under their own control:

> This is the most attractive vision of academic learning - that of a community of scholars pursuing their own course towards knowledge and enlightenment, inspired but not directed by their teachers. (Ibid, p.2).

She goes on to describe, however, how universities can only aspire to this at postgraduate level:

> At its best this model is indeed attractive and highly productive, but because it is labour intensive, it is not practical for undergraduates - while teaching and assessing en masse, teachers are as embedded in a system they cannot fully control as their students. (Ibid, p.2).

2.2.5.2 Teaching and the quality of learning

The CVCP seminar on 'Teaching and the quality of learning' (Entwistle, 1993) identified features of teaching which contribute to effective learning. The view is offered that quality audit and assessment alone will not guarantee high-quality learning. The report suggests that economies could be derived from new teaching and learning techniques and points to the value of more active learning by students, and to the advantages of technology-based systems, with the possibility of institutions sharing resource materials.

The report contends that the focus should move from teaching to learning. Teaching should involve the facilitation and support of the learning process, i.e. returning to the views of Carl Rogers expressed in 1969:

> We are faced with an entirely new situation in education, where the goal of education, if we are to survive, is the facilitation of change and learning. The only person who is educated is the

> person who has learned how to learn; the person who has learned how to adapt and change; the person who has realised that no knowledge is secure; that only the process of seeking knowledge gives a basis for security. Changingness, a reliance on process rather than upon static knowledge, is the only thing that makes any sense as a goal for education in the modern world. (Rogers, 1969, p.104).

The National Commission on Education is also quoted in the seminar report by Entwistle, as advocating a shift in emphasis away from content and on to the process of learning:

> The process of learning is as important as its content, since it often determines how much information and understanding is retained and the extent to which it can be applied in practice. Changes in society and in the world of work are making it more important for people to be adaptable and ready to apply their knowledge and skills in many contexts ... by organising and using learning activities, environments and resources flexibly, teachers can stimulate the capacity ... to learn independently. As demand for ... further and higher education grows, institutions will be forced to move away from a dependency on contact hours as the prime means of teaching. Students' ability to work independently will become increasingly important. (National Commission on Education, 1993, pp 87-89, 92-93).

The changes in educational practice and in technology which, according to the seminar report, were already occurring, made the shift in the nature of teaching and learning feasible. The seminar report further states:

> The traditional role of the student as a passive recipient of knowledge has to change, with students increasingly becoming more active, autonomous, and responsible for their own learning. The largely unidirectional process of information flow through lectures given to mass audiences in single locations, timetabled at a fixed time, will gradually be replaced by forms of learning which allow immediate feedback and interaction for an individual learner, at times, at a rate, and in a place, which are all determined by the learner. (Entwistle, 1993, p.25).

The strongest single influence on the quality of learning is seen to be the nature of the student assessment procedure. The form and weighting of assessments directly affects the amount of time and effort which students spend on different aspects of their course. The report also agrees with other writers that there is evidence that assessment which emphasises the correct reproduction of factual material, for example, factual multiple-choice examinations or essay questions directly linked to lecture content, moves most students towards a surface approach to learning, i.e. memorising

rather than understanding. On the other hand, questions which require students to explain their understanding, to provide personal interpretations, or to solve novel problems, encourage a deep approach to learning. (Thomas and Bain, 1984; Ramsden and Moses, 1992).

2.2.5.3 The UK Universities and Colleges Staff Development Agency (UCoSDA)

The UK Universities and Colleges Staff Development Agency (UCoSDA), an agency of the CVCP with a remit to support the development of educational practices in universities and colleges, has also reflected on current practice and areas for improvement. Its report *Learning in Difficult times: issues for teaching in higher education*, (Carrotte and Hammond, 1995), provides a set of papers which, the foreword claims, gives "insights, analyses and ideas from current practitioners, rather than from those at one remove from direct academic practice". The issues and themes are consistent with those conveyed in the CVCP seminar papers, i.e. how to improve, or at least maintain academic standards for an expanding student population with decreased *per capita* funding; how to bring about a "new pedagogy of higher education"; how to harness the potential of information technology, and how to hold on to traditional academic values when government policy might lead to the substitution of the values of the business world. A further issue which is discussed at some length by contributors is the actual, or potential, conflict between research activities and the needs of undergraduates.

2.2.5.4 The Dearing Report and teaching and learning

The Dearing Report expressed the view that there had been few changes in teaching and learning practice to accommodate change:

> Despite the changes in the learning environment, teaching methods do not seem to have changed considerably. Our surveys and research suggest that lectures are still the most common form of teaching in higher education. Initial findings from research suggest that many staff still see teaching primarily in terms of transmission of information, mainly through lectures. There are many who are ready to adopt different methods of teaching as circumstances change, but others find change hard to accept and do not reflect much on their teaching or consider the basis of good teaching practice. This does not mean that staff are not interested in teaching, but it reflects the lack of incentive to develop teaching knowledge and skills, and the limited opportunities for staff development. (Dearing, 1997, p.116).

To redress this situation, the report recommended that a professional Institute for Learning and Teaching in Higher Education should be set up in order to establish higher education teaching as a profession in its own right. There should also be greater recognition (financial and non-financial) of the value of all the work of academics, not just research.

Dearing further reported that the three most frequently cited changes students wanted were:

- more relevant/wider range of books in the library
- more time devoted to tutorials and individual teaching
- more communication between staff and students

Students were also critical of the feedback they received from staff.

2.2.6 The balance between research and teaching activities

The separation of funding methods for teaching and research, the pressures of RAE and the increase in the number of undergraduates have all contributed to a tendency to see teaching and research as polar activities. This divisive tendency, according to Barton (1995), raises serious questions about the nature of teaching, research and the purposes of university experience. Rowland (1994), quoted in Barton (1995), interviewed heads of departments and found that they were, in principle, in favour of teaching but in practice they tended to give stronger support to research activity. Several reasons were given - teaching offered fewer possibilities for national and international reputations to be established for a department; teaching is difficult to assess and the financial rewards of high achievements in the RAE accrue more benefits to the university as a whole.

Foley describes how this background, combined with an erosion of the material benefits of employment in higher education (the abolition of tenure and pay levels which have fallen in relation to other professional groups), means that:

> Maintaining a suitable workforce with enthusiasm and motivation for teaching and learning will be one of the largest challenges facing higher education in the next decade. (Foley, 1995, p.21).

Barnett writes of the current challenges of teaching undergraduates, compared with research work:

> ... teaching requires a continuing commitment to the students, a continuing relationship. One has to be continually there for the students, to give them encouragement, self-belief and a sense of their future achievements.
>
> Give me the easy life, give me research; let me not be troubled by teaching. Such an attitude is understandable, even if it is not easily forgivable. (Barnett, 1997, p.21).

2.3 PART 3: OTHER STAKEHOLDERS AND THEIR POSITION

Acceptance that there are varied stakeholders in higher education, i.e. parties additional to the government, the universities and their students that have an interest in the success of higher education, and that these stakeholders may have different needs, has contributed to the quality controversy by raising questions about what different groups want from higher education and what they can reasonably expect to get. (Fry, 1995).

Major additional stakeholders are the employers, and the professional and regulatory bodies. There have been some attempts to discover what their needs are.

2.3.1 Employers

The Dearing Report (Dearing, 1997) recommended that the QAA should set up small "expert teams" of academics and employers to set standards. By suggesting bringing employers into these groups, the QAA is demonstrating the progressively more powerful influence employers have on higher education provision.

Dearing records that:

> Employers expressed strong views to us about standards. The Institute of Directors was particularly strong in its comments, suggesting that the growth in participation seen over the last decade is not compatible with the maintenance of standards. Other employer organisations expressed similar views, but less forcefully. The CBI, while expressly supporting wider participation, is concerned that the intellectual demands made on some students (most commonly those of the 1992 universities) may be inadequate and that others (most commonly those of the pre-1992 universities) may not have their generic skills adequately

developed. The concerns about standards are greatest in the areas of engineering and science. (Dearing, 1997, p.37).

2.3.1.1 Quality in Higher Education project; employer satisfaction

In 1991 a national project on Assessing Quality in Higher Education (QHE) was launched, supported by a partnership of 27 organisations from government, business and the public service sector (Green, 1994). It has undertaken a range of enquiries into perceptions of quality in higher education. The first stage focused on the identification of the criteria that different stakeholder groups regard as important in assessing quality (Harvey, Burrows and Green, 1992).

A later stage focused in detail on the perception of one stakeholder group: employers. (Harvey with Green, 1994). The context for the research is the "perceived skills gap between what the economy needs and what is currently available" (p.xiii). In the view of the researchers, the skills gap occurs for four reasons:

- A view that education is a 'once-and-for-all' activity, which ignores the need for lifelong learning and skills updating;
- A lack of communication between higher education and commerce and industry;
- The problems faced by employers in identifying what skills they want;
- The perceived threat to academic autonomy and freedom posed by closer links to commerce and industry. (Ibid, p.xiii).

From the research, five broad areas of graduate attributes emerged as of major importance to employers:

- knowledge
- intellectual ability
- ability to work in a modern organisation
- interpersonal skills
- communication.

The research suggested that employers:

> want graduates who not only add value but who can cope with change and who are able to help to positively transform their

> organisation in the face of continuous and rapid change. (Ibid, p.xi).

General dissatisfaction is not reported, but key findings are :

- In a few key areas, what employers appear to want and what higher education provides do not match.
- Employers are primarily concerned about communication skills; the range of writing abilities and oral presentation of graduates. Other concerns are time-management, planning and the ability to summarise key issues.
- Employers thought that graduates would benefit from more opportunities for work placement during their course.
- Employers are doubtful that academic staff in higher education establishments have the experience to be able to develop and assess students in a range of 'generic' skills and abilities.

The researchers conclude that employers are broadly satisfied with the graduates they recruit but whether this is due to the effectiveness of the higher education process or the recruitment procedures of employers is debatable.

2.3.1.2 Association of Graduate Recruiters (AGR)

A report by the Association of Graduate Recruiters (AGR), *Skills for graduates in the 21st Century* (Association for Graduate Recruiters, 1996), describes how graduates will need to cope with the rapid changes happening in business and in their career prospects. Downsizing and de-layering in organisations means that traditional support and progress structures are disappearing. Graduates must learn to manage uncertainty and change and be adaptable. Increasingly they will work in Small and Medium Enterprises (SMEs): a likely growth area for graduate employment but one without a tradition of providing career routes for graduates and with a different set of needs and expectations from larger, more traditional organisations.

Graduates will need skills to manage their lifetime progression in learning and work and take responsibility for their career and personal development, i.e. they need process skills to manage a lifetime's progression in learning

and in work, as well as functional skills to enable them to do the work itself. The report groups these "process" skills under the heading "Self-Reliance" and explains how they can best be applied.

To summarise, the report says that the "Self-Reliant Graduate" must be aware of the changing world of work, take responsibility for his or her own career and personal development and be able to manage the relationship with work and with learning throughout all stages of life.

The "self-reliant" skills listed are:

- self-awareness
- self-promotion
- exploring and creating opportunities
- action planning
- networking
- matching and decision-making
- negotiation
- political awareness
- coping with uncertainty
- development focus
- transfer skills
- self-confidence.

These contrast with another list they quote - a list of attributes sought by employers and summarised and published by the University of Sheffield Personal Skills Unit (during June 1989 they analysed over 10,000 graduate recruitment advertisements in the *Guardian*, the *Independent*, the *Telegraph* and the *Times*). The top ten attributes were, ranked in order of 1-10:

- oral communication
- teamwork
- enthusiasm
- motivation
- initiative
- leadership
- commitment
- interpersonal skills

- organising
- foreign language competence.

The AGR report points out that all these skills relate to working with people and while this is an impressive list, career management and effective learning skills are, at best, only included by implication.

The report states that simply asking employers what they need from graduates is not enough to predict the skills which they will need in the future. Employers have very different requirements, despite the similarities in the language they use. Moreover, these stated requirements are often based on past or, at best, current requirements for the jobs which graduates will eventually fill. They are rarely derived from a strategic assessment of the graduate's future roles within the organisation.

The report's recommendations include:

- employers should develop clear policies on the utilisation of all graduates, especially in non-traditional jobs, including help with their self-development. If this is not addressed, employers' under-use of graduates may be as much of a problem as the failure of higher education to provide the right mix of skills.

- universities should move from a model of teaching knowledge to one of enabling learning. This implies a fundamental review of the way institutions and their staff are rewarded, the inclusion and assessment of Self-Reliance Skills (including career management) in the curriculum.

- the government should reward universities for excellence in teaching. A system based on research excellence and student numbers alone will exacerbate the current difficulties.

2.3.1.3 Report of the Centre for Research into Quality, The University of Central England in Birmingham and the AGR

In 1997 the AGR and the Centre for Research into Quality jointly published a report, which expanded the themes highlighted in the 1996 AGR report. The later report claims to have:

> systematically explored the views of a wide range of employers and recent graduates to identify the nature and extent of the knowledge abilities and skills that graduates will need in the 21st Century if they are to be successful at work. (Harvey, Moon and Geall, 1997, p.5).

Acknowledging earlier studies (some by the same researchers), which attempted to prioritise skills required by employers (e.g. Harvey, Burrows and Green, 1992; Harvey with Green 1994), the joint research by the AGR and Centre for Research into Quality attempts to get a better understanding of what is regarded by employers as important by adopting a qualitative approach "designed to get behind the meaning of the skills, competencies and abilities - rather than generate more lists - to explore what they involve, in practice, in the work setting" (ibid, p.7).

The report concludes that their respondents were generally of the view that employing graduates was beneficial. Some respondents, however, were of the opinion that a degree course does not prepare students for work; those without work experience leave university with little idea of the nature and culture of the workplace and find it initially difficult to adjust.

The overall conclusion of the report in terms of what employers want is:

> Adaptive, adaptable and transformative people, these are not distinct types of employees. All employees, in different contexts, need to be adaptive, adaptable and transformative. It may be that in certain circumstances there is more emphasis on the 'fitting in' and 'doing the job' while in other situations, employees are expected to spend a lot of time motivating themselves and others to innovate and reconceptualise ways of working. However, the organisation of the future is unlikely to expect graduate-level employees to merely 'fit in' or, conversely, to be constantly 'transforming'.
>
> ... higher education needs to be aware of the changing nature of the workplace and of the requirements of employing organisations. It needs to be responsive to these changes and demands. Higher education has a responsibility to its principal stakeholders - students - to equip them with more than a profound knowledge of an academic subject area. Higher Education has a responsibility to students that includes encouraging and enabling them to develop, through their academic study, a range of explicit attributes, which allow them to subsequently engage effectively in the world of work. (Ibid, p.3).

In other words, it endorses the view put forward in the earlier AGR report that there is no generic, meaningful, set of employer requirements and it is

unlikely that anyone will find out what is wanted by global interviews of a range of employers.

2.3.1.4 Co-operation between representatives of industry and the universities

In the spring of 1996, the Council for Industry and Higher Education and a number of organisations including the CVCP and the CBI produced *Helping students towards success at work: a declaration of intent* (Council for Industry and Higher Education, 1996). The introduction states "Most British people, most educators and most students now believe that it is one of higher education's purposes to prepare students well for working life" (p.1). The document demonstrates at one level a willingness on the part of higher education and employers' representatives to work together on an acknowledged but unspecified need, and it outlines some of the issues and potential responsibilities, but it is a long way from providing resolutions. It states that there could be at least four sorts of incentive for the academic world to pay more attention to encouraging students to develop attributes for work:

- qualifications bodies might insist on it
- quality assurance criteria might include it
- funding arrangements and/or specific initiatives might favour it
- students may look for it in choosing their universities or courses.

2.3.2.0 Regulatory and Professional Bodies

Regulatory and professional bodies form another set of organisations with an interest in the success and quality of certain university programmes as a significant number of degree courses (for example, in medicine, law, engineering and accountancy) lead to professional qualifications or to exemptions from professional examination requirements. In such cases the professional bodies concerned usually impose their own demands on the curriculum and examinations. In this respect they may be considered to be among the central agencies for quality assurance (Becher, 1987).

Most regulatory bodies are established by statutes which define their powers. They exercise control over the profession in various ways. Harvey

and Mason (1995, p.3) describe them as "external watchdogs at one step removed from the profession" and describe their functions as being to:

- control entry to the profession by specifying the required knowledge and competence
- maintain a register of practitioners (registration is compulsory in order to practice)
- enforce a code of practice determined to be in the public interest.

Examples of regulatory bodies in the United Kingdom are the General Medical Council, the General Dental Council and the General Optical Council.

Distinctions between the roles of the professional and the regulatory bodies are not clear cut and the respective roles may overlap. Harvey and Mason (1995) provide the definition of a professional body as one that:

- specifies the requirements for entry to the profession, including initial educational or professional qualifications
- identifies requirements for continued membership, including continuing professional membership and work experience
- has a set of regulations or a code of professional ethics to which members must adhere or risk sanction of expulsion from the professional body.

Examples of professional bodies are the Chartered Association of Certified Accountants, the Law Society and the Royal Pharmaceutical Society of Great Britain. Specification for entry and continued membership as well as the extent of regulatory powers varies widely. However, as entry requirements often include holding some form of qualification from a university, their interest in the quality of higher education is evident.

Regulatory and professional bodies may be directly involved in the provision of higher education programmes as they want to ensure that they provide a suitable component of the education and training which will lead to eventual registration. Other bodies may allow exemption of students from certain parts of their own examinations if they have successfully completed a university programme that they have approved.

An issue still to be finally resolved is that of overlap and possible duplication between the work of the professional and regulatory bodies and the QAA in terms of monitoring and assessing educational provision in the universities.

2.4 CONCLUSIONS

The views and needs of the major stakeholders in the university system are being strongly voiced but they are not always in harmony. Fundamentally different views certainly exist in relation to the purpose of education and there is a complex mixture of opinions regarding 'quality' and 'standards'. In general, however, it can be said that the focus of those outside higher education (particularly the government) is on output standards, while those inside higher education tend to focus on process-related performance indicators. It is also true to say that few, if any, of the stakeholders see the events of the last decade in the context of TQM. Although some TQM concepts and some of its terminology have been used in the debate, there is nothing to suggest that a specific TQM approach is being promoted by any of the stakeholders as a way forward in terms of demonstrating and improving higher education 'quality'.

A review of TQM theory and practice which defines 'quality' in the context of 'fitness for purpose' and 'meeting the needs of customers' is now timely. This should help to determine whether TQM could be a helpful approach when considering the issues raised in the higher education quality debate. In particular, the applicability of TQM to a situation in which the key stakeholders have not reached consensus on the purposes of higher education needs to be assessed.

First, however, a general review of TQM development; its vocabulary, ongoing practice and culture, is appropriate. This is provided in Chapter 3. Chapter 4 considers the application of TQM to the service sector and to education.

Chapter 3

TQM vocabulary, ongoing practice and culture

3.1 Introduction

TQM in its widest sense encompasses theory, a set of guiding principles (customer focus, continuous improvement and teamwork), and a set of management tools and techniques for improving the performance of organisations.

The extensive literature on the topic describes TQM in many ways. This may partly be explained by the different approaches to TQM recommended by different authors at different stages in its development. It has been described as "a hazy, ambiguous concept" (Dean and Bowen, 1994), "a new way of thinking about the management of organizations" (Chorn, 1991), an "alternative to management by control" (Price, 1989) and "a general philosophy and set of ideas which has paradigm wholeness - an entity of related concepts, beliefs and working practices that have come together from different authors and cultural directions over a period of some thirty-five years" (Morgan and Murgatroyd, 1994).

TQM practice requires knowledge of the theory and a strategy for integrating it with local knowledge of an organisation and/or set of circumstances. Weir (1992) writes that the radical aspect of TQM stems from the requirement to work at three levels:

- Corporate mission and vision
- Strategic organisation and goal-setting
- Operational description, codification and control.

The Quality Management practitioner has to draw on the many disciplines which have influenced the evolution of TQM theory and practice. These include market research, operations management, systems engineering, economics, statistics, organisational behaviour and psychology. Crucial to the understanding and practice of TQM is knowledge of the scientific method. Also of key importance is a systematic approach to learning.

The most significant contributors to the development and documentation of TQM theory and practice are Deming, Juran, Ishikawa, Shewhart and Imai. Their works may be regarded as seminal. (Deming, 1986; Juran, 1988; Shewhart, 1939; Ishikawa, 1985; Imai, 1986). Much of the more recent literature has been developed from these works.

The introduction of TQM may be traced to when Juran and Deming took the concepts and techniques of quality control from the United States to Japan following World War II. From their work with the Japanese, which began in the manufacturing sector, Juran, Deming and others constantly developed their ideas on quality which they believed could be applied to any organisation.

Deming in particular stressed the need to understand the complete system and define its purpose before trying to improve it. Towards the end of his life he had focused on the importance of psychology and an understanding of human motivation. A basic tenet of TQM is that all work can be described as a process, therefore improving processes is the key to business improvement. Process improvement tools alone, however, will not work in organisations with steep hierarchical structures which are managed through "command and control". Company-wide cultural change, based on an understanding of human behaviour and psychology, must go hand-in-hand with process improvement.

In this chapter, each of these aspects of TQM is studied in detail.

3.2 Technical vocabulary

Like many other concepts and practices, TQM has its own, still evolving, technical vocabulary. Many words and phrases have special meanings which differ from general dictionary definitions. Problems arise if the terminology is not understood in its technical context or if it is used inconsistently. The term 'quality' itself is an example of this.

3.2.1 Quality

Different authors at different stages in the development of TQM have offered different definitions of 'quality'. It has been defined as 'value' (Feigenbaum,

1951), 'conformance to specifications' (Gilmore, 1974; Levitt, 1972), 'conformance to requirements' (Crosby, 1979), and meeting and/or exceeding customers' expectations (Gronroos, 1983; Parasuraman, Zeithaml and Berry, 1985). Deming (1993, p. 2) says "a product or service possesses quality if it helps somebody and enjoys a good and sustainable market". Juran offers two definitions - 'fitness for use' and 'customer satisfaction' (Juran, 1993).

Juran discusses the meaning of quality, saying that although brief definitions give focus, they must be developed further to provide a basis for action:

> The dictionary offers about a dozen definitions of the word "quality". Two of them are of major importance to managers.
>
> Product features is one of these definitions. In the eyes of the customer, the better the product features, the higher the quality.
>
> Freedom from deficiencies is the other major definition of quality. In the eyes of the customers, the fewer the deficiencies the better the quality.
>
> Some customers, especially consumers, do not necessarily recognize that there are two rather different kinds of quality. Their vagueness may give rise to such comments as "I know it when I see it." Managers must recognise this distinction, however, since the respective impacts are on matters such as saleability and costs.
>
> ... the main lessons for managers are:
>
> - Product features impact sales. As to this kind of quality, higher quality usually costs more.
> - Product deficiencies impact costs. As to this kind of quality, higher quality usually costs less.
>
> Despite the differences in these two kinds of quality, it would be convenient to have a short, simple phrase to describe them together. To date there has been no consensus on such a phrase. The phrase "fitness for use" has gained some followers, as have some other phrases. It is unlikely that two concepts so different can be encompassed in one terse phrase.
>
> The above definitions of quality do not meet with universal acceptance. Many companies have arrived at other definitions which they feel are consistent with the needs of their industry and with their own dialect... There is no possibility of universal definitions until a glossary, sponsored by a recognized standardization body, has been evolved. (Juran, 1992, pp. 9-11).

The meaning of quality may be summarised, according to Juran (1993), as external and internal customer satisfaction. Product or service features and freedom from deficiencies are the main determinants of satisfaction.

3.2.2 Customers

In the technical vocabulary of 'quality', the term 'customers' is also used to mean more than it does in the general dictionary sense, i.e. more than those who buy products or services from a supplier. The TQM term includes these but goes further to include "anyone who is impacted by the product or process" (Juran and Gryna, 1993, p.3). Internal as well as external customers are included. Another way of saying this is that customers are beneficiaries, recipients and "funders". Typically the external customers of a company include clients (those who buy the company's goods or services), owners, the local community and government regulatory bodies.

Juran (1988) gives the following definitions of external and internal customers. He adds that they are not 100 percent accurate but are valid to a high degree:

External customers
The term 'external customers' is used to mean persons who are not part of a company but who are impacted by its products or services.

Internal customers
The term 'internal customers' means persons or groups of persons who are part of the organisation. Within a company, for example, internal departments will be customers of other internal departments.

3.2.3 Quality Management

Juran and Gryna (1993) refer to Quality Management as "the process of identifying and administering the activities needed to achieve the quality objectives of an organisation" (p.13). There are three essential sub-processes: planning, control and improvement. (Juran, 1988).

3.2.4 Total Quality Management (TQM)

The body of quality-related knowledge is continually developing. As the scope of quality activities has spread across and between different organisations, knowledge from different disciplines has been useful, sometimes overlapping with an existing approach and sometimes adding something unique. The term TQM to describe the 'whole' quality approach is relatively new. In time, a different and/or better term may be found. The current trend is away from the use of the term which has never been wholly and consistently embraced by the authors themselves .

Juran and Gryna (1993) explain that the emphasis on customer satisfaction, broad concepts, and participation of all employees gave rise to the title Total Quality Management. They define it as the "system of activities directed at achieving delighted customers, empowered employees, higher revenues, and lower costs".

Juran describes some of the difficulties associated with naming a body of knowledge which, to bring about organisational transformation effectively over time, must be applied to every aspect of an organisation's work and be understood by all employees:

> Although there have been relatively few actual adoptions of the concept of strategic quality planning, there has been much groping in the general direction of somehow increasing the attention given to quality during the business planning process. This groping has generated a long list of terms used to describe what the companies are trying to do. The more popular terms have included:
>
> Company wide Quality Control
> Strategic Quality Management
> Strategic Quality Planning
> Total Quality Management
> Total Quality Control
>
> For the most part companies have not defined such terms with precision. As a result the personnel have been widely confused as to what change is supposed to have taken place. The confusion has been extensive in those companies where "Total" and "Company-wide" did not seem to apply to the upper managers. (Many upper managers limited their role to setting vague goals and then exhorting everyone else to meet the goals). The situation has been at its worst in the numerous cases of

> failure to make clear to the personnel just what they should do that is different from prior practice.
>
> Confusion as to the meaning behind the banner is inherently divisive. Companies that embark on broad initiatives should define their terminology with precision. (Juran, 1992, p.300).

Deming never referred to TQM and was reputed to have tried to avoid association with it. This was because systems referred to as 'TQM' have been implemented, usually unsuccessfully, which are contrary to the principles and practices he believed to be the basis for bringing about organisational transformation. In the context of introducing the principles and practices advocated by Deming, Tribus, a close colleague of Deming wrote:

> Whatever else you do, do not give your activity a name.
>
> A name provides a handy target for naysayers. If you give a name to what you do, you have to say what is included and what is not. Since you don't know, it will soon be evident that you do not know what you are talking about. Other organizations using that name may falter and this will have an effect on the people you are trying to convince.
>
> Green (1993) says that many Japanese companies began by trying to solve an almost overwhelming problem, one which threatened their existence. After that they looked back at what they had done and decided to give it a name! (Tribus, 1996, p.9).

Misunderstanding, overuse and misuse of the term TQM have given the approach a poor reputation in some instances. This has caused organisations either to stay clear of the ideas, or, consistent with Tribus' view, to adopt the ideas but not the name. Perhaps more significantly, organisations are using the ideas of TQM to bring about nothing less than organisational transformation. The intention is that the approach should become simply 'the way things are done'. In these instances, labels such as TQM serve no useful purpose. TQM is simply a label, the use of which has little to do with the prevalence of the approach.

This study, however, will continue to use the term TQM as a convenient shorthand description. In the context of this study, TQM means the set of theories, principles and practices for organisational transformation which have been developed by Juran and Deming and those closely associated with them.

3.3 TQM's origins in the USA and its development in Japan

TQM stemmed from the need to control quality in mass production and the methods adopted for this in the USA.

3.3.1 The move to mass production and Quality inspection in the USA

Garvin (1994) describes the "rise of inspection" in the manufacturing sector in the western world. In the eighteenth and nineteenth centuries, quality control as it is understood in industry today, did not exist. Most manufacturing was performed by artisans and skilled apprentices who were supervised by the masters of the trade. Goods were produced in small numbers and parts could be matched to one another by hand. Usually inspection at the end of the process to ensure the high quality of finished goods was considered unnecessary. An excellent product was seen as the natural consequence of reliance on skilled tradesmen for all aspects of design, manufacturing and service.

3.3.2 Taylor's "Scientific Management"

Formal inspection only became necessary with the rise of mass production. As volumes increased, parts could no longer be fitted to one another by hand. Sophisticated measuring tools gave inspection of final products respectability and in the early 1900s Frederick W. Taylor, the father of 'Scientific Management', gave the activity added legitimacy (Taylor, 1911). He pioneered the process of inspecting the first pieces from each batch of product, thus preventing a defective product reaching the end of the line. He also made inspection an assigned task for at least one of the foremen working on the production line. Taylor's approach was to try to help managers and workers alike. He believed that if he could increase productivity and decrease waste, the cost of goods would fall and sale prices would follow. (Copley, 1923; Juran, 1973).

3.3.3 Statistical quality control and the concept of variation

A key event in the development of statistical quality control was the publication in 1931 of W.A.Shewhart's *Economic control of quality manufactured product* (Shewhart, 1931) which gave a precise and measurable definition of manufacturing control, developed powerful techniques for monitoring and evaluating day-to-day production, and suggested a variety of ways of improving quality. It was also a key development in the evolution of TQM.

Shewhart recognised that variability was a part of industrial life and that it could be understood using statistical principles. No two parts were likely to be manufactured to precisely the same specifications. Inputs such as raw materials and operator skills would all vary to some degree. Even the same part produced by the same operator on the same machine was likely to show variation over time. This required a new approach to quality. The issue was no longer the existence of variation, as it was now understood to be inevitable, but how to distinguish acceptable variation from fluctuations that indicated trouble.

Shewhart created the theory of what we know today as statistical process control (SPC) and the associated tool, the control chart. Simple statistical techniques and graphic methods are used for plotting production values which allow the display and analysis of variation which is due to 'special' (assignable) causes and variation which is inherent in a production process (common cause), i.e. to ensure that genuine problems are distinguished from those that are due entirely to chance. Significantly, the method works by drawing samples of output during the course of production, rather than waiting until after a unit has been fully assembled, by which time it is too late to do anything except re-work it or scrap it; both costly processes.

There are three main reasons why the correct identification of the two types of variation is vital:

1. When there are irregular, large deviations in output because of unexplained special causes, it is impossible to evaluate the effects of changes in design, training etc. which might be made to the system by

management. The capability of a process is unknown whilst the process is out of statistical control.

2. When special causes have been eliminated, so that only common causes remain, improvement then has to depend on management action because such variation is due to the way that the processes and systems have been designed and built.

3. Without an understanding of variation and the difference between common and special causes, either type of cause may be, in effect, wrongly identified and treated as the other. The consequent actions may not only fail to improve the situation, but actually make it worse. Deming referred to this sort of inappropriate activity as "tampering". (Deming, 1986; Neave, 1990).

As a consequence of Shewhart's work, the emphasis of management moved from problem detection "after-the-fact" (inspection) to problem prevention, and from quality control to quality assurance. (Freeman, 1996; BDA, 1993; Wheeler, 1986).

3.3.4 The cost of quality

In 1951 Juran first published his *Quality Control Handbook* which has been regularly updated and is still a core text for TQM practitioners (Juran and Gryna, 1988). Juran tackled the problem which was exercising industrialists of the day -"how much quality is enough?". Juran observed that the costs of achieving a given level of quality could be divided into avoidable and unavoidable costs. The latter were the costs associated with prevention, notably inspection, sampling, sorting and other quality control initiatives. Avoidable costs were those of defects and product failures, notably scrapped materials, labour hours spent on re-work and repair, complaint processing and financial losses resulting from dissatisfied customers. Juran regarded failure costs as "gold in the mine" because they could be reduced sharply by investing in quality improvements. The payoffs could be substantial. In the 1950s Armand Feigenbaum took Juran's principles further and developed the ideas into 'Total Quality Control'. (Feigenbaum, 1951). Manufacturing was no longer seen as the sole responsibility of one department. Groups as varied as marketing, engineering and customer

service had to become involved otherwise mistakes might be made early on in the process that would cause problems to appear either during assembly, or perhaps even after receipt by the customer. Ideas on how to build quality into the product, rather than relying on inspection continued to develop. (Department of Trade and Industry, 1992).

3.3.5 TQM's development in Japan: the contribution of key individuals

Freeman (1996) describes how Japanese managers in the early part of the twentieth century looked to the United States and other countries for management ideas. Immediately following World War II, the Allied forces (mainly American) who occupied Japan until 1951 were anxious to improve the quality of Japanese telecommunications as it was important to their work. (British Deming Association, 1995). The Americans consequently sent quality control, management and engineering experts to teach the Japanese modern concepts and practices in their respective fields of expertise. Ishikawa (1985) notes that:

> the U.S. occupation forces taught industry straight out of the American method without making any modifications appropriate for Japan. This caused some problems, but the results were rather promising, and the American method quickly spread beyond the telecommunication industry. (p.15).

Notable amongst the American mentors were Homer Sarasohn, an engineer tasked with restoring Japan's production of radio receivers, and Charles Protzman, an engineer from General Electric. The three key points made by Sarasohn and Protzman are the basic tenets of what was to become TQM. These are listed by Freeman (1996) as:

- Every company needs a concise, complete statement of purpose for its existence, one that provides a well-defined target for the idealistic efforts of employees
- Companies must put quality ahead of profit, pursuing it rigorously with techniques such as statistical quality control
- Every employee deserves the same kind of respect managers receive. Good management is democratic; lower level employees need to be listened to by their bosses.

3.3.5.1 W. Edwards Deming and the organisation as a system

W. Edwards Deming, a statistician, was first invited to Japan by the McArthur regime to assist Japanese statisticians in studies of housing and nutrition, and for preparation of the 1951 census. In 1950 he accepted an invitation from the Union of Japanese Scientists and Engineers (abbreviated to JUSE) to return to Japan to give lectures on quality control. (Deming, 1982). Through these he introduced Shewhart's work and helped participants to understand the importance of statistical quality control in manufacturing industries. Included in his presentations was his concept of an organisation as a system.

In answering the question "What ignited Japan?", Deming replied that it (the concept of an organization as a system) was:

> The spark that in 1950 and onward turned Japan around. It displayed to top management and to engineers a system of production. The Japanese had knowledge, great knowledge, but it was in bits and pieces, unco-ordinated. This flow diagram directed their knowledge and efforts into a system of production, geared to the market - namely, prediction of needs of customers. The whole world knows about the results.
>
> ... The flow diagram starts with ideas about a possible product or service - what might the customer need. ... This prediction leads to design of product or service. Will the market be sufficient to keep us in business? Continuation through the cycle, including observations on use of product in the hands of the customer, leads to re-design-new prediction. The cycle goes on and on, design and re-design. It is a cycle for continual learning and for continual adjustment. (Deming, 1993, p.58).

Deming also introduced the use of the cycle Plan, Do, Check, Act (PDCA). This technique incorporates the principles of the scientific method and the philosophy of continuous improvement through continuous learning. Continuous learning is at the heart of TQM which promotes progress through the continual development and testing of theory ("without theory there is no learning" (Deming, 1993, p.106). Deming attributed the PDCA diagram to Shewhart but in Japan it became known as the Deming cycle, or Deming wheel. (Ishikawa, 1985). The acronym also subsequently changed to PDSA, with 'study' being substituted for 'check'. This was done to encourage studying and learning about what had happened as the consequence of

trying the 'plan', rather than a mechanistic check that the prediction had turned out to be correct. (Neave, 1990).

3.3.5.2 J. M. Juran and company-wide involvement, education and development

Juran was invited to Japan in 1954, also to give lectures on his area of expertise: quality control. He took the development of TQM in Japan a step further by his view that quality control must be an integral part of the management function and that it must be practised throughout the organisation. This meant teaching quality control to middle management. Juran's ideas spread rapidly and the Japanese ensured they were implemented by providing extensive education programmes for workers at all levels in the organisation. All workers joined study groups to improve their knowledge and expertise in statistical quality control. These study groups became known as Quality Circles. (Ishikawa, 1985).

The education and involvement of workers took TQM into a further and most significant stage in its development. Taylor had developed 'Scientific Management' at a time when most of the factory employees in the United States had very little or no schooling. Many of them were former agricultural workers inexperienced in manufacturing processes. Taylor considered that in these circumstances, workers would be most productive if every manufacturing process was broken down into its constituent steps. Each worker should carry out just one of these steps and would become skilled in that very limited area. By educating the workers, therefore, Quality Circles began to change one of the conditions on which Scientific Management had been built. (Herzberg, 1968; Juran Institute, 1991; Juran, 1992).

The human side of TQM was further developed into a system which values equally the contribution of all members of any organisation and which is rooted in a humanitarian philosophy which believes that man is "good" and the basic desire of workers is to do a good job. The management system must be such that all employees participate and the full potential of everyone is allowed to develop. The idea of "profit first" is discarded. Instead the purpose of an organisation becomes focused on meeting the needs of its customers as this is the root of the success which turns into financial gain. (Slater, 1991; Brocka and Brocka, 1992; Broedling, 1990).

3.3.5.3 Kaoru Ishikawa and education in the use of statistical and analytical tools to aid process improvement

Ishikawa's contribution to TQM was primarily to simplify the approach and to help with the education and development of the workforce. He helped to develop a set of TQM statistical and analytical tools and techniques which could be relatively easily mastered by the workforce.

Ishikawa's publication *What is Total Quality Control? The Japanese Way* (Ishikawa, 1985) provides an introduction to TQM and its development in Japan. It also provides a comparison of the ways in which companies in Japan and in the West are organised and managed. He notes with some irony that in the United States and Western Europe inspection to prevent defective goods from being shipped is still the dominant practice.

3.3.5.4 Masaaki Imai and Kaizen - continuous improvement

Imai's book, *Kaizen: the key to Japan's competitive success* (Imai 1986), is one of the key texts of the TQM movement. Imai considers that Kaizen strategy is the single most important concept in Japanese management. He also believes it to be the most important difference between Japanese and Western management philosophies. He believes, however, that the distinction between the views is one of mentality and has nothing to do with nationality. Here he differs from Ishikawa (Ishikawa, 1985) who believed that culture and religion had a very significant relation to the implementation of total quality control. Ishikawa says the Japanese, for example, have to learn a difficult writing script - kanji - and this makes the Japanese painstaking; also the Japanese do not have the strong influence of Christianity and the predominant philosophy that man is by nature evil.

In summary, the Kaizen approach as described by Imai is:

- to establish a corporate culture that accepts that problems will occur in any organisation; everyone should be able to admit them freely
- problems can be both unifunctional and cross-functional; they are solved by collaboration not conflict
- organisations must seek to satisfy the customer and serve customer needs if they are to stay in business and make a profit
- all activities should eventually lead to increased customer satisfaction

- the emphasis is on the process rather than the results because processes must be improved before there can be improved results
- the management system must support and acknowledge people's process-oriented improvement efforts (i.e. not, as often happens in the Western organisational culture, reviewing people's performance strictly on the basis of results and thus ignoring the effort made).

Imai highlights two contrasting approaches to progress: the gradualist approach and the great-leap-forward. Japanese companies generally favour the former and Western companies the latter - epitomised, according to Imai, by the term innovation. Innovation is a dramatic change while Kaizen is a continuous process of gradual improvement - the results of which are seldom immediately visible. Kaizen as a consequence does not usually call for a large capital investment of resource to implement it; this is not usually true of innovation. Kaizen does, however, call for substantial management commitment of time and effort and a willingness to invest in people.

3.4 The core features of TQM practice in its present state of development

From the 1950s to date many individuals and teams have built on the key Japanese and other developments already described. TQM has evolved as an holistic approach to organisational management, centred on the purpose of continuous quality improvement. To bring this about, every aspect of working practice and employee behaviour have to be considered. TQM prescribes a set of principles and practices which have been shown to work even though in many instances they run contrary to other prevalent business practices, and may be difficult to implement because they require organisational transformation. The core features of TQM in its present state of development are:

- The importance of a statement of aim
- Optimisation of a system
- Interdependence of processes
- The voice of the customer
- Quality function deployment
- Systems planning.

3.4.1 The importance of a statement of aim

According to Deming, a system must have an aim:

> Without an aim, there is no system. The aim of the system must be clear to everyone in the system. The aim must include plans for the future... The components need not all be clearly defined and documented: people may merely do what needs to be done. Management of a system therefore requires knowledge of the interrelationships between all the components within the system and of the people that work in it.
>
> A system must be managed. It will not manage itself. Left to themselves in the Western world components become selfish, competitive, independent profit centres.
>
> The secret is co-operation between components toward the aim of the organization. We cannot afford the destructive effect of competition. (Deming, 1993, p.51)

3.4.2 Optimisation of a system

Deming defines optimisation as:

> a process of orchestrating the efforts of all components toward achievement of the stated aim. Optimization is management's job. Everybody wins with optimization (Deming, 1993, p.53).

He further states:

> Anything less than optimization of the whole system will bring eventual loss to every component in the system. Any group should have as its aim optimization over time of the larger system that the group operates in. (ibid, p.53).

He gives an example of a food department in an organisation (the Detroit News) which provided excellent food cheaply with the result that employees ate their lunches there rather than leaving the premises. Although money was lost on the lunches the benefits to the company outweighed this disadvantage because employees spent far less time at lunch on the home ground, and more time on the job. They also appreciated the good management.

3.4.3 Interdependence

Deming writes that the greater the independence between components, the greater will be the need for communication and co-operation between them. He is also critical of the way that the ideas of Management by Objectives (MBO) have been implemented, and of the consequences of this. MBO became a popular management tool in the 1970s and is still practised. He acknowledges that the common implementation method is based on a misunderstanding of Drucker's work. (Deming, 1993; Drucker, 1973). Deming writes:

> In M.B.O. as practised, the company's objective is parcelled out to the various components or divisions. The usual assumption in practice is that if every component or division accomplishes its share, the whole company will accomplish its objective. Unfortunately, efforts of the various components do not add up. There is interdependence. Thus, the purchasing people may accomplish a saving of 10% over last year, and in doing so raise the costs of manufacture and impair quality. They may take advantage of high-volume discount and thus build up inventory, which will hamper flexibility and responsiveness to meet unforeseen changes in the business.
>
> Peter Drucker was clear on this point, with deep understanding. It is unfortunate that many people do not bother to read his warning. (Deming, 1993, p.31).

Deming's concept of an organisation as a system is different from the way that a business organisation is often represented on charts, i.e. as a hierarchy of managers and staff. As described by Tveite (Tveite, 1995), this sort of chart implies:

- The organisation is oriented to its hierarchy. Communications are focused vertically, and the person anyone most needs to please is his or her boss. In such an environment there is little concentration on the internal customers of the work or the external customers of the organisation's products and services.

- Objectives and goals are set by department (or other organisational unit). This implicitly assumes that departments are independent of each other, and that the performance, output and result of the entire organisation is the sum of the work and results of each of the parts. It is then very difficult to keep in sight any comprehensive aim for the entire system.

Tribus believes that the managerial strategy of organisations showing hierarchical organisation charts is to "divide and conquer". He also adds:

> Managers forget that work flows across the organisation.... they do not know how to recognise and define a system of processes. They do not understand what is meant by a process. They do not know how to recognise when processes which flow across an organisation chart are out of control. They persist in thinking that organisation charts describe how things get done when, in fact, things usually get done *in spite* of the organisation chart.
>
> In some organisations, this method of management leads one department to regard the other as the enemy. They would rather defeat the other departments than the competition. (Tribus, 1993, p.16).

3.4.4 Processes

Every process has three parts; *inputs* and an *activity* which works on those inputs to change them to *outputs*.

3.4.4.1 Suppliers, inputs and outputs

The term 'supplier' is used to describe anyone who provides inputs to a process (inputs are "all the means employed by the process to produce the product" (Juran, 1992, p.23). Examples are information, materials, components and human effort. Whatever is produced by the process - the output - is a product (which includes goods and services).

3.4.4.2 Juran's "triple role"

Clearly there is two-way communication between suppliers and customers. Customers provide their suppliers with, for example, orders, specifications and feedback on performance. The conventional roles are thus reversed with the customer becoming a supplier and the supplier becoming a customer (Juran 1988).

Juran describes the triple role as follows:

> Every processor team conducts a process and produces a product. To do so the processor team carries out three quality-related roles:

A processor The processor team carries out various managerial and technological activities in order to produce its products

A supplier The processor team supplies its products to its customers

A customer The processor team acquires various kinds of inputs, which are used in carrying out the process. The processor team is a customer of those who provide the inputs. (Juran, 1988, p. 274).

3.4.4.3 Statement of process purpose

Each process needs to have an explicit, shared purpose, or purposes, which are consistent with the aim of the whole system. The purpose:

- gives the reason for the existence of the process
- should usually be developed with the customers of the process
- must be clearly stated and understood by all who work in the process
- remains constant even if the process is altered or improved.

The purpose needs to recognise interdependence with other processes, so that improvements benefit the whole system. (Process Management International, 1996).

3.4.4.4 Business Process Re-engineering

Hammer and Champy have promoted a business improvement approach which they have termed Business Process Re-engineering (BPR), (Hammer and Champy, 1993). BPR is compatible with the element of TQM which is concerned with business process identification and analysis. The two approaches differ, however in that TQM favours an approach which first seeks to improve an existing process before 'writing it off', whereas BPR is first and foremost about the fundamental re-design of processes. They write:

> Nor is engineering the same as quality improvement, total quality management (TQM), or any other manifestation of the contemporary quality movement. To be sure, quality programs and reengineering share a number of common themes. They both recognize the importance of processes, and they both start with the needs of the process customer and work backwards from

> there. However, the two programs also differ fundamentally. Quality programs work within the framework of a company's existing processes and seek to enhance them by means of what the Japanese call *kaizen*, or continuous incremental improvement. The aim is to do what we already do, only to do it better. Quality improvement seeks steady incremental improvement to process performance. Reengineering, ... seeks breakthroughs, not by enhancing existing processes, but by discarding them and replacing them with entirely new ones. Reengineering involves, as well, a different approach to change management from that needed by quality programs. (Hammer and Champy, 1993, p.49).

Their ideas correspond entirely with TQM and the views of Tribus expressed earlier (Tribus,1993), in that they describe how processes in a company correspond to natural business activities, but they are often fragmented and obscured by the organisational structures. Processes are invisible and, usually, unnamed because people think about individual departments, not about the process with which all of them are involved. Processes most frequently 'flow' horizontally across the organisation, crossing departmental, or functional boundaries. Processes therefore tend to be unmanaged because people are put in charge of functional departments or work units. No one is given the responsibility for getting the whole job - the process - done.

Hammer and Champy suggest that the processes that make up a business should be given names that express their beginning and end state. These names should imply all the work that gets done between their start and finish. Manufacturing, they suggest, which sounds like a department, is better called the procurement-to-shipping process; sales, prospect-to-order; service, inquiry-to-resolution, and so on. It is claimed that hardly any company contains more than ten or so principal processes. Instead of organisation charts, companies could have process maps that give a picture of how work flows through a company. An important characteristic would be its simplicity as compared to an organisation chart of the same company.

3.4.4.5 Process improvement in TQM

In TQM, process improvement, i.e. achieving and sustaining a higher level of process performance, involves:

- understanding the process and its purpose
- understanding the variation within the process and its inputs
- working to reduce variation

3.4.4.6 Steps in Process Improvement

Process improvement consists of several steps which form a continuous cycle. Process improvement begins with recognising which process it is important to improve. The next step is to ensure that the process is well-defined, that customer requirements are valid and understood, and that measures are in place to determine how well the process meets the requirements.

3.4.5 Measurements and their importance for learning

In TQM, the importance of measurement is emphasised because it aids the learning process and leads to an increased rate of improvement. Measurements help to identify the areas which will have the largest impact on process performance, and hence, those which are worth spending time and resources improving. They also help to answer the important question "how will we know that a change is an improvement?" In summary, measurements provide information on:

- current process performance
- the effect of any changes made
- potential problems.

If there are no measures, it is difficult to:

- establish priorities and set realistic goals
- assess whether or not changes to the process resulted in improvements
- identify the causes of problems in order to prevent them recurring
- determine if the process has held the gains (standardised) (Juran, 1992).

3.4.5.1 Results measurements and process measurements

In order to improve processes it is necessary to know both *what* has been done and *how* it was done (Juran, 1992; Process Management International, 1996). This requires two types of measurement:

1. Results measurements, i.e. data giving the overall performance result (this should allow comparison between what has been accomplished and what customers require).

   Important characteristics are:

   - they give a common understanding of the present situation
   - they are fairly easy to identify
   - they may not lead to improvement, i.e. as they are the result, it may be too late to change anything.

2. Process measurements, i.e. data collected in the process 'upstream' from the result but in an area where activity affects the end result. In other words, a change in the process measurement will cause the results to vary.

   Important characteristics are:

   - they indicate elements of the process which, if done consistently and successfully, should ensure results
   - they may be difficult to identify at the beginning
   - they do not yield immediate results
   - they focus on the long term
   - they indicate where action to improve the process needs to be taken
   - they are manageable by people in the process.

3.4.5.2 Effectiveness, efficiency and adaptability

The overall quality of a process is determined by its effectiveness, efficiency and adaptability. Result and process measurements need to encompass all three characteristics.

Effectiveness means how well the process meets customer requirements. Typically the measurements of this include accuracy, reliability, ease of use, price/value, performance. Efficiency is the amount of resources required to meet customer expectations, for example, per unit costs, inspection costs, re-work costs. Adaptability describes how quickly and easily the process can respond to changing or special customer requirements, for example, time to process a special customer request, percentage of special requests fulfilled, number of approvals needed to meet a special request or time to market.

3.4.6 The Voice of the Customer (VOTC)

Organisations must understand how their customers view their products and services. True quality characteristics are customer requirements stated in the customers' own words. They are the features of a product or service which the customer values, such as safety, timeliness and reliability. They should be expressed in the terms used by the customer. In TQM this is termed the Voice of the Customer (VOTC).

Often true quality characteristics cannot be measured directly. Substitute quality characteristics are the measures a supplier uses to determine whether or not customer requirements are likely to be met. In TQM terminology, this is called the voice of the process. Often several substitute quality characteristics are needed to check a single customer requirement. (Mazur, 1993; Pennington and Sweeney, 1995).

3.4.7 Quality Function Deployment: linking the voice of the customer to the voice of the process

Quality Function Deployment (QFD) as defined by Cicala (1995) is:

> a customer driven methodology which translates the Voice of the Customer into performance measurables, then into a concept, and into a product or service, optimized process, production controls and a good distribution and sales network. (p.5).

She gives the goal of QFD as being:

> to help shorten the development time and improve the product or service offered to the customer. This is the same goal for most organizations today. However, being able to meet this goal has been a struggle for most companies. Today, many companies

> are reactive in their allocation of resources, not assigning people or priorities until there is a problem. QFD requires more resources earlier in the development process so less problems will occur when it is time to launch the new product or service. ... A misperception of QFD is that it is another tool, another acronym. ... it is not really important what you call QFD, but rather the importance is in "doing" proactive product development. QFD is one way to help your organization, proactively, deliver to the customer what it is that the customer wants. (ibid, p.5 and p.8).

Put simply, QFD uses series of matrices, or spreadsheets, to match the 'whats' (what the customer wants) with the 'hows' (the technical translation of the customer requirements). (Juran, 1992; Bossert, 1991; King, 1989).

3.4.8 Kano's model of quality

Kano has provided a conceptual model of types of quality elements which is frequently used with QFD (Kano, 1993). It illustrates that if you ask a customer to give you their requirements, they will mention some of them, identified as *performance* qualities, but usually will not mention the *basic* and *excitement* qualities. Basic qualities are the 'expectations' and 'assumptions' about what a product or service will do or have. Customers frequently voice the comparative qualities they use in selecting their purchase; these are the performance qualities. Excitement qualities are those things they had a need for but had not thought about in the context of a product or service. Their provision by a supplier would lead to 'delight'. The model also suggests, however, that quality elements or product attributes which are performance elements now were excitement elements in the past, and may become basic in the future. Also the provision of basic elements has little to do with satisfaction, but if they are omitted they can lead to serious dissatisfaction. (Kano, Seraku and Tsuji, 1984; Robertshaw, 1995).

3.4.9 Systems planning

Understanding the implications of Deming's view of an organisation as a system, as described in section 3.3.5.1, can provide the basis of planning for a TQM organisation. Key points are that:

- the system includes customers and suppliers
- the organisation requires an aim, which has to be understood and shared by those within it

- the processes which are put in place to achieve the aim have to be managed and improved with the intention of optimising the whole system.

3.5 The core features of TQM culture in its present state of development

Chaffe (1985) describes the cultural model of an organisation in which the organisation is viewed as a collection of co-operative agreements entered into by individuals with free will. In the interpretative view, which is based on this model, it is assumed that the organisation's culture and its social environment are enacted or socially constructed by organisation members (Smircich and Stubbart, 1985; Weick, 1979).

Spencer describes how, in essence, culture is described as a "metaphor for the shared symbols and meanings of organizational participants". She describes how the cultural model can be used as a vehicle for understanding organisations because:

> human beings are distinguished from all other living species by their ability to create and use symbols both as a basis of discourse and as a means of forging their individual lives. Shared symbolic systems are an inherent outcome of the communications involved in the social interaction of human beings. These shared symbols allow individuals who work together to gain a unified understanding that facilitates their co-ordinated action. (Spencer, 1994).

A particular cultural model underpins successful TQM. The required culture often runs counter to the model apparent in other management systems, for example, Scientific Management.

Some of the principle tenets of TQM culture, associated beliefs and values are:

- The need for a common language
- The importance of education and continuous learning
- Managers as leaders of empowered employees
- "Win-win"
- Teamwork
- Measurements for learning, not blame
- Achieving a shared sense of purpose

- Motivation and meeting individuals' needs.

3.5.1 A common language

Teaching people to understand the terminology associated with the practice of TQM is used as one way of building the quality culture. Spencer (1994) writes:

> as organization members master the concepts associated with words and phrases like *internal customer, root causes and kaizen,* the way they think about quality is changed.

3.5.2 The importance of education and continuous learning

Cultural transformation requires action as well as thought. When employees combine mastery of quality symbols and techniques with the power to use them as they judge necessary, they have the means to change the organisation. This calls for education and the ability and willingness to promote and engage in continuous learning. (Giddens, 1996). A basic tenet of TQM is that the people best able to improve a process are those who work on it on a daily basis. Employees, therefore, cannot simply be told what to do by management. They must make their own judgements about what and how to improve their work. To enable them to do this, they must have a full understanding, not just of their own task, but of the broader environment in which they work. The culture must be one which values all forms of learning and which provides education and training to release the creativity of all employees, which may be latent. According to Anderson *et al*, (1994), much of Deming's writings on learning and knowledge have been influenced by the work of C.I.Lewis (Lewis, 1929). The notion of theory-based, organisation-wide experiential learning is a constant theme in Deming's writings and presentations, for example:

> Experience alone, without theory, teaches management nothing about what to do to improve quality and competitive position, nor how to do it. If experience alone would be a teacher, then one may well ask why are we in this predicament? Experience will answer a question, and a question comes from theory (Deming, 1986, p.19).

He also wrote about the tragedy of workers not being trained properly to perform work, let alone improve it, and to understand the implications of their work on the work of others. (Deming, 1986).

Deming divided organisational learning into two types of knowledge; process task knowledge, and what he termed "profound knowledge". The former comprises an understanding of technology, human and task requirements, explained by precise operational definitions that guide activity and the measurement of quality. The latter, "profound knowledge", comprises systems theory, statistics and psychology. The former enables people to understand the characteristics of the process that produces and delivers products or services, and the latter contributes the methodological knowledge necessary to conduct scientific enquiry which allows an entire organisation to learn about the system and thus to improve it.

The recent practical and academic interest in organisational learning complements Deming's emphasis on creating a learning organisation. For example, the works of Argyris and Senge (Argyris, 1992; Senge, 1990). Senge has written:

> the most successful corporation of the 1990s will be something called a learning organisation. ...The organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at *all* levels in an organization. (Senge, 1990, p.4).

3.5.3 Managers as leaders of empowered employees

In the TQM cultural model, managers must act as leaders (Juran, 1989). The respective roles of managers and employees is that "Managers work on the system, workers work in the system" (Tribus and Langford, 1996). Managers must demonstrate the shared values and priorities through their own actions.

3.5.4 "Win-win"

In Deming's later works he includes competitors as part of the system. (Deming, 1993). He believed that effort should be expended not in trying to gain market share from others, but in working together to expand the whole

market, resulting in a "win-win" situation, i.e. all parties gain. Neave, in a commentary on Deming's work, writes of Deming:

> It has become clear to him that there is a backbone to the required transformation, a backbone which supports the whole body. That backbone is the conversion from the old economics based upon conflict and competition (Win-Lose: I win, you lose, or you win, I lose) to a new economics based on co-operation (Win-Win; everybody wins). It is conversion from the mistaken belief that competition is inherently good for everyone - companies, their employees, and their customers - to the realisation that working together for mutual benefit of society at large has far greater potential. ... think of the resources and energy which are wasted in competition, think how much effort is duplicated, think how often wheels are reinvented. Think instead of the rewards which would accrue if that energy could be expended in co-operation rather than conflict ... I doubt whether Deming ... conceives of a world without competition ... we are faced with competition on a national and global scale. ... But our aim cannot merely be to meet the competition, else we shall always be behind. Our competition does not stand still. How can we reach ahead? Not by creating yet more competition internally (within the company, or within the country, or on whatever scale we are thinking) with all its consequent waste, but instead by more genuine co-operation aimed at having everybody win. (Neave, 1990, p.15).

Deming's views on the harmful effects of competition on individuals and organisations (which have not been publicly shared or denied by other writers on TQM) have been supported by Alfie Kohn, a researcher specialising in education and human behaviour. In his publication *No contest: the case against competition*, he draws on a substantial number of research studies to argue that, contrary to the widely-held belief, competition is not an inevitable part of human nature and it does not motivate us to do our best. He contends that our workplaces and schools are in trouble *because* they value competitiveness.(Kohn, 1992).

3.5.5 Teamwork

TQM operates on the basis of co-operation rather than conflict. This manifests itself in a) a team approach to problem-solving, i.e. drawing together all those who may have knowledge about a process and therefore who can contribute to its improvement, and b) in the acceptance of shared responsibility for achieving a common aim. (Senge, 1994).

3.5.6 Measurements for learning, not blame

As described in section 3.4.5, the purpose of measurement is learning. The operation of TQM therefore promotes, and requires, a culture in which measurements are never used for control, or for punishment or reward, or for ranking and grading people. In TQM theory, it is recognised that the root cause of the majority of faults lies within the way the system operates and not with the operators. Because of this, measurements can be collected and used freely. The first reaction when things go wrong, or when unpredicted things happen, must be to investigate the root cause rather than to assign blame to individuals. The fear which may exist in a 'blame' culture, according to the theory, must disappear and be replaced by an open, objective and co-operative approach to process improvement, which must be underpinned by measurement.

3.5.7 Achieving a shared sense of purpose

The broad definition of 'quality' in the context of 'fitness for use' and of 'meeting customers' needs gives equal attention to the needs not just of the external customer, but to the needs of all organisational constituents, i.e. including employees, suppliers, local communities and other vital stakeholders. Because of the potential diversity, a shared view of the purpose, values and expectations of an organisation must be achieved and communicated.

3.5.8 Motivation

Instead of subordinating individual goals to common ends, TQM requires that individual goals must be recognised and respected. Deming, for example, believed that organisations must remove fear and return self-esteem, dignity and "joy in work" to the employee (Deming, 1993; Neave, 1990). Concepts of "joy in work" within TQM have led to investigations of motivation and the study of the work of behavioural scientists such as Maslow, Herzberg and McGregor.

Building on the work of Maslow (Maslow, 1954), Herzberg developed the "motivation-hygiene" theory. Under this theory, job satisfaction and dissatisfaction are not opposites. Job dissatisfaction is the result of specific

dislikes - the pay is low or the working conditions are poor. It is possible to eliminate these dislikes ("dissatisfiers", or "hygiene factors"), for example, by raising the pay or changing the working conditions. The revised conditions are then accepted as normal but do not motivate behaviour. Some factors, however, are the direct result of actions which people appreciate. He calls these "satisfier factors", or the "motivators", since his studies suggested that they were effective in motivating the individual to superior performance and effort. The hygiene factors led to job dissatisfaction because of the need to avoid unpleasantness; the motivators led to job satisfaction because of a need for personal development or "self-actualisation" (Herzberg, 1968).

McGregor describes how behind every managerial decision or action are assumptions about human nature and human behaviour. These are implicit in most of the literature about organisations and in much current managerial policy and practice. He named the two predominant assumptions 'Theory X' and 'Theory Y'. Theory X assumes that the average human being dislikes work and will avoid it if he or she can. Theory Y assumes that the average human being does not inherently dislike work and, depending on controllable conditions, work may be a source of satisfaction and will be voluntarily performed.

McGregor further describes how organisations which work on Theory X provide direction and control through the exercise of authority - what has been called "the scalar principle". Organisatons which work on Theory Y operate through "integration", i.e. the creation of conditions which enable the members of the organisation to achieve their own goals by directing their efforts towards the success of the whole organisation. These two principles very clearly have different implications for human resource management but according to McGregor the scalar principle is so firmly built into managerial attitudes that the implications of integration are not easy to perceive (McGregor, 1960).

TQM practice corresponds with Theory Y and the principle of integration.

3.6 The impact of TQM

The application of TQM has been widely acknowledged as the major reason for the success of Japanese industry following World War II. (Pascale and Athos, 1982; Peters and Waterman, 1982; Schendler, 1994; British Deming Association, 1995). This has resulted in interest from university academics as well as from management practitioners, and a consequent proliferation of publications. Some have very actively promoted the general concepts of TQM, seeking to explain the theory and provide practical guidance on implementation (Oakland, 1989; Dale and Cooper, 1992; Drummond 1992). Some have taken limited concepts from TQM and packaged them in a particular way, often to gain commercial appeal. Crosby promoted, for example, the idea that "quality is free". (Crosby, 1979). He emphasised the immense waste in the processes of inspection and in correcting faults. His solution (not supported in TQM) was to "do it right first time".

Management theorists have taken an interest in TQM, partly as a result of the volume of activity by authors and practitoners, and partly because of its multi-disciplinary nature.

Dean and Bowen (1994), write:

> We believe greater research attention should be devoted to TQ for several reasons. First it has generated a tremendous amount of interest in many sectors in the economy - manufacturing, service, health care, education and government - and in many countries around the world (Ernst & Young and American Quality Foundation, 1992); Lawler, Mohrman, & Ledford, 1992). It is difficult to identify any major organisation in which quality issues are not on management's agenda. Furthermore, many of the leaders of these organizations have begun to ask why management research and education have not yet incorporated TQ to any degree (Robinson et al., 1991). Given its importance in practice, we risk losing our credibility as management theorists by ignoring TQ in our research. (p.393).

and:

> TQ appears to cover a great deal of the same ground as management theory. Although they may use different terms, managers pursuing TQ are concerned with strategy, information processing, leadership, and many other topics that are well within our domain. Even though there is certainly a faddish element in the current attention being paid to TQ, the issues it encompasses are fundamental to understanding and managing organizations. Thus, theoretical attention devoted to these issues will be valuable regardless of the future status of the TQ movement. (ibid, p.393).

TQM also has its critics. (Wilkinson and Wilmott, 1995). Sometimes the criticism relates only to components of TQM, for example, the limitations of Quality Circles if they are not made part of an integral TQM structure (Hill, 1991; Clayton, 1993). Other, more serious criticism arises largely from the aspects of cultural change which are required for the operation of TQM. Some see TQM in the context of organisations and labour relations as an attempt to indoctrinate employees into managerial ideologies that serve corporate interests rather than those of employees (Ramsey, 1985).

Tuckman (1995) argues against TQM in a broad political context - TQM and its "goal of reducing waste" (particularly waste of paid labour time) is congruent with "New Right" ideology, as is the notion of empowerment as this is represented as "the very product of the substitution of pseudo-market for bureaucratic relations" (p 56). The emergence of TQM, in his view, is a central component within a broader attempt to create new forms of managerial and political control - not, principally, through coercion but by consent.

Examples of successful TQM practice, including the Japanese experience, however, have encouraged many companies in many countries to try to understand how TQM works and to try to apply it within their own manufacturing and service industries. Success has been mixed.

In 1992 The Economist Intelligence Unit published a comprehensive report on TQM, which they call "Total Quality" (TQ), as it has been applied in Europe, based on the findings of its research team (Binney, 1992). Case studies were compiled on the experiences of six diverse manufacturing and service companies across Europe which for more than five years had sought to apply TQ. They also conducted interviews in 40 other companies, most of which had three or more years' experience of implementing TQ. The authors write that "it was clear to us from the start that it would be easy to produce a damning report, pointing to the gap between aspiration and reality in many companies", and that "few areas of business activity suffer from as much hype, exaggeration and confusion as TQ" (p.xiii). The research investigated the difficulties as well as the successes.

The report found that "quality pays" and provide as evidence the fact that, based on data on over 3,000 business units in Europe and North America held by PIMS Associates, every two per cent improvement in the rating by their customers of their quality was associated with a one per cent increase in its return on investment. TQM was working and helping to produce good results, although some companies had been disappointed. The report says failure is largely due to too much internal focus and the lack of a clear link to customers or business results. Where it has worked, TQM has been neither a programme not a strategy, but a philosophy; the set of operating principles needed if a company is to improve continuously.

According to the report the characteristics of successful TQM are:

- an holistic approach - it must be an integrated element of the business philosophy
- a shared sense of purpose and set of values
- customer focus (internal and external)
- open and visible management
- management by fact, not opinion
- teamwork and removal of functional boundaries
- a sense of "ownership" of work
- removal of "finger pointing" and "blame culture".

The importance of leadership is emphasised. The report states that the greatest barrier to the implementation of TQM is often said to be lack of management commitment. The researchers disagree: the first barrier is the lack of understanding. The TQM principles are easy to say but very difficult to do. Some are counter intuitive.

No distinctions are made in the report between companies from the industrial, commercial or service sector. There have been successes and failures across the board.

3.7 Summary

TQM has developed over a period of about fifty years as an holistic approach to organisational management, centred on the purpose of continuous quality improvement. Its roots are in the theories and practices

of statistical process control and process improvement. While these remain the key elements of TQM, practitioners have drawn additionally on many other disciplines and practices to develop an approach which addresses the diverse needs of customers, the need for economy and effectiveness in design and production and the ability to measure, demonstrate and improve 'quality'.

TQM has recognised that process improvement tools alone will not work in organisations which are managed through 'command and control' techniques and the approach has encompassed methods for bringing about company-wide cultural change, based on an understanding of human behaviour and psychology. A specific vocabulary of 'quality' has also evolved, which can facilitate company-wide change by assisting the communication process. The designation 'TQM' is simply part of the evolution of the approach and, in time, the name will probably disappear as it ceases to serve any useful purpose in organisations in which the approach it represents becomes simply 'the way things are done'.

Despite some criticism it is fair to claim that the specific TQM approach, with or without the label, has been proved to be beneficial in terms of improving quality and increasing customer satisfaction where it has been adopted within the manufacturing sector. The next chapter will consider applications in the service sector, including education.

Chapter 4

Applying TQM to the service sector and to education

4.1 Service Quality

Despite the evolution of TQM as a generic set of principles and guidelines for continuous improvement, many working examples are still drawn from the manufacturing sector. The service industry has had to address some specific issues when considering implementation plans as services differ from production in a number of important ways. Services may be regarded as 'deeds', 'performances' or 'experiences' rather than objects; most services cannot be counted, measured or tested in advance of delivery to ensure quality. There are three well-documented characteristics of services - intangibility, inseparability and heterogeneity. (Berry, 1980; Berry and Parasuraman, 1991; Rathmell, 1976).

The intangible nature of the output of many service processes is a significant issue. The main feature of 'intangibility' is that a service cannot be stored. This removes the opportunity for the final quality check which is possible in the manufacturing sector. Furthermore, as a service is consumed at the moment of delivery, the control of its quality by inspection is too late to stop it reaching the customer.

Services are 'inseparable' in that the production and consumption of services are not separate as they are in manufacturing. Unlike in industry, quality cannot be engineered into the product in the factory and then delivered intact to the customer. Instead, quality occurs during the delivery of the service, usually during the interaction between the customer and the service provider. The quality of output is usually judged by customers in terms not only of *what* is delivered, but also *how*. In a restaurant, for example, the attitude and attentiveness of staff contributes to the perception of the quality of the total experience of dining, perhaps as much as the quality of the food itself. As services are largely about process rather than product, it is sometimes difficult for providers to describe what is on offer, and for potential recipients to describe what they want.

Services also have customers with different needs and priorities. Airline passengers, for example, may have different priorities in terms of schedules, seating plans or booking arrangements. Almost every service interaction is different, depending on the participants and the circumstances. (Parasuraman, Zeithaml and Berry, 1985; Haywood-Farmer, 1987; Sallis, 1993).

Hill (1995) describes a further aspect of services which differentiates them from other sectors - consumers can be part of the production and delivery processes. Thus the quality of the services provided will be influenced by the consumer's input. For this reason, Kelly, Donnelly and Skinner (1990) recommend that organisations conceptualise consumers as part of the organisation - "partial employees". Behaviour can then be influenced by organisational socialisation, i.e. through processes by which individuals acquire skills, knowledge and attitudes relevant to their functioning as consumers in the marketplace. (Mills, 1986; Ward, 1974).

4.1.1 The literature of marketing and delivering service quality

The literature of marketing and delivering service quality is complementary to the literature on TQM. By exploring the concepts of excellence in customer service, principles have emerged which are consistent with the customer focus of TQM. Zeithaml, Parasuraman and Berry write:

> the only criteria that count in evaluating service quality are defined by customers. Only customers judge quality: all other judgements are essentially irrelevant. Specifically, service-quality perceptions stem from how well a provider performs vis-a-vis customers' expectations about how the provider should perform. (Zeithaml, Parasuraman and Berry, 1990, p.16).

The principal contribution of Parasuraman *et al* has been the development of a conceptual model of service quality and a methodology for measuring customer perceptions of service quality. Their SERVQUAL instrument has been frequently used and critiqued (Buttle, 1995; Cronin and Taylor, 1994; Yousseff, Nel and Bovaird, 1995). SERVQUAL is founded on the view that the customer's assessment of Service Quality is superior to all others. They have conceptualised the assessment as a gap between what the customer expects in terms of service quality from a category of providers and their evaluation of the performance of a particular service provider. In their

earliest version (Parasuraman *et al*, 1985), 10 components of service quality were identified:

- reliability
- responsiveness
- competence
- access
- courtesy
- communication
- credibility
- security
- understanding/knowing the customer
- tangibles.

Their next version (Parasuraman et al, 1988) reduced these ten components to five "dimensions":

- reliability
- assurance
- tangibles
- empathy
- responsiveness.

4.2 TQM in the public sector

From its roots in manufacturing, the ideas of TQM have spread to service industries and, more recently, to non-profit and public sector activities. An evaluation of TQM for the public sector, based on case studies from the UK, Canada and the USA in the areas of health, education, government and social services, is provided by Morgan and Murgatroyd (Morgan and Murgatroyd, 1994).

They put forward the view that the objections and issues relating to the application of TQM specifically in the public sector can be seen to fall within the following areas:

- The nature of TQM itself inhibits its application to the public sector
- The nature of the public sector itself is inimical to the reception of TQM applications
- The work cultures of the professional groups which characterise the public sector are inimical to TQM
- In the public sector the customer is a more problematic concept

- Public sector provisions are much more complicated than manufacturing.

The key points that they discuss as being included in these headings are the objections which arise from the history of TQM, i.e. that TQM has come from, and essentially belongs to, the industrial or manufacturing environment which is concerned with products and which operates in a fundamentally different way. The public sector is intrinsically more resistant to change than other sectors. There is empirical evidence that attitudinally the public sector has conformed to one of the hallmarks of mature bureaucracies, i.e. over-commitment to regulation and enforcement of precedent and rules, breeding a resistance to change (Stewart, 1992). The reasons given in Stewart's research were:

- the need for change was less evident in the public sector
- there was a view that commercially-oriented changes are inimical to the ideals of public service, which may be one of the reasons why people joined the public service in the first place
- many public servants see themselves as professionals and not managers
- the tradition of playing safe in order to avoid mistakes which can lead to politicians' questions.

Other objections include the fact that the pay of managers in the public sector has not traditionally been related to performance; also they receive a significant part of their reward intrinsically, that is from the satisfaction which comes from having achieved particular aims which are to do with service ethics. Practice is oriented to 'budget-seeking' rather than to 'performance-demonstrating'.

Furthermore, TQM may be seen to provide an unwelcome challenge to professional transactions in services such as health, education and social work. These transactions are seen as being between expert and client. Professionalism in this sense is primarily individualistic, whereas TQM calls for collective planning and organisation to provide a broader structure of the

practice and standards which are to be maintained. The TQM challenge to the professional transaction leads some to think that it could only be applied to the administration which supports the professionals. In respect to the complications associated with the term 'customer', Morgan and Murgatroyd, (1994, p.54) quote Swiss (1992):

> Because government agencies must serve a wide variety of customers who have widely divergent and even contradictory demands, and because the general public remains a 'hidden customer' with yet additional, often incompatible demands, government agencies often have to deliver a service or product that reflects an uneasy compromise. In such cases the [TQM] principle of delighting the customer or even satisfying customers begs too many questions to be a clear or useful goal.

In counteracting these objections, Morgan and Murgatroyd state:

> [we] arrive at a view that the core concepts of TQM are equally as valid in the public sector as elsewhere; that while there is some validity to each of the above positions, their force is not absolute with the consequences that other TQM concepts and practices can be seen to have 'adaptive' or 'problematic' status. We also indicate that the 'traditional' public sector environment is in any case undergoing significant change because government is re-inventing the nature of its provisions by adopting new strategies of control and delivery. (Morgan and Murgatroyd, 1994, p.46).

Osborne and Gaebler (1992) list the ways in which the public sector in general, guided by government policy in the 1990s, is changing. These include:

- promoting competition between providers
- empowering citizens by pushing control out into the community
- measuring performance
- focusing not on inputs but on processes for their outcomes
- driven by their goals (vision) - not by their rules and regulations
- redefining clients as customers
- offering citizens/customers real choices
- preventing problems before they occur rather than correcting them later
- decentralising authority and embracing participatory management
- putting energy into earning money, not simply spending it.

These points clearly have resonance with TQM.

4.3 TQM in education

4.3.1 Reasons for not trying TQM

Many of the objections of the public sector in general hold true within the education sector. These can be sufficiently strong to eliminate even the possibility of trying out the ideas. Included in these are:

- tradition of individual rather than collective responsibility for quality
- the tradition of paternalism rather than customer focus
- rejection of industrial models and vocabulary
- confusing TQM with conventional styles of management.

4.3.1.1 A tradition of individual rather than collective responsibility for quality

The core of professionalism in teaching (as in health and certain other government provisions) has always been connected with the autonomy of professionals in their own arenas, such as the teacher in his or her own classroom. Quality in these instances has been defined by each professional, based on in his or her own individual dealings with students (Morgan and Murgatroyd, 1994). This approach differs from TQM because although TQM encourages the individual to take responsibility for the standard and quality of work, it only does so in the context of a system which has a commonly agreed purpose and a collective view on the dimensions of quality.

4.3.1.2 The tradition of paternalism rather than customer focus

Traditionally it is the teacher who determines what the student needs. This 'top down' approach to quality is different from the customer focus of TQM which stresses the importance of discovering what a range of stakeholders, including students, want and then aligning the service to their requirements (Brunel University, 1992).

4.3.1.3 Rejection of industrial models and vocabulary

The models and vocabulary of management can be rejected as inappropriate to the cultural tradition of education. Examples of terminology which is not easily accepted include 'performance', 'product', 'measurement' and 'customer'. Resistance to the introduction of TQM into the education sector has come from Kohn, who has been one of Deming's influential supporters in other contexts. He writes:

> Because I am raising concerns about the application of TQM to schools, I should begin by acknowledging not only my admiration for Deming but also my involvement with the movement he helped to set into motion ... Not only am I enthusiastic about TQM in a business context, but I believe that many of its underlying values resonate with some of the best work in educational theory. Deming and his followers offer an essentially positive view of human nature, emphasizing people's fundamental desire to learn and challenge themselves. TQM advocates promote democratic environments and shared decision making. They stress the benefits of co-operation and the destructive consequences of competition. They insist that a climate of trust must replace one based on fear. And they urge the abolition of systems of rating, ranking, and behavioural manipulation, including grades.
>
> While none of these ideas is new to education - indeed, each has been articulated by a variety of educational writers over the decades - we should be pleased to see them corroborated by people from other fields. But pointing out parallels in passing is very different from what is happening with TQM. Educators are attempting to transplant a model native to the business world, along with its methods and metaphors, to the classroom. (Kohn, 1993, p,58).

He particularly objects to the vision of writers such as Bonstingl (1992) who have conceptualised a system of schooling based on TQM principles. Bonstingl has written:

> In industry, front line worker teams produce goods or services. In the classroom, teacher-student teams collaborate to produce continuous improvement in the work they do together. The end product of this work is the development of students' competence, character and capabilities for compassionate and responsible citizenship ... the student is, of course, a worker as well as customer. As a worker, the student's product is his or her personal growth and continuous improvement. This may not be fully symbolized by letter or number grades, which may in fact detract from the inherent pride and joy young people take in a job well done. In Schools of Quality, tests and other assessments are tools for the refinement of the teaching/learning process, and are therefore as much an indication of the teacher's success as the success of the student. (Bostingl, 1995, p.460).

Kohn's objections are based on his view that TQM in education, by promoting a business analogy, will also encourage the view that the purpose of education is to:

> turn out willing, skilled employees whose labors will help corporations triumph over their counterparts in other countries. It is probably not a coincidence that the rationale for adopting TQM in particular is often couched not in terms of how students can be helped to become self-directed lifelong learners, but rather in terms of improving corporate competitiveness in global markets. (Kohn, 1993, p.59).

Kohn expresses dismay that the articles and books he has seen on the application of TQM fail to address any fundamental questions about learning *per se*. He suggests this is because the schools are looking to theorists or practitioners of corporate management for guidance on educational practices. He concludes his article by saying:

> When someone in the business world asks me for advice, I unhesitatingly recommend the work of Deming. Educators, though, would be better to turn to Dewey. (Ibid, p.61).

4.3.1.4 Confusing TQM with conventional styles of management

The potential for confusing TQM with other styles of management associated with mass production in industry compounds the difficulties.

Laurillard (1993) states:

> It is ironic that although higher education in the UK, for example, has a worldwide reputation for quality, it is being asked to borrow the inferior mechanisms of British Management, which has an unenviably poor reputation worldwide ... Academe knows better that *(sic)* industry how to ensure quality, because unlike industry it has always operated on the principle of individual responsibility for the standard of work, one of the cornerstones of current 'quality' theory. As the new ideology of the industrialisation of academe sweeps blindly on, it remains ignorant of the fact that 'quality assurance mechanisms' have always been in place in academe. (Laurillard, 1993, p.224).

Deming's second and final book was significantly entitled *The new economics for industry, government,* ***education*** (Deming, 1993). The words of his preface echo Laurillard's criticism of the style of management most commonly adopted but he makes it clear that he is advocating something

quite different. He also believes the changes could be universally applicable and beneficial. He writes:

> This book is for people who are living under the tyranny of the prevailing style of management. The huge, long-range losses caused by this style of management have led us into decline. Most people imagine that the present style of management has always existed, and is a fixture. Actually, it is a modern invention - a prison created by the way in which people interact. This interaction afflicts all aspects of our lives - government, industry, education, healthcare. (Deming, 1993, p. xi).

In the context of education, Tribus (Tribus and Langford, 1966) lists the following as the features which distinguish quality management from conventional management:

1. Concern to define achievement by reference to the purpose of education, not standardized tests.
2. Concern for processes instead of organizations, to make form follow function.
3. Concern for improvement processes instead of working only on outputs.
4. Concern to involve all players in the improvement process, not just the academic staff.
5. Concern that every person in the system understands how well the system works, what the system is supposed to do and how well it is doing it.
6. Concern to optimise the performance of the system as contrasted to optimising components of the system, i.e. beyond raising scores in specially identified subjects.
7. Concern that every person is educated to participate in the improvement process, i.e., that everyone becomes "response-able". Too often conventional approaches to management are concerned only to identify people who are responsible. Quality Management is more concerned to fix the system than to fix the blame.

Tribus further states that the important principle to be derived from the industrial experience is that if you want to improve a product or a service, you must pay close attention to the processes which produce it. Measurements of the final product or service provide, at best, lagging indicators. They are too late to provide more than regrets. Measuring the characteristics of the process provides leading indicators upon which actions may be taken to ensure a satisfactory result.

4.3.2 Reasons for trying TQM

Williams (1993) writes that while it is not possible to state precisely when or where the term TQM was first applied to higher education, its entry seems to have followed four main routes:

1. By way of membership of university governing bodies by business people who themselves had seen the benefits TQM was bringing to their own businesses, e.g. Aston University (Clayton, 1993), Oregon State University (Coate, 1993), and the University of Wolverhampton (Doherty, 1993).
2. Through Business Studies and Engineering departments of universities where academic staff saw, as a result of teaching about TQM in industry, the potential benefits from introducing it into the management of their own institutions. This, for example, was the starting point of the British Engineering Professors' Conference advocacy of the approach (Tannock and Burge, 1992), and also Virginia Commonwealth University (Cowles and Gilbreath, 1993).
3. Through a reaction to pressure from government, which has shown increasing concern with quality and quality assurance. Although the British government has not explicitly advocated TQM or similar approaches in higher education, it has encouraged management approaches which have the potential to deliver high quality teaching and learning and which can readily be shown to do so, at least by generating documentation which shows that something is being done about quality. Examples are given in the HEQC document, *Learning from audit.* (Higher Education Quality Council (HEQC), 1994b).
4. Through the rapid diversification of functions of many universities in the 1980s which meant that the informal peer review, used for regular award bearing courses and conventional academic research, were often inadequate. (Williams, 1992).

4.4 Examples of TQM in education

The notion that TQM is a generic approach which can be applied to any organisation in any business or service area, combined with evidence of success in other sectors, has led to some experimentation in schools, colleges and universities around the world. In the United States, the earliest

experimentation took place in the community colleges or technical institutes where the academic structure is more centralised than in the universities (Calek, 1995). Well-documented examples include Delaware County Community College in Philadelphia and Fox Valley Technical College in Appleton, Wisconsin (Spanbauer, 1992; Hubbard, 1993).

There are also case studies and examples from schools and universities (Bonstingl, 1992; Chaffee and Sherr, 1992; Langford and Cleary, 1995; Ellis, 1993; Clayton, Barnes and Hewitt, 1996; Kanji, 1996). The examples have different starting points and perspectives. Some are attempts to apply the theories and practices across all levels of the organisation; some are single projects designed to bring about improvements in a particular classroom environment (Hansen, 1993; Mehrez, Weinroth and Israeli, 1977; Sharples, Slusher and Swaim, 1996), or to study the usefulness of a particular TQM tool such as Quality Function Deployment (Clayton, 1995; Maki, Nagai and Akao, 1996).

Often the experiments, particularly in universities, have been primarily directed at administrative processes, either classroom management or the support processes for the organisation in general (Williams, 1993). Brower, who provides an overview of TQM in universities in the USA, states:

> of the couple of hundred institutions that are known to be interested in and acting in some way on TQM, the vast majority are applying it in their administrative, service and support functions, such as buildings and grounds, student registration and housing, food service, and financial administration. (Brower, 1994, p.485).

In Brower's view this is because these support activities are most similar to those in private business, they are the easiest to start with, and they are less threatening to the traditional power and paradigms of the faculty.

Tribus and Langford (1996) are critical of an approach which starts with administrative processes:

> ...it is tempting for administrators to begin by applying quality management methods to the front office, where the processes and problems often appear similar to those in commercial companies. ... It is not a good strategy to start with administration. If the administrators try to put quality management to work before anything changes in the classroom, they will be getting better at doing things they probably should not be doing in the first place.

This is a useful reminder that the starting point in any TQM application must be an appreciation of the aim of the system and the key processes which work together to achieve it. In examples where the application of TQM has been most beneficial in an educational context, for example, in Mount Edgecumbe High School in Sitka, Alaska (Tribus, 1990), the organisation has not tried to copy industrial applications. Instead they have taken the TQM philosophy and generic principles and tools and techniques and applied them to their own unique set of circumstances. There has been a deep understanding of TQM and of the aims and nature of their own 'business'.

Other organisations have come to the ideas of TQM empirically over a period of 20 years. Notable here is Alverno College. McEachern and O'Brien write:

> Over the past 20 years, the faculty and academic staff of Alverno College have drawn upon the principles of ability-based education and assessment to continuously improve teaching and learning processes across the College. More recently, Alverno established a Quality Council to explore how Continuous Quality improvement (CQI) principles might be applied to an organizational environment already committed to continuous improvement of teaching and learning. As a result we have discovered points of connection between CQI and the principles underlying ability-based education that includes Assessment of Learning.
>
> ... It is the unrelenting focus on everything connected with teaching and learning as a process that accounts for the "constancy of purpose" that often leads others to view Alverno as an educational institution embodying the principles of CQI.
>
> We do not use the language of CQI when discussing these processes, because the quality principles have been integral to our curriculum for many years and have become business-as-usual. We have found many of the principles and practices associated with quality initiatives congruent with our own educational principles and practices, particularly our theory and practice of assessment [self assessment is both a means and end of learning]. In a sense, CQI principles and practice help validate what we have found as valuable in ability-based education This congruence is also significant, we believe, because it demonstrates that there are other routes to quality that have been developed and tested in higher education and that do not rely on importing the tools and methods of CQI developed in business and industry. (McEachern and O'Brien, 1993, pp. 454, 455, 456).

The authors further describe discussions they have had on the domains that underlie the work of teachers. On their behalf, Riordan (1993) identified six

domains or processes that make up "the teaching enterprise". These are given as frameworks for student learning; student learning styles and needs; assessment of student learning; curriculum coherence for student learning; collaborative enquiry, and pedagogical strategies. They claim it is the work faculty carry out to improve the processes inherent in each of these domains that enhances the quality of undergraduate education at Alverno.

4.4.1 Reported benefits of applying TQM

Benefits accrued from the pioneering attempts to apply TQM in colleges and universities have been perceived as:

- providing people with the opportunity to engage directly in the improvement of their work environment
- a change from staff explaining, to staff listening to their customers
- improved cycle time in critical processes
- improved morale
- growth in decision-making based on data
- improved working relations between people in different but related functions
- increased knowledge of what the institution is trying to achieve, and how it is trying to achieve it
- the development of a common language
- reduced re-work and scrap
- direct savings in ongoing expenses, and indirect savings in potential expenses. (Seymour, 1991; Dill, 1992).

4.4.2 Problems reported as arising from the application of TQM

Seymour (1991) also reported frustrations in the application of TQM to colleges and universities. These include:

- a high time investment due to personnel training
- overly-ambitious project selection
- insufficient administrative commitment
- resistance to change, particularly in cross-functional projects
- the difficulty of moving from the superficial application of TQM tools to the adoption of TQM as an operating philosophy

- team leaders and team members who have little experience of working as a team
- institutional concern that the results are not sufficiently tangible.

4.5 TQM and educational practice and theory

The views of Kohn and other detractors, described in section 4.3.1.3, are not shared by the majority working on projects to introduce TQM into an educational setting which includes teaching and learning. Many believe that sound educational practice and TQM are complementary and have to be combined if TQM is to be successful in bringing about transformation in an educational setting.

Based on his knowledge as a former university professor, and his involvement with TQM projects in many manufacturing and service organisations, including schools, universities and colleges, Tribus lists some differences between education and business. These contrast with Kohn's view of what TQM in a school or university might mean. Tribus (1996b) writes:

- The school is not a factory
- The student is not a "product"
- The education of the student is the product
- Successful completion of the product requires the student to participate as a co-worker managing the learning process
- Teaching and learning are two different processes
  - teaching is more akin to management than to detailed supervision of activities
  - learning is more akin to research and development (R&D) than it is to an assembly process. Attempts to organize R&D as though it were merely an assembly of ideas to be managed in the style of an assembly line have been disastrous. The same is true in education.
- In industry, quality management requires every manager of a process to identify a customer. If a process has no output for which there is a customer, why do it?
- Educators are not habituated to the concept of "customer". They are apt to believe that a process should continue because "we've always done it that way".

Cleary (1996) provides the view that quality learning does not discard sound educational practices, but instead provides a fundamentally new way of viewing them. She suggests that frequently the classroom environment retains the following characteristics:

- The teacher lectures and students listen
- Students generally work alone
- The purpose is unclear or unknown by students
- Students have a passive attitude toward learning
- Evaluation is done through the teacher's grading
- Students' participation is passive
- Students prefer taking the safest route
- Students feel disconnected from the task and its meaning
- The teacher feels responsible for the outcome.

In her view, the following would be the characteristics of an improved learning environment, assisted by the application of TQM:

- Lively interaction with others
- A sense of teamwork
- An understanding of purpose
- A passion for learning
- Immediate feedback
- Active participation
- Encouragement of risk-taking
- A sense of "connectedness" with the task and its meaning
- A feeling of responsibility for the outcome.

She claims that the application of TQM can bring about improvements in the learning environment by providing a framework for viewing schools in a different way, for example by viewing education as a system and schooling as a process in it. The system has the specific aim of developing students' ability to learn. She says a purpose is what distinguishes a system from an aggregate of separate activities. When a system is designed with a purpose in mind, every sub-system contributes to its accomplishment. Improving the learning process will mean that educators must be prepared to learn from educational and other relevant theory and research. Tribus (1966) supports the view that TQM and learning and educational theories put forward by, for example, John Dewey and Lev Vygotskii, fifty or more years ago, are compatible with TQM in education, although their theories have been neglected by contemporary practitioners.

Just as TQM in industry and other sectors has developed by incorporating the theories and practices of experts in general management, psychology and other fields (for example theories of motivation and the work of Herzberg and McGregor, as described in Chapter 3, Section 3.5.8), TQM in education is developing by drawing on the theories of experts in educational psychology and teaching.

Exploration of learning theory and the nature of the learning process, however, leads to a potential difficulty for the application of TQM which is centred on process improvement because current knowledge about the nature of the learning process is still in a primitive state. Twentieth-century learning theories may be classified into at least two major and very different schools of thought within psychological theory; stimulus-response (S-R) associationism and Gestalt-field theories. Learning, as explained by S-R associationists, is brought about by stimuli which act on an organism to cause it to respond in a particular way. To Gestalt field theorists, however, learning is a process of gaining or changing insights, outlooks or thought patterns. It centres on the purposes underlying behaviour and on individuals' means of understanding themselves and how they can work to achieve their purposes. (Bigge, 1964).

A more recent influential educational theorist is Kolb (Kolb 1984). Drawing on the intellectual origins of experiential learning in the works of Kurt Lewin and others, and on the works of educational theorists such as John Dewey, Kolb proposed his model of the underlying structure of the learning process which is essentially the same as the PDSA cycle used in TQM and described in Chapter 3, Section 3.3.5.1.

Kolb's work further emphasises learning as a continuous process. Learning serves not only to develop new ideas but also to modify, or dispose of, old ones. He refers to learning as "*the* major process of human adaptation" (Kolb, 1984, p.32), and explains how this concept is broader than that commonly associated with the school classroom as it occurs in all human settings and encompasses all life stages.

Experiential learning is distinguished from the behavioural theories of the S-R Associationists by its emphasis on the process of learning as opposed to the behavioural outcomes. The benefits of viewing learning as a process have been reinforced by the work of Bruner (1966). Bruner stresses that the purpose of education is to stimulate enquiry and skill in the process of gaining knowledge, not to memorise a body of knowledge. "Knowing is a process, not a product" (Bruner, 1966, p.72). Friere (1974), refers to the harmful "banking" concept of education, i.e. students receive, memorise and repeat knowledge received from the teacher.

The theories of the S-R Associationists are now thought largely to belong to the "traditional" style of facilitating learning while the Gestalt-field theorists have influenced the "progressive" style. Stevenson and Palmer (1994) have listed the characteristics of each of these. They are reproduced as Table 4.1. The characteristics described as "progressive" clearly parallel the characteristics to be found in an educational setting following the principles of TQM, as described by Cleary (1966) at the beginning of this section.

Progressive	**Traditional**
Integrated subject matter	Separate subject matter
Teacher is a guide to educational experience	Teacher as distributor of knowledge
Active pupil role	Passive pupil role
Pupils participate in curriculum planning	pupils have no say in curriculum planning
Learning predominantly by discovery techniques	Accent on memory, practice and rote
External rewards and punishment not necessary	External rewards, emphasis on grades
Intrinsic motivation	Extrinsic motivation
Not concerned with conventional academic standards	Concerned with academic standards
Little testing	Regular testing
Accent on co-operative group work	Accent on competition
Teaching not confined to classroom base	Teaching confined to classroom base
Accent on creative expression	Little emphasis on creative expression

Table 4.1 Characteristics of progressive and traditional styles [of facilitating the learning process]

Source: Stevenson and Palmer, 1994, p. 38.

4.6 Academic research into "quality" in higher education

Two recent research projects investigating quality in the higher education system; what it is and how it may be assessed, have been conducted by the Centre for Higher Education Studies (CHES), the University of London Institute of Higher Education, and by the Centre for Research into Quality at the University of Central England in Birmingham (the Quality in Higher Education Project (QHE).

4.6.1 The CHES project

In 1991 CHES began a two year programme of research on 'Identifying and Developing a Quality Ethos for Teaching in Higher Education', supported by the Leverhulme Trust. The primary aim of the study was:

> to advance understanding of the quality of undergraduate education and how to enhance it, by a systematic analysis of previous research in Europe, North America and Australia and by canvassing the views of large samples of students, employers, academics and administrators.
>
> The study is based on the premise that quality management will be facilitated if there is clear understanding of what different groups have in mind when they seek quality improvement. (Centre for Higher Education Studies (CHES), 1991, Newsletter 3, p.1).

The primary outcome of the research was the identification of perceived discrepancies between attributes of staff, students, courses and institutions that were deemed to be important for good teaching, and their actual presence in each institution.

The practical value of the findings has not been explored directly against these findings. Williams (Williams, 1993) has, however, presented his views on the issues in higher education which TQM must address. His comments are based on CHES' empirical research and on the presentations of papers describing TQM applications in several universities in the UK and USA.

His major themes are continuous improvement, extrinsic and intrinsic rewards, the necessity for co-operation in achieving a shared purpose and the student as "customer". He links continuous improvement to the university reward system. He writes:

> Continuous improvement has always been at the heart of the research function of universities and the main justification of frequently made claims about the symbiotic relationship between research and teaching is that the problem solving epistemologies and methodologies of research, as well as its findings, are the engine which drives improvements in teaching. The best research universities must have high standards, must be seen to have high standards and must constantly seek to improve these standards if they are to retain their reputation (and their income). Much of the recent criticism of higher education amounts to the claim that standards, which are commonplace in research, do not penetrate the barrier that separates research from teaching in day to day practice. This is usually perceived to be linked to extrinsic rewards which are claimed to be higher for successful researchers than for academic staff who show excellence in teaching.
>
> ... it is likely that, for many academic staff, it is the satisfaction derived from doing research rather than the financial benefits derived from it that account for its high status in many traditional

> universities. If this claim is valid the quality managed institution must seek ways of raising the intrinsic sense of achievement derived from teaching, as well as the financial incentives, if teaching is ever to have as much prestige as research in higher education institutions. (Williams, 1993, p.231).

The empirical research found that recognition by senior staff of the competence of teachers was one of the areas where British university management is most likely to be seen by academic staff as falling short of what is necessary to provide effective teaching.

On the topic of co-operation Williams says:

> One of the most persuasive features of TQM is its emphasis on encouraging all staff to feel part of a common enterprise with sets of mutual obligations and incentives in which the success of any one individual contributes to the success of the whole organisation, and the success of the organisation benefits all the individuals within it. (ibid, p.233).

He implies that there may currently be a division between academic and support staff which does not support the TQM ideal. He also refers to the divided loyalty of academics, i.e. although institutional loyalty is important, so is loyalty to individual students and to the network of scholars in a subject or discipline.

In Williams' view, the co-ordination and management required by TQM are also likely to be issues in themselves in an environment where individualism is often highly valued:

> university management has often been referred to as organised anarchy (e.g. Cohen and March 1974) and many academics are rather pleased with the description. It distinguishes their liberal individualistic ideology from the sharply focused, rigid orthodoxy that characterises efficiency in many other activities. (Ibid, p.235).

On the topic of the 'student as customer', Williams further writes:

> this ambiguity of the student's position as both raw material and customer is at the heart of some of the grass roots tensions as ideas of quality management begin to permeate higher education. The primary aim is learning; teaching is one way of facilitating learning: but learning also requires a contribution on the part of the learner. (Ibid, p.232).

4.6.2 The QHE Project

Also in 1991 a three year QHE (Quality in Higher Education) project was launched following a conference on Quality at the University of Central England in Birmingham. The level and range of interest in the topic was evidenced by the fact that it attracted sponsorship from 28 organisations drawn from education, government and business. The project aim, as described in the research report, is:

> To establish what is meant by quality in higher education and how it might be assessed. The primary focus of interest is the quality of teaching and learning. The first stage of the research focused on the identification of the criteria which different stakeholder groups regard as important in assessing quality in higher education. An underlying aim of the project is to inform policy. (Harvey, Burrows and Green, 1992a, p.iii).

Quality is viewed as "an elusive concept" like "freedom" or "justice" - "we may have an intuitive understanding of what it means but it is often hard to articulate" (Harvey, Burrows and Green, 1992a, p.4). The report identifies thirteen ways in which the notion of quality is used but for the purposes of the report narrows these to quality as exceptional; as perfection (or consistency); as fitness for purpose; as value for money, or as transformative.

The report confirms the view that, 'fitness for purpose', although widespread as an operational approach to quality in higher education (Ball, 1985; Reynolds, 1986; Crawford, 1991) is not applied to higher education in a uniform or consistent way. It subscribes to the view that:

> The problem with this definition is that it is difficult to be clear what the purposes of higher education should be. It does not explain who should determine the purposes of higher education or how to accommodate the possibility of conflicting purposes. (Harvey, Burrows and Green, 1992a, p.5).

"Quality of transformation" echoes a fundamental part of Deming's writing (Deming, 1982), although he is not mentioned in the description of what the QHE researchers mean by transformation, and there is a suggestion that the approach is inconsistent with "fitness for purpose". They write:

> This notion of quality as transformative raises issues about the relevance of a product-centred notion of quality such as fitness-for-purpose. There are problems, as we have seen, in translating product-based notions of quality to the service sector. This

> becomes particularly acute when applied to education. Unlike many other services where the provider is doing something *for* the consumer, in the education of students the provider is doing something *to* the consumer. It is an ongoing process of transformation of the participant, be it student learner or researcher. This process of transformation is necessarily a unique, negotiated process in each case. (Ibid, p.6).

TQM and BS5750 (now ISO 9000) are referred to as "industrial models of quality assurance" (ibid p.46). Its perception as an industrial model, in the view of the researchers, renders it less attractive to education.

The researchers further report that the TQM definition of quality as meeting customers' requirements might appeal to some interest groups as it would mean that the views of the providers were not dominant over those of students and employers. They believe, however, that there would be difficulties in adopting the TQM model for higher education because, in their view:

- It would not allow room for any competing notions of quality and there are difficulties in adopting a single definition of quality
- There are problems identifying who is the customer and what is the product in relation to higher education, yet both TQM and ISO9000 rely on developing clear and unambiguous organisational objectives or product specifications.

According to the QHE researchers, the teaching and learning process is difficult to 'control' in the TQM or BS5750 sense. If the service itself is seen as the product this is a difficulty because:

- the service is intangible, and thus it would be more difficult to establish standards and measure whether they had been achieved
- production and consumption occur at the same time, it would therefore be difficult to set up checks in the production process to prevent poor quality services reaching the consumer
- the process (inputs) cannot be "controlled" to ensure they are all the same because the producer is part of the service which involves a personal relationship with the consumer
- the consumer is necessary to the production of the services in a way that is not true of manufactured goods.

Furthermore the researchers state that:

> during the learning process decreasing the degree of variation (one of the TQM aims) is an inappropriate objective - the emphasis should perhaps be on increasing the degree of variation in the process to match the different needs of the consumers (in this case, students). (Harvey, Burrows and Green, 1992a, p.47).

Although they had little evidence that research into service quality (Gronroos, 1984; Parasuraman et al., 1985) had affected higher education, they saw some potential but considered this to be beyond the scope of their own research.

The working hypothesis was developed that:

> "Quality" is a relative concept. Its definition varies according to who is making the assessment of quality, which aspect of the higher education process is being considered and the purpose for which the assessment is made. (Ibid, p.7).

The focus of the empirical research involved identifying diverse interest groups, or 'stakeholders', in higher education and exploring what they regarded as important criteria for assessing quality. Eight stakeholder groups were identified: students; employers; 'government', funding councils, teaching staff in higher education institutions; managerial, administrative and support staff in higher education institutions; accrediting and validating bodies such as BTEC, and assessment bodies (Her Majesties Inspectorate at the time).

The aim at the end of the QHE project was to have a set of quality criteria which reflected the views of stakeholders. Existing quality assessment and assurance techniques would be evaluated against these criteria in respect of their appropriateness and usefulness in the context of higher education, with a view to determining which areas needed further research and development in the second phase of the project.

One of the research conclusions is that:

> approaches to quality assurance taken from industry such as BS5750 and TQM are now being introduced in some institutions but little evaluation has taken place to see how effective they are in maintaining and enhancing quality. There is some evidence to suggest that while these systems may be effective in improving some aspects of higher education, they may prove inadequate when it comes to improving the quality of teaching and learning.

> Further evaluation of the suitability for higher education of these industrial models is therefore needed. (Harvey, Burrows and Green, 1992a, p.46).

The continuation of the QHE research led to more detailed reports on the experiences and needs of staff and students in universities, of employers, and of professional bodies (Harvey, Burrows, and Green, 1992b; Harvey and Green, 1994; Harvey, Mason, with Ward, 1995).

Harvey and Knight (1996) have used the data from these studies and concluded:

> ... stakeholders in higher education, whether they be internal stakeholders or employers, have a definite view that quality is related to the learning process. That is not to say that they are unmindful of funding considerations, but rather to observe that for them the test of quality lies in the experiences of learning. This is particularly marked when looking at the views of academic staff and students where data mainly drawn from the UK show that what matters to them is the process of learning. (p. 108).

This leads them to suggest that any system of external quality monitoring (EQM) must clearly focus on learning. They write:

> [EQM] must embrace a transformative notion of quality and ultimately examine ways in which students are being empowered as life-long learners. Such a model should:
>
> - see EQM as facilitating and ensuring a process of *continuous quality improvement* rather than bureaucratic accountability;
> - facilitate *bottom-up* empowerment of those people who can effect improvement;
> - enable top-down audit of the continuous quality improvement process;
> - be *efficient,* non-burdensome, rational and effective. (ibid, p.109).

They argue, however, that despite "some superficial similarities to TQM", the suggested approach is not directly compatible with TQM philosophy. TQM, they argue, is concerned with fitness for purpose while their suggestion "endorses a transformative notion of quality" (p.118).

They include a reminder of their view of TQM by citing an earlier work by Harvey:

> At root, TQM is fixated on a product or service supplied to a customer (or client). Higher education is a participative process. There is no simple, discernible end-product of higher education, it

> is an ongoing transformative process that continues to make an impact long after any formal programme of study has been completed. In essence, TQM addresses a partial 'pragmatic' notion of quality that is of marginal use in the context of higher learning and knowledge development. (Harvey, 1995, p.141).

4.7 Conclusions

This chapter demonstrates that divergent views have continued to exist about the applicability of TQM to educational processes. For all the cogent arguments that TQM has clear relevance to education, there remain strong doubts about the applicability of an approach which is perceived by some influential figures in education as being more suitable to the commercial sector in which it originated. Yet there have been successful applications of TQM to education, and there is clear convergence between key TQM principles and widely accepted theories of learning.

There are particular areas of research which may be used to shed further light on this debate. The analysis of 'stakeholders' in university education, and their needs and expectations, can be projected into a prediction of the consequences of applying TQM (as it was defined in Chapter 3) to a specific university setting. Thereby it is possible to evaluate the relationship and potential applicability of a true TQM methodology (as defined in Chapter 3, section 3.2.4) to the current 'quality debate' and its potential to provide for the needs of higher education stakeholders as they were described in Chapter 2.

The hypothesis for this research is that an understanding of 'quality' in higher education in the TQM sense, that is, set in the context of 'fitness for purpose' and 'meeting the needs of customers', would provide:

- a means of addressing and reconciling the needs of higher education stakeholders
- the basis of a shared understanding of quality in higher education and how it can be measured, assessed and improved
- a method to bring about improvements in educational and managerial practice.

The following chapter describes the research design and methods employed to test this hypothesis.

Chapter 5

Research Method

The purpose of this chapter is to describe the research design and methods used to test the research hypothesis. It also puts the work in the context of philosophy and research traditions.

5.1. The context of philosophy and research traditions

There is no single coherent approach to research in any discipline but, as described by Black (1993), there is probably less widespread agreement about approach, underlying theories and appropriate methods for resolving issues in the social sciences than in most other disciplines. This may be due to the fact that social science research often involves considering more uncontrollable variables than, for example, research in the natural sciences. Unlike the natural sciences, research does not commonly take place in a laboratory where control over potentially contributing factors is more easily exercised. A wide variety of measuring instruments, research tools and approaches can be employed. In common with other research areas, various 'schools of thought' have formed. There has been considerable discussion about these 'schools of thought', or 'paradigms' as they are sometimes termed.

5.1.1. Paradigms

Kuhn (1962) views scientific (research) communities as groups of partisans who advocate and defend particular "paradigms". In developing his theory of scientific communities he distinguishes between "normal science" and "revolutionary science". "Normal science" is the routine verification of the theory (or paradigm) dominant in any historical period. Students and practitioners become "socialised" into a scientific community with a shared view of the kinds of problems to be investigated and the kind of research methods to be used. In contrast to "normal science", "revolutionary science" is the abrupt development of a rival paradigm. Like other professionals, scientists, according to Kuhn, see what they expect to see. Scientific revolutions are rare. According to Kuhn the process of rejecting a dominant paradigm begins with attempts to verify it. Conflict may continue between

the supporters of the old and new paradigms over what may be quite a long period of time (possibly decades), while empirical tests continue to be made on the dominant paradigm. Finally, according to Kuhn, the scientific community may accept the new paradigm and return to the activities typical of 'normal science'.

Popper (1959) developed a prescriptive, or normative, theory which contrasts with Kuhn's descriptive view of science. He maintains a scientific community should be, and to an extent is, totally open-minded and free from dogma. He agrees that while scientists are caught at certain times in their expectations, past experience and language (their paradigms), they can break out of them at any time and thus bring about scientific progress, or "revolution".

5.1.1.1 Positivism and phenomenology

Easterby-Smith, Thorpe and Lowe (1991) describe the two extreme paradigms of *positivism* and *phenomenology*. Positivism is rooted in the natural sciences. There are some divergent views on the detailed assumptions which underlie positivism but essentially its proponents believe that the social world exists externally, and that its properties should be measured through objective methods, rather than being inferred through sensation, reflection or intuition.

Phenomenology in its various forms, including qualitative methodology, largely developed as a reaction to the application of positivism to the social sciences. The central belief of the proponents of phenomenology is that the world and 'reality' are not objective and exterior, but that they are socially constructed and given meaning by people.

5.1.1.2 The significance of paradigms to the researcher

The significance of this to a researcher is that the paradigm one works within will affect the approach to the investigation, the methods employed, and possibly the subsequent external evaluation of the results.

Morgan (1979), cited in Easterby-Smith *et al* (1991), distinguishes between three levels of use of the term "paradigm":

- the philosophical level, which reflects basic beliefs about the world
- the social level, which provides guidelines about how the researcher should conduct his or her endeavour
- the technical level, which involves specifying the methods and techniques which should ideally be adopted in conducting research.

The 'positivists', who have a basic belief that the world is external and objective, would search for external causes and fundamental laws whereas the 'phenomenologist', in the belief that science is driven by human interests, would try to understand and explain why people have different experiences. The 'positivist' would gather facts and measure how often patterns occur, the 'phenomenologist' would seek to understand the different constructions and meanings that people place upon their experience.

While Easterby-Smith *et al* concede that arguments, criticisms and debates are central to the progress of ideas, there is a clear implication that positions become polarised for the sake of intellectual debate. In practice, active researchers draw from a range of traditions and methods.

This position is supported by Miles and Huberman who, writing in the specific context of educational research, provide the following summary of the polarisation:

> At one classical epistemological extreme, there are causal realists or logical empiricists who believe that there is truth out there to be uncovered - and that, once uncovered, it can be used cumulatively to predict future occurrences of the same phenomena (correspondence theory). At the other extreme are causal idealists, for whom all social reality is constructed arbitrarily believing that no lawful statements can be made that are independent of individual cognition: *We* put the meaning into the data.
>
> But this is a continuum, not a choice between two pure types...
>
> The main point is that approaches to educational inquiry vary, and vary legitimately ... epistemological purity doesn't get research done. There are few working researchers at the extremes. (Miles and Huberman, 1990, p.339).

5.1.1.3 Quantitative and qualitative research

The researcher's position in relation to positivism and phenomenology is significant when considering research design and data collection methods. Research is often categorised as qualitative or quantitative. Krueger (1994) describes how the former concentrates on words and observations to express reality and attempts to describe people in natural situations. In contrast, the quantitative approach grows out of a strong academic tradition that places considerable trust in numbers that represent opinions or concepts.

Positivism puts the emphasis on quantitative (objective, often statistically-defined) data; phenomenology implies the collection of qualitative (subjective) data. To collect quantitative data the researcher stands apart from the subject of the investigation and designs the study in such a way that personal bias or influence is avoided. Qualitative data can also be collected and interpreted by a 'detached' researcher.

Typically, qualitative research will provide in-depth information into fewer cases whereas quantitative procedures will allow more breadth of information across a larger number of cases. Increasingly researchers are recognising the benefits of combining qualitative and quantitative procedures. (Krueger, 1994).

5.1.1.4 Action research

The proponents of some methodologies, notably action research, move the researcher further away from the classical, empirical paradigm in the belief that people should be engaged in their own enquiries into their own lives; the subjects of the research control the research process and collect and interpret their own research data.

Classical action research begins with the concept that to understand something well, the researcher should try to change it. The question then arises about whether the researcher can remain independent of the change activity, or whether he or she becomes part of it. The assumption in the positivist approach is that the researcher must maintain complete independence from the subject of the research if there is to be validity in the

results produced. In the social sciences, it is harder to sustain claims of independence and, as described by Easterby-Smith *et al* (1991), action research has turned this apparent problem into a virtue. Action research assumes that any social phenomena are continually changing and the research and the researcher are seen as part of the change process itself. Action research, therefore, is an appropriate method to use when the researcher is an integral part of the topic or problem which is under investigation. (Lewin, 1946; Corey, 1953; Stenhouse, 1979; McNiff, 1988).

5.1.2 The generic research process

Assuming that the primary purpose of all research is to expand knowledge and understanding, all scientific research will have some characteristics in common, regardless of whereabouts on the "positivist-phenomenology" continuum the researcher is positioned.

Any attempt to justify a position regardless of the evidence available cannot be considered research. Such an attempt would belong within the domains of irrational opinion or beliefs. As described by Frankfort-Nachmias (1996), scientific knowledge is knowledge grounded in both reason and experience (observation). Scientists employ the criteria of logical validity and empirical validation to evaluate claims for knowledge. These two criteria are translated into the research activities of scientists through the research process.

Figure 5.1 outlines the key components of any research activity. It may be regarded as a 'high level' generic research process. Often this is referred to as the 'scientific method'. The order of the components may vary from the given sequence, and the steps may be repeated. The most characteristic feature of the research process is that it is cyclical; the process continues indefinitely, reflecting the progress of a scientific discipline.

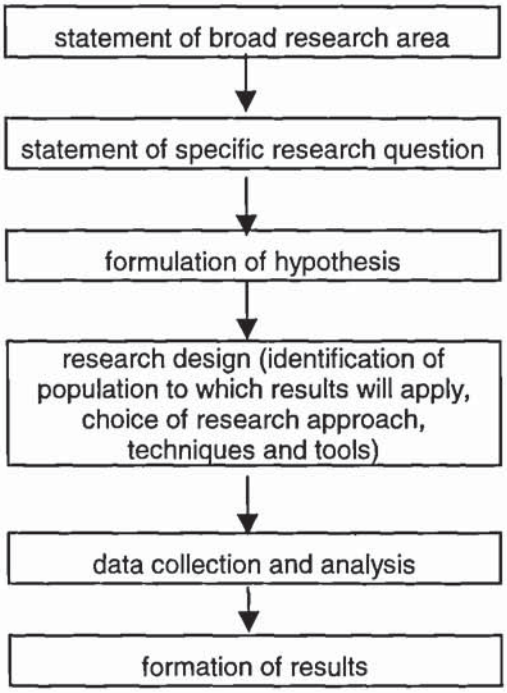

Figure 5.1
Summary of the generic research process

5.2. The research process for this investigation

The starting point for this research was the generic process given in Figure 5.1.

5.2.1 The research area

The broad research area is the quality debate, i.e. defining, assessing and improving quality in the English university system.

5.2.2 The research question

The research question is whether:

against a background of increasing student numbers, reduced *per capita* student funding and a call for public accountability, the adoption of TQM, which has a process-oriented rather than output-oriented approach, can be used:

- to enable a university to improve its performance within the existing system;
- by all types of universities to ensure recognition as high-quality institutions;
- by the Funding Councils as a basis for a more effective quality assessment system.

5.2.3 Hypothesis

The hypothesis is that an understanding of 'quality' in higher education in the TQM sense, i.e. set in the context of 'fitness for purpose' and 'meeting the agreed needs of customers', would provide:

- a means of addressing and reconciling the needs of higher education stakeholders

- a basis of a shared understanding of quality in higher education and how it can be measured, assessed and improved

- a method to bring about improvements in educational and managerial practice.

5.2.4 The basic research design

In order to test the hypothesis, it was decided to carry out in depth empirical research within the context of a current university degree programme. Aston University's BSc Optometry programme was chosen as the subject of the investigation.

In an attempt to assess the applicability of a 'proper TQM' approach to higher education processes, the research would identify the key customers (stakeholders) and collect data to gain insight into their attitudes, perceptions and opinions on the quality of the provision of undergraduate education. In other words, what are their expectations and needs and are they satisfied? In the vocabulary and approach of TQM, this is collecting "the Voice of the Customer". This approach would also lead to the identification of any differences in perspective between the different types of customers/stakeholders.

The approach is consistent with Juran's definition of the meaning of quality (described in Chapter 3, section 3.2.1), which is summarised as 'customer satisfaction'. Product or service features and freedom from deficiencies are the main determinants of satisfaction. (Juran, 1992).

It should be noted that for the purposes of the research design, the terms 'customer' and 'stakeholder' are synonymous. As discussed in Chapters 3 and 4, although 'customer' has a specific meaning in TQM ("anyone who is impacted by the product or process" (Juran and Gryna, 1993, p.3)), it is a controversial term within the context of higher education. The relatively frequent use of the term "stakeholder" in the higher education literature suggested that this term may be more readily accepted by potential research participants. A consistent definition of stakeholders and customers was provided for participants; this was "all those who have an interest in the success of the programme and need or require something from it".

5.2.4.1 The department and the programme in brief

The Department of Vision Sciences' mission, given in the Departmental Plan for 1995/6 is to be a "centre of value to the community through commitment to excellence in clinical education, research in clinical and basic science and clinical services". The BSc Optometry programme is the only undergraduate programme offered by the department and is one of seven in this subject area in the United Kingdom. It has an annual student intake of approximately 95. Its entry qualifications are higher than the national average for similar university programmes. The average A level scores of students entering the Aston programme in 1994 and 1995 respectively were 23.9 and 24.7. In 1994 and 1995 16% and 14.6% of entrants respectively had qualifications other than A Levels (Aston University, 1996).

The aim of the three-year programme, as published in the prospectus, is to offer an integrated professional and scientific education and training. The study of Vision Sciences includes optics, optical technology and human biology. It is approved by the General Optical Council (GOC) which is the professional body which registers those suitably qualified as optometrists or dispensing opticians.

The programme is structured so that professional training begins in the first year when techniques of clinical investigation are taught. Second year students begin to work directly with patients to establish the practices that constitute an eye examination. Third year students, under supervision, help to provide optometric services to the general public. The programme also includes work experience through a placement in a hospital.

Following graduation and during a further twelve months' work under the supervision of a qualified optometrist or in hospital practice, graduates are able to sit Part 2 of the professional qualifying examination for Membership of the College of Optometrists (MBCO). Graduates are exempt from Part 1. With a further twelve months' experience MBCOs register with the GOC as an optometrist and can then begin to practice in their own right.

The 1995 departmental prospectus claimed:

> the majority of our graduates work in private optometric practice, most mixing it with part-time hospital practice during the pre-registration year. A small number elect to work as part of the eye-care team in the Hospital Eye Service. Following registration a few decide to work in the optical industry, in research or as academics.
>
> The benefits of our excellent scientific education, of our strong emphasis on developing a practical I.T. capability and of our positive approach to people skills open up a wide choice of careers for those of our graduates who decide not to enter the profession.

5.2.4.1.1 Reasons for choosing this programme

The main reasons for choosing this programme as the subject of investigation were:

- it offers a scientific education as well as professional training
- it is approved by a professional body - the GOC
- it is funded by HEFCE within the category of 'subjects allied to medicine' and works within tight financial constraints, particularly when providing practical training in the techniques of clinical investigation
- the department includes in its objectives the provision of "high-quality" undergraduate education and the retention, or improvement, of its RAE grade (4 in 1992).

The programme therefore shares many characteristics with other degree programmes in the sector. The issues it faces correspond with the general issues described in Chapter 2 and yet, potentially, it has a wider range of stakeholders than programmes which do not have the double purpose of providing an 'academic' and a 'professional' education. A further important reason for its choice was that the Head of Department was interested in the project, having worked with the researcher before (Clayton, 1993b). Access to information was therefore facilitated.

5.2.4.2 The study's population - the 'stakeholders'

Determining the population for this research required the definition of who are the customers, or 'stakeholders', in the BSc Optometry programme. Stakeholders are defined as 'all those who have an interest in the success of the programme and need or require something from it'. Juran (1991) calls the set of stakeholders "the cast of characters".

The "cast of characters" in the context of the BSc Optometry programme has been identified and a relationship diagram drawn up as shown in Figure 5.2.

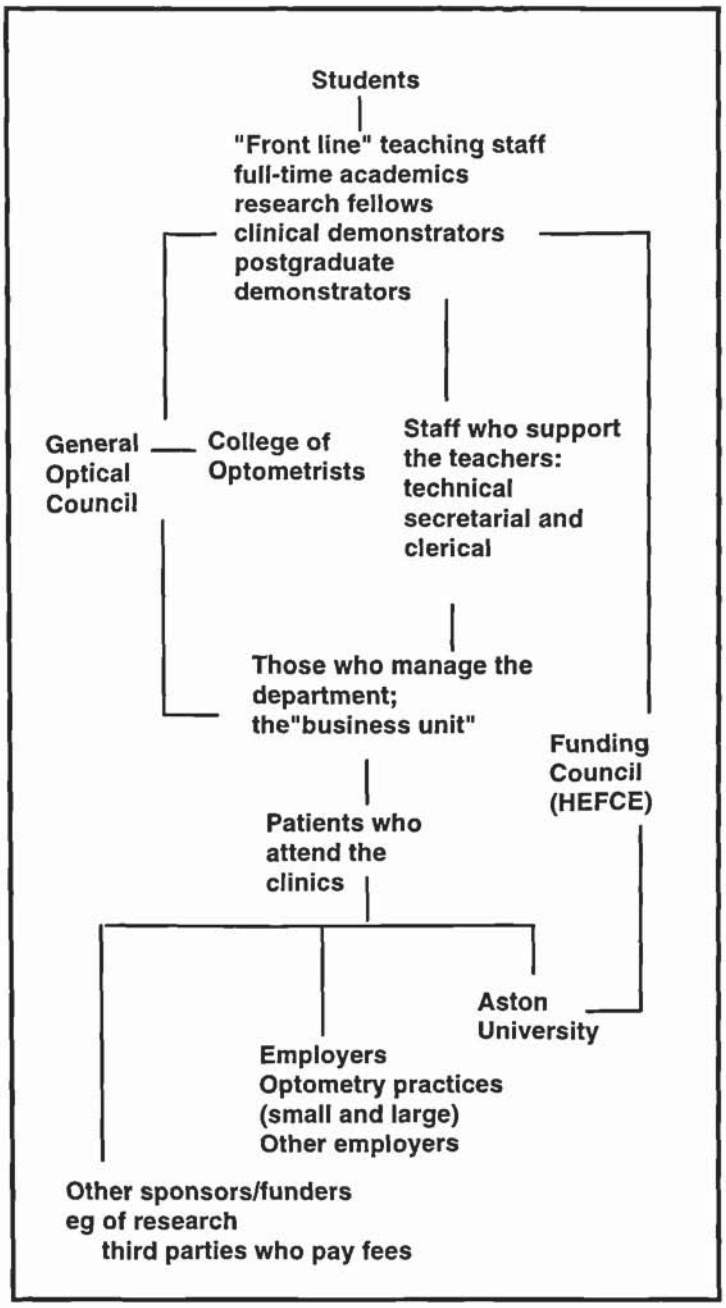

Figure 5.2
BSc Optometry Programme Customer/Stakeholder Relationships

5.2.4.2.1 The stakeholders to be included in the study

It was decided that it would be necessary to research the needs of all except the 'other sponsors/funders'. Examples of these are organisations which fund research, or third parties who pay fees (parents, for example). These were omitted from the survey because they were considered to be of secondary importance to the programme. There would also be practical

difficulties in collecting data from these groups, for example gaining access and the expense of data collection.

Thus the stakeholders to be investigated were:

- students
- staff of the department (including those who manage it as a 'business unit' within the university)
- the General Optical Council (the professional and regulatory body)
- the College of Optometrists
- HEFCE (representing the 'voice of the government')
- patients who attend the clinics
- employers.

5.3 General data collection options

The next step was to consider the possible data collection methods, which might vary between the different groups of stakeholders.

Moser and Kalton (1971) classify methods of obtaining data about a group of people into four main types:

- documentary sources
- observation
- questionnaires
- interviewing individuals.

Focus groups could also be added to this list.

The uses and advantages and disadvantages of each of these methods were considered before the final choices were made.

5.3.1 The use of documentary sources

Moser and Kalton (1971, p.240) warn not to "hurry into the field" without first consulting the necessary book and journal literature, past and present investigations of relevance, official reports and statistics, records of institutions and other documents.

Different types of documents can supplement data obtained by other data collection methods. As described by Sekaran (1964) unobtrusive methods of data collection such as extracting data from company records have the advantage of ensuring the accuracy of the information obtained. For instance, gathering information on the absenteeism of employees from company records will probably give more precise and reliable information than asking the respondents how many days they have been absent during the past year. Care must, however, be taken with these sources to ensure, for example, that population coverage is the same, that the same definitions have been employed, and that the data is sufficiently accurate and up-to-date. Moser and Kalton further caution on the use of sources giving information about "individual units of enquiry", for example case records which may have been collected for a different purpose and in which terms used may be only loosely defined, making comparisons difficult. Also access will probably be another difficulty as reassurances on the use of such data and on confidentiality will probably have been provided, or implied, when the data was collected. Allowances must also be made for the possibility of bias and subjectivity in the data which may have been introduced by the recorder.

5.3.2 Observation

Moser and Kalton (1971) state:

> Observation can fairly be called the classic method of scientific enquiry. The accumulated knowledge of biologists, physicists and other natural scientists is built upon centuries of systematic observation, much of it of phenomena in their natural surroundings rather than in the laboratory. (p.244).

While social scientists cannot help but be influenced in their choice of research problems and in their ideas and theories by what they see around them, observation as a systematic method of collecting data has its limitations. Unlike the natural scientist, the social investigator has to observe something of which he or she is a part, making it hard to achieve the same level of detachment that, for example, a biologist can have when observing the behaviour of animals.

In the context of social surveys, there are two broad types of observational methods: participant and direct or 'non-participant'.

a) Participant observation

This method involves the researcher fully participating in the life of the community that is the subject of his or her research in order to study it from the inside. The task is to gain an understanding, which is as true and unbiased as possible, of the activities of the community and the relationships between its members. It is a highly individual technique, the success of which is largely dependent on the skills and experience of the individual researcher as it requires total acceptance by the subjects of the study. Difficulties may arise from the very success of the absorption into the community as after a time it may become difficult to make detached observations, free from any bias of the community itself.

b) Direct, 'non-participant' observation

Direct observation by a researcher who does not join in the activities of the subject of research is used as a method of collecting information when the alternative method of asking people about their actions and beliefs and about the behaviour of others is not possible, or where the responses would be inaccurate. Moser and Kalton (1971) give some examples of when direct observation may be preferable to asking questions. These include when technical information is required from non-technical respondents, or when the study is of young children or others with limited ability to understand and respond to questioning on certain issues, or when answers may be dependent on the informant's memory and thus may be unreliable. Respondents may also deliberately distort the facts they provide in verbal responses. This danger can sometimes be avoided by the use of direct observation. Observation will also usually be a more reliable method of collecting data in the form of measurements of distances and times. The time needed for observation, however, can be a limitation of the method, possibly restricting its usefulness to small scale enquiries.

Non-participant observation can also be carried out by the researcher attending, but not taking part in, relevant events. The presence of an observer may, however, influence the behaviour of those being observed. Use has sometimes been made of unobtrusive recording devices in an attempt to overcome this difficulty but attention must be paid to the ethical issues of this.

5.3.3 Questionnaires

One-to-one interviews may not be practical, or may simply be too expensive, particularly if the population to be studied is large and/or geographically dispersed. An alternative in this case is to send a questionnaire. These are most commonly dispatched and returned by mail, but they may be delivered and collected by the researcher, or through other means according to what is practical and affordable. A major problem with questionnaires, however, is that they may yield low response rates, particularly if there is no personal incentive for respondents to take the time to complete and return the forms. Also questionnaires require a pre-determined set of questions, leading to simple answers. They cannot be used where the respondent is being asked difficult questions or where it is necessary to question the respondents closely and try to get them talking. Sending mail questionnaires is also an inflexible method in that, at least without considerable extra work and expense, there can be no follow-up to probe further into any ambiguous or interesting responses received. An advantage is that questionnaires achieve greater uniformity in the responses and permit statistical comparisons of responses.

5.3.4 Interviewing

As defined by Moser and Kalton (1971), a survey interview is a conversation between interviewer and respondent with the purpose of eliciting certain information from the respondent. Interviews could be conducted face-to-face or by telephone. The telephone has obvious advantages if there are difficulties associated with travelling to see interviewees, but a disadvantage

is that, without being able to observe body language, the exact nuances of some replies may be missed. It may also be more difficult for a less experienced interviewer to build the necessary rapport with the interviewee to gain full co-operation and openness.

Sekaran (1992) refers to possible errors or inaccuracies in the data collected. The interviewer could bias the data if proper trust and rapport are not established with the interviewee or when the responses are either misinterpreted or distorted, or when the interviewer unintentionally encourages or discourages certain types of responses through, for example, gestures and facial expressions. Interviewees can bias the data if trust and rapport are not established or if the answer the interviewee thinks is wanted is given rather than their true view, or if they do not understand the question.

As described by Martin and Voorhees (1978), interviewing techniques can fall theoretically along a continuum ranging from 'structured' to 'unstructured'.

A structured (or closed) technique is similar to the questionnaire in that it requires a pre-determined set of questions and pre-set responses. The same questions are asked of everybody in the same manner. Thus, also like the questionnaire, it tends to be restrictive and inflexible but permits statistical comparison.

An unstructured, open or "in-depth" technique is one in which the interviewee may respond to the interviewer's free-form questions in whatever way he or she chooses. Although, theoretically described as "unstructured", in practice the research objectives will most likely impose some structure and the researcher (who should be a skilled interviewer with prior knowledge of the discussion topic) may have a list of topic headings as an aide-mémoire during the interview. All the questions, however, are framed during the course of the interview and are developed from each respondent's answers to previous questions. Such interviews therefore provide a way of developing a better understanding of the underlying meanings of responses.

It is usually necessary for the interviewer to complete the post-interview analysis and interpretation since he or she best knows the purpose of asking particular questions, or of adopting a particular role during the interview. Such interviews tend to be time-consuming to conduct and record verbatim. They also tend not to be amenable to statistical analysis. The technique, which is labour-intensive, can be relatively expensive.

Semi-structured techniques come at the mid-point of the continuum. These involve the researcher asking open-ended questions from a pre-determined list. Responses may be probed further but only in a neutral way designed to keep the interview to schedule and to reduce the danger of introducing personal bias. The responses are recorded, as far as possible, verbatim and later analysed according to a broad categorisation of the commonest response areas. As with unstructured interviews, researchers will pay attention to key words and the type of language used by respondents. This is particularly important if the interview is a preliminary step in the design of a structured questionnaire.

5.3.5 Focus groups (discussion groups)

Structured and semi-structured techniques such as those described above can also be used with groups, commonly referred to as focus groups, or discussion groups. As described by Krueger (1994), focus groups as a data collection procedure have a narrow purpose for which they work particularly well - to provide insights into the perceptions, feelings and manner of thinking of consumers regarding products, services or opportunities. They are useful in obtaining information that would be difficult, if not impossible, to obtain using other methodological procedures. Their establishment provides an environment in which disclosures are encouraged and nurtured.

Focus groups are typically composed of 6-10 people, but can range from as few as 4 to as many as 12. As described by Krueger, they must be small enough for everyone to have the opportunity to share insights and yet large

enough to provide diversity of perceptions. When the group exceeds 12 there is a tendency for it to fragment. Participants may want to talk but are unable to do so because there is not a sufficient pause in the conversation.

The focus group can provide a more natural environment than that of an individual interview because, as in real life, participants are influencing and influenced by others. Results are solicited through open-ended questions and also from observations of respondents in a group discussion.

The researcher serves several functions in the focus group: moderating, listening, observing and eventually analysing. Analysis is conducted using an inductive process, i.e. the researcher derives understanding based on the discussion, as opposed to testing or confirming a preconceived hypothesis or theory.

Krueger describes the advantages of using a combination of qualitative and quantitative techniques for data collection within a research project:

> ... when used in this way, the focus group interview can help the researcher learn the vocabulary and discover the thinking patterns of the target audience. In addition, focus groups can provide clues as to special problems that might develop in the quantitative stage. For example, the questionnaire might have an illogical sequence of questions that confuses respondents, omits important choices or simply fails to ask critical questions. Qualitative procedures such as focus groups or individual interviews enable the researcher to get in tune with the respondent and discover how that person sees reality. These insights can then be used to develop more efficient follow-up quantitative procedures such as telephone or mail surveys. The quantitative studies then enable the researcher to make inferences about the larger population. (Krueger, 1994, p.29).

5.4 Chosen methodology

Taking into account the purpose of the research and the options available, a combination of qualitative and quantitative methods of data collection was incorporated into the final design.

Data collection methods were different for each of the categories of stakeholders. The reasons for this were both methodological and practical.

5.4.1 Students

Qualitative data was collected from students through discussion groups. Quantitative data was then collected by questionnaire. Following usual practice, (Martin and Voorhees Associates, 1978), qualitative research techniques were employed at the pre-survey stage. This served two purposes; first, to identify the range of attitudes which exists in the population under study, and second, to assist in designing the structured questions in ways which would mean something to the respondents, i.e. through using the same sort of wording and expressions which they themselves would use. This was considered to be important in avoiding the introduction of any bias reflecting the pre-conceptions or attitudes of the researcher designing the questionnaire. The questionnaire provided quantified evidence of the extent to which attitudes held by participants in the group interviews were shared by the larger population.

5.4.1.1 Group discussions with students

a) Background

Three discussion groups were held with students enrolled on each of the three years of Aston University's BSc Optometry programme. This formed the first part of the exercise to collect qualitative data about the needs of the various categories of stakeholders in the programme.

b) Purpose

The primary aim of the discussion groups was to help to identify items for the second stage of the study; the collection of quantitative data via a

questionnaire. The qualitative data collected was intended to give insight into enrolled students' expectations and perceptions of the three year BSc Optometry programme and the aspects of the service in the first, second and third years which have led to satisfaction or dissatisfaction - i.e. the students' view of quality.

(The groups were termed discussion groups as it was a readily-understood term when recruiting and working with volunteers. The techniques digressed slightly from the description "discussion group" in that the students were asked to write down some private thoughts as well as take part in the group discussion).

c) Recruiting the participants

The group sessions were held prior to end-of-year examinations to ensure that the groups had had the full experience of the year group they represented.

Attendance at the discussion groups was voluntary and a convenience sample of students was included. At the end of a timetabled lecture given to each group by the head of the department, the researcher, with the full co-operation of the head of the department, addressed the students. The purpose of the research was explained and students were asked to volunteer to participate in the discussion groups. Names were collected on the spot. Joining instructions were later sent to twelve individuals from years 1 and 2 (twelve being the maximum number recommended for an effective discussion group (Krueger, 1994). There were fewer volunteers from year 3 and joining instructions were only sent to ten of them. Some students, particularly third years, expressed reluctance to participate because of the proximity to end-of-year examinations. An attempt was made to ensure that there were male and female attendees but no other attempt was made to control the representation. To do so would have introduced further complexity into a system of selecting from small groups and might have

risked the chances of forming any group within the time available. Any resulting deficiencies or gaps in the data collected should have been remedied by the additional use of other data collection methods such as documentary sources.

Three groups (one from each year) met separately during May 1995.

d) Participant profile

The profile of the participants is given in Table 5.1. The totals for each group are less than 12 as not everyone who was sent joining instructions was able to attend on the day. As the Year 3 group was small, due to the imminence of final examinations, the exercise was repeated with a Year 3 group in March 1996. The participant profile for this group is given in Table 5.2.

Table 5.1
Undergraduate Participant Profile, Discussion Groups, May 1995

Years	First	Second	Third	Total
Male/Female	2/8	6/5	2/2	10/15
Aged under 25 years/over 25 years	9/1	10/1	2/2	21/4
Joined the programme in the same year as completing full-time schooling	7	8*	2	17*
Worked full-time for more than nine months before joining the programme	3	1*	2	6*
My home country is/is not the United Kingdom	8/2	11/0	3/1	22/3
I moved/did not move away from my home area to study at Aston	10/0	10/1	2/2	22/3
TOTAL	**10**	**11**	**4**	**25**

* Response to this question incomplete

Table 5.2
Undergraduate Participant Profile - Year 3 Discussion Group, March 1996

	Total
Male/Female	6/3
Aged under 25 years/over 25 years	7/2
Joined the programme in the same year as completing full-time schooling	5
Worked full-time for more than nine months before joining the programme	4
My home country is/is not the United Kingdom	9/0
I moved/did not move away from my home area to study at Aston	6/3
TOTAL	**9**

NOTE: None of the participants had taken part in the previous year's exercise.

e) Conducting the discussion groups

The agenda for the session (which lasted approximately 2.5 hours) was fully explained to the participants at the beginning, and they were told they could leave at any stage if they wished (although no-one from any of the events left before the end). The provision of a light lunch helped to introduce an informal atmosphere.

Participants were asked to consider the questions individually before discussion was opened to the group. This allowed private reflection before group influences came into play. A Pro Forma (Appendix A) was provided for written responses. A script (Appendix B) provided a common framework for the proceedings and the subsequent analysis of the information provided.

The core questions were:

1 What were your expectations of the undergraduate programme in optometry when you decided to come here? What were your hopes, what were your fears and what was the order of importance/priority?

2 What aspects of the programme helped you to function effectively in your role as a student?

What aspects of the programme did not help you to function effectively in your role as a student?

Any other issues of the quality of the programme/your level of satisfaction with it.

3 Ways in which the reality of the programme has not matched the expectations listed under question 1.

When the students had responded privately to question 2, they were asked to note from their responses to "what were the aspects which helped and which did not help?", which were the three items of most importance to them. The nominal group technique was then used to involve all the group in recording the responses on a flip chart, leaving out duplicates. The students were then asked to vote on the items generated by considering which three items they considered to be of key importance in developing quality education (satisfaction) with the BSc Optometry programme.

This exercise was then opened up to discussion which was audio recorded (with the participants' prior agreement).

f) Method of analysis

The Pro-Formas were collected and used in the analysis, as were the audio-taped proceedings and the flip charts which were used to record the agreed statements and voting results. Assurance on the anonymity of individual respondents was given.

The individually prepared, written answers to question 1, (about expectations of the programme when they first decided to come to Aston University's Vision Sciences department), were listed for each group according to 'hopes' and 'fears' and the priorities assigned by the students were noted. The 'hopes' and 'fears' were categorised by the "aspects" used by HEFCE assessors when they judge the quality of educational provision.

Appendix (C) gives the "Core Aspects of Provision" used from April 1995 by HEFCE as part of its method to assess the quality of educational provision, as described in Chapter 2. For the purpose of this analysis, the "key features" of each aspect listed by HEFCE have been given an alphabetic notation (also shown in Appendix C). The 'Hopes' and 'Fears' of each year were re-sorted by the HEFCE Aspects and their key features.

The topics were categorised into the HEFCE Aspects rather than according to any other classification or grouping because when 'affinity' grouping techniques were used, the topics discussed did fit under these headings and there seemed little to be gained from re-naming them.

g) Discussion group held with Third Year group - 8 March 1996

The method of data collection, sorting and analysis described for the 1995 Discussion Groups was repeated for the 1996 Third Year Group. The only exception was the 'voting' procedure described for the previous groups. The members of the later group, due to shortage of time, were asked to reach consensus on which four of the features recorded on the flip charts were most important to them.

5.4.1.2 Student survey

To confirm, complement and quantify the data collected from the discussion groups, a student survey was designed and piloted. The specific purpose of the survey was to collect quantitative data on the students' view of the quality of the educational provision; what were their expectations and perceptions of the quality of the programme?

a) Survey population

The survey population was all the students who were enrolled on the BSc Optometry programme during the academic year 1995/96. The student profile is shown in Table 5.3.

Table 5.3
Student profile during the academic year 1995/96

	YEAR 1	YEAR 2	YEAR 3	TOTAL
All students	**96**	**94**	**94**	**284**
Male	37	37	46	120
Female	59	57	48	164
Home	86	88	91	265
Overseas	9	6	3	18

b) The pilot student questionnaire

i) Questionnaire design

The design of the pilot questionnaire is based on the SERVQUAL instrument developed by Zeithaml, Parasuraman and Berry (1990). As described in Chapter 4, SERVQUAL is founded on the view that the customer's assessment of Service Quality is superior to all others. Specifically, service quality perceptions stem from how well a provider performs vis-a-vis customers' expectations about how the provider should perform. They have conceptualised the assessment as a gap between what the customer expects in terms of service quality from a category of providers, and their evaluation of the performance of a particular service provider.

They developed a 22-item instrument with which to measure customers' expectations and perceptions (E and P) of defined quality dimensions. Four or five numbered items are used to measure each dimension. The instrument is administered twice in different forms, first to measure expectations and second to measure perceptions.

Analysis of SERVQUAL data can be item-by-item (perception minus expectation), or dimension-by-dimension (the sum of the perception scores for a set of items minus the sum of the scores for the expectations of the same items).

Buttle (1996) provides a critique of SERVQUAL based on his own use of the instrument and also the comments of others but he puts his criticism into context: "Without question SERVQUAL has been widely applied and is highly valued. Any critique of SERVQUAL, therefore, must be seen within this broad context of strong endorsement". An operational criticism levelled by Bouman and van der Wiele (1992), cited by Buttle, is that respondents appear to be bored and sometimes confused by the two administrations of the instrument. According to Buttle this can imperil data quality.

Similar techniques/approaches had already been used to achieve similar purposes by the University of Central England for its student satisfaction surveys (Harvey and Knight, 1996) and also by the University of London Institute of Education Centre for Higher Education Studies (Centre for Higher Education Studies (CHES), 1994). Using similar techniques in this research would not only help to ensure a workable (tried and tested) means of collecting data but could also allow some comparison of the findings to test reliability and validity.

It should be noted that the approach used by CHES has an important distinction in that only one instrument is administered, thus addressing one of the issues about SERVQUAL raised by Buttle. This practice of administering only one questionnaire was followed in the design of the pilot survey for this research not only because of the issues raised by Buttle but also for practical reasons.

The help of departmental staff was required to contact students and, where necessary, to provide explanations further to the purpose statement and instructions provided with the forms. This was not only for practical ease but also because the involvement of departmental staff would help to endorse the importance of participation in the study. The use of one rather than two instruments simplified the process and it was considered that this might help to encourage the co-operation both of staff and students. The possible disadvantage of using one single survey form was obviously that there would be more questions on one form. This could lead respondents to perceive the form as complex and unacceptably time-consuming, resulting in low response rates. This would be tested through the pilot study.

ii) The questions

The questions were based on the data collected from the discussion groups, staff interviews and from the literature search. They were grouped into the sections based on the HEFCE Aspects used to group the comments from the discussion groups. The categories and number of questions in each were as follows:

Sections	Number of questions
1. Personal information	12*
2. Recruitment	07
3. Teaching and learning	20
4. The curriculum	23
5. Assessment, progression and achievement	16
6. Student support, guidance and learning resources	24
7. Quality assurance and enhancement	17
8. The environment and the culture	09
Total	116 (excluding personal information)
Space for free-form comments on the topic of the survey or on the survey itself	

* Two questions in this section (concerning previous work experience) had run together due to an undetected typing error and so were not used.

iii) Structure

Each section had two statements - A and B:

- Statement A was "To match my needs, I would expect an undergraduate optometry programme to:...".
- Statement B was "In the Aston BSc Optometry programme this feature is present/happens:.." for example:

Section 7: Quality assurance and enhancement

STATEMENT A	STATEMENT B
To match my needs, I would expect an undergraduate optometry programme to:	In the Aston BSc Optometry programme this feature is present/happens:

Feature		A Strongly disagree … Strongly agree	B Strongly disagree … Strongly agree
7.1	Regularly collect feedback on the programme from students	1 2 3 4 5 6 7	1 2 3 4 5 6 7
7.2	Ensure that feedback on the programme from students leads to improvements	1 2 3 4 5 6 7	1 2 3 4 5 6 7

As shown in the example, a seven point scale ranging from "strongly agree" to "strongly disagree", with no verbal labels for scale points two to six, accompanied each statement. Buttle refers to criticism of the use of seven-point Likert scales in SERVQUAL and other applications. SERVQUAL has been criticised for its lack of verbal labelling for points two to six as this may cause respondents to overuse the extreme ends of the scale. Labelling each point is suggested as a way to avoid this (Lewis, 1993). A further issue is the respondents' interpretation of the

meaning of the mid-point of the scale. It could be taken to be a "don't know, or a "do not feel strongly in either direction" response. Despite this criticism it was decided to adopt the seven point scale for the pilot survey on the grounds that it is used in SERVQUAL which is well-regarded and used by respected researchers. An attempt to address some of the potential ambiguities in responses was made by adding an instruction to respond "DK" to any question to which the answer was unknown.

Additionally respondents were asked at the end of each section to mark a box to indicate which of the "features" (each question provided a feature, for example, 'collecting feedback' and 'ensuring that feedback leads to improvements' are the 'features' in the two questions given in the example provided) in the section they considered to be the two most important and the two which they considered to be least important in meeting their needs (as a stakeholder in this programme).

A copy of the full pilot survey is given as Appendix D.

iv) The sample

The pilot sample was chosen by the head of department who selected every ninth name on the student list for each student year (i.e. ten names were selected from each year) This would result in 10 names from each year (approximately 10% of the population). The survey forms were given to the recipients personally by the Head of the Department in March 1996 with a request to return them directly to the researcher.

c) Revisions to the design of the instrument following an analysis of the pilot survey

i) General comments

Respondents had been given an A4 blank sheet at the end of the survey on which to record "further comments on the topic of the survey, or on the survey itself". Most of the 27 respondents used it to comment on the survey, although there were comments on the programme such as "should concentrate on teaching the subjects rather than lecturers engaging in personal research or research for the department"; "staff should be more chatty to students"; "should have less irrelevant work, more is gained from practical work". The comments echoed the views put forward by the participants in the discussion groups.

Particular attention was paid to the comments on the survey itself. Eleven respondents (41%) said or implied that the survey was too long. Six said it was difficult to answer some questions and some questions did not seem relevant (an example given was about staff awards and appraisal). One said the opening explanatory page was "hard to take in" and one said the layout was not easy to follow.

In the light of the analysis of the responses and the comments made, it seemed clear that some simplification should be considered. This could be achieved by:

- Reducing the number of questions
- Simplifying physical layout of the printed forms
- Providing more, or better, explanations, or re-wording some questions

ii) Reducing the number of questions

The number of questions was reduced by taking out questions about issues (most commonly staff issues) which most students could not be expected to comment on and to which "don't know" was a frequent response, and where the spread of "perception" responses indicated that respondents might be guessing. Sixteen features were eliminated on these grounds (2.2, 4.9, 4.21, 5.2, 6.21, 6.23, 7.1, 7.3, 7.4, 7.10, 7.11, 7.12, 7.14, 7.15, 7.16, 8.7).

Questions were also eliminated where computed correlations indicated that certain questions were redundant. The technique used is described by de Vaus (1986). If two questions measure virtually the same thing, clearly only one has to be included in the questionnaire. Redundant items were located by using Excel software to compute correlations between the scores given for "statement B" (perceptions). High correlations (0.8 or above) were used to judge whether two questions were associated with the same concept (i.e. respondents were answering them in a consistent way) and thus whether one should be dropped. Twenty-seven features were eliminated through this process.

The number of features included in each section in the final version was as follows:

Sections	Number of Features *
1 Personal information	15 (12)
2 Recruitment	06 (07)
3 Teaching and learning	14 (20)
4 The curriculum	15 (23)
5 Assessment, progression and achievement	09 (16)
6 Student support, guidance and learning resources	17 (24)
7 Quality assurance and enhancement	06 (17)
8 The environment and the culture	06 (09)
TOTAL	88 (128)
TOTAL LESS Personal Information	73 (116)
Space for free-form comments on the topic of the survey or on the survey itself	

*Number of features in pilot given in brackets

iii) Improving the physical layout of the form

The final questions at the end of each of the sections, which asked respondents to give the two features they considered to be most important in meeting their needs and the two features which were considered to be least important, were dropped as part of the re-design of the survey. This was in order to try to simplify the form, and also because some students had indicated in this section that all were important and expressed concern that if some features were marked as least important, they might be "trivialised", implying perhaps that they feared that these features might not be given sufficient attention in the future if they were recorded as "least important". The final and more important factor in deciding to leave out this section was that priorities could be listed by ranking the responses to Statement A (expectations) for each feature.

iv) Re-wording

Some features were re-worded to make the meaning clearer, for example, question 6.9 "Give help with foundation subjects only to those who are assessed as needing it" was changed to "Assess need for different levels of help with foundation subjects and provide it selectively".

The possibility of providing more, or better, explanations was to be addressed by the involvement of the Head of Department in distributing the questionnaires and personally supervising their completion.

v) Data from the repeated third year discussion group

As described in Section 5.4.1.1, the third year discussion group had been repeated. The analysis of data collected from this did not suggest any new features to be included.

d) Final form

A new survey form was designed. A copy is included as Appendix E.

e) Further considerations for the final survey

Although the form had been simplified, it was acknowledged that it was still possibly long and complex and not ideally suited to be a mail questionnaire. There was a possibility that treating it as such would lead to a low response rate (although the CHES survey (Centre for Higher Education Studies (CHES), 1994), for example, which had a similar structure and contained 119 questions, achieved a response rate of 56%). A further reduction in the number of questions would provide a shallower insight, although it might have a higher response. In discussion with the

head of department, this issue was solved as he agreed that it could be a group-administered questionnaire. He would allocate time at the end of one of his sessions with each full year group and ask them to complete the form under his direction. This would secure a high response rate (provided the sessions were well-attended) and would mean that he would be on hand to answer questions about the purpose of the survey and how to complete the form.

f) Problems with the distribution of the final questionnaire

In May 1996 the survey forms were prepared and delivered to the head of department but he was finally unable to administer them according to the plan. Instead they were sent in the university's internal mail system (one copy to every student), with a request to complete the forms according to the printed instructions and to return them direct to the researcher. This was a necessary action because it would probably not have been possible to draw the year groups together again as it was approaching examination time. If this opportunity during the third term had been missed it would have been necessary to wait almost another year until sets of students had completed each of the three years of the programme. Resorting to a mail questionnaire was preferable in the circumstances.

g) Final response rate and student participation profile

Table 5.4
Participation profile final student survey

	YEAR 1	YEAR 2	YEAR 3	TOTAL
Male/Female	7/21	19/26	10/13	36/60
Aged under/over 25 years	24/4	34/11	18/5	76/20
Joined the programme directly after school	20	30	12	62
Worked full-time for nine months prior to enrolling	6	12	8	26
Home/overseas student	24/4	44/1	23/0	91/5
Moved/did not move away from home to study	23/5	37/8	20/4	80/17
Total Number in sample	28	45	23	96
% of BSc Optometry student population	29.1%	47.8%	24.4%	**33.8%**

As show in Table 5.4, the final response rate was 33.8%. Because the administration had not gone to plan, follow-up letters could not be sent in an attempt to raise the response rate as there was no way of knowing who had responded and who had not. Moser and Kalton (1971) discuss non-response in mail surveys, stating that it has frequently been shown that response is correlated with interest in the subject of the survey. Filling in a questionnaire takes time and trouble and people are more likely to afford both if they are interested in its contents.

This could explain the relatively high response from second years as they may have felt that any improvements made to the programme as a result of the survey would be introduced in time to be of benefit to them. At least one of the third years commented that it was too late to help them. The third years were also in the revision period for their final examinations. This would almost certainly have influenced the response rate. Some first years said that they did not have enough experience of the programme to comment on all aspects. Moser and Kalton further state that to be of value the response rate must rise above 20 or 30%.

h) Method of data analysis

The basic data analysis comprised calculating the mean expectations and mean perceptions for each of the features in each of the categories and also calculating the difference.

5.4.2 Staff, including those who manage the department as a business unit within the university

Qualitative data was collected through one-to-one interviews. Group interviews would not have been practical because of the relatively small number of members of staff in each category (as described in Section 5.4.2.1, d) and because of the difficulty of finding a time when a sufficient number could meet for the purpose. It was also considered that staff might

feel more at ease discussing what could be sensitive departmental issues on an individual, confidential basis rather than as part of a group. The head of the department, who is solely responsible for the management of the department, was included in the same way as other staff members to help protect the confidentiality of views expressed.

Various documents were also used as sources of information. These included the transcripts of interviews with staff which had been prepared as part of a separate research project in the department, and departmental and faculty committee reports, including those of the staff-student consultative committee.

Quantitative data, as for students, was collected through the use of a questionnaire.

5.4.2.1 Staff interviews

a) Background

Face-to-face semi-structured individual interviews were held with members of staff representing the different categories of personnel within the Department of Vision Sciences. The interviews were held between July and October 1995.

b) Purpose

The qualitative data was collected to give insight into staff attitudes, perceptions and opinions of the quality of the provision of the three year BSc Optometry programme and the aspects of the provision which have led to satisfaction or dissatisfaction - i.e. the staff view of quality. A further aim of the interviews was to help identify items for the second stage of the study - the collection of quantitative data via a questionnaire.

c) Method

Participation in the interviews was voluntary. The head of department provided a list of the names of all members of staff from each of the categories employed in the department (this was not presented in any particular order). The first named person from each of the categories was first selected to be invited to participate but if this person was unavailable, the next person on the list was contacted instead. By working through the list, the aim was to interview 50% of staff from each of the categories. The categories are Full-time staff (academic), Research Fellows, Clinical Demonstrators, Postgraduate Demonstrators, Secretarial staff and Technical staff.

d) Staff Participant Profile

Staff Categories	No. interviewed	Total in Dept.
Academic	7	12
Research Fellows	2	5
Clinical demonstrators	2	2
Postgraduate demonstrators	3	6
Secretarial	3	7
Technical	5	10
Total	**22**	**42**

e) Data collection

The interview questions followed the same format as those for the students and all subsequent interviewees, i.e. focusing on expectations of the programme, expressed as hopes and fears, and aspects found to be helpful and unhelpful to them in carrying out their own work.

A script (Appendix F) provided a common framework for the proceedings and for the subsequent analysis of the responses. The questions were:

1. What is your role in the department and what is your association with the undergraduate programme in optometry?

2. What were your expectations of the department (and of the undergraduate programme in Optometry) when you decided to come here?

   a What were your hopes?
   b What were your fears?
   c Which of the above is the most important/significant factor to you? And the next?

3. What aspects of the department/programme help you to function effectively in your role as ...?

4. What aspects of the department/programme do not help, or prevent you from functioning effectively in your role?

5. Do you wish to raise any more general issues of the quality of the department/programme and your level of satisfaction with it?

6. Are you able to say which is the most significant/important for you?

7. At the beginning of the session, you said you had certain expectations of the department/programme, can you now please give any ways in which the reality has not matched these, and say whether in your opinion this is good or bad?

8. Those are all the questions I had. Do you want to add anything else, or comment on the interview?

f) Method of analysis

The interviews were audio-taped and the proceedings transcribed prior to analysis. Assurance on the anonymity of individual respondents was given.

Comments received in response to the questions were classified in two ways; first, by staff category and then, to be consistent with data collected from the students, by the HEFCE 'Aspects of provision' used by their assessors. Some comments, notably to do with research, did not fall naturally into the given headings and so an expanded list was created and used for the analysis. This "expanded list" of HEFCE Aspects is given in Appendix G.

5.4.2.2 Staff Survey

The purpose of the staff and student questionnaires was the same: to collect quantitative data on the perceptions of this particular group of stakeholders with respect to the quality of the programme.

a) Survey population

The survey population was all members of staff of the department of Vision Sciences in the third term of 1996. The staff categories and numbers are given in Table 5.5.

Table 5.5
Vision Sciences Department. Staff Categories and numbers in the third term of 1996

Staff Categories	Total in Dept.
Academic	12
Research Fellows	0
Clinical demonstrators	4
Postgraduate demonstrators	6
Secretarial	7
Technical	8
Total	**37**

b) The pilot staff questionnaire

i) Questionnaire design

The basic design of the student survey was retained in the staff survey. The section headings were retained to allow the staff and student responses to be compared more easily, although the term 'student' was added to some headings, e.g. 'student recruitment' to help avoid misunderstanding. The sections, however, were presented in a different order so that the questions that were of direct relevance to all members of staff came at the beginning.

ii) The questions

Some questions had been included in the pilot student survey but removed from the final survey (as described in Section 5.4.1.2) because they were targeted at staff. These were put back into the staff survey. Some questions from the student survey were removed because they were not applicable to staff. Appendix H provides a table which 'maps' the student questions against those for staff and lists the questions in each survey which are specific to its target population.

It was decided to give all questions to all categories of staff, rather than only give certain sections to certain categories, because it had become clear in the interviews that many different kinds of staff were involved in organising the programme and/or came into regular contact with the students. Some of the interviewees held strong views on the undergraduate programme even though they were not involved as teachers/tutors. It was decided that the advantage of being able to compare all categories of staff across features outweighed the disadvantage of members of one category being likely to find difficulty in giving views on some of the features.

The sections and number of features in each section were as follows:

Sections	Number of features*
1. Personal information	10 (15)
2. The environment and the culture	12 (06)
3. Quality assurance and enhancement	11 (06)
4. Student recruitment	05 (06)
5. Teaching and learning	10 (14)
6. The curriculum	13 (15)
7. Student assessment progression and achievement	05 (09)
8. Learning resources for staff and students, student support and guidance	19 (17)
Total	75 (73) Excluding personal information

*** Number of features in the student survey given in brackets**

iii) Structure

The structure of the questionnaire was the same as the student questionnaire, i.e., each section had two statements - A and B:

- Statement A was "To match my needs, I would expect an undergraduate optometry programme to:...".
- Statement B was "In the Aston BSc Optometry programme this feature is present/happens:..".

iv) Respondents to the pilot survey

The pilot survey was sent out in May 1996 by the Head of Department to ten of his colleagues. The aim of getting representation from each of the different categories of staff was achieved (there were at this time no Research Fellows in post as there had been at the time of the staff interviews).

c) The final staff survey

The version used for the pilot was used as the final version without modification because the respondents to the pilot survey had been able to follow the instructions and provided no negative comments or suggestions for changes to the survey. A copy of the staff questionnaire is provided as Appendix I.

The questionnaire was sent out, again via the head of department, on 16 July 1996 to every member of staff. Although some were returned to the researcher, as requested, by 5 August, some were returned only in late September. Staff changes made it difficult to get responses from secretarial staff and some forms were re-issued in November. The final response rate, as shown in Table 5.6, was 51%. Issues which may have negatively affected the response rate were that the questionnaire was long, and also staff who had taken part in the pilot may have been asked to complete the form twice.

Table 5.6
Respondents final staff survey

Staff Categories	No. respondent	Total in Dept.
Academic	7	12
Research Fellows	0	0
Clinical demonstrators	4	4
Postgraduate demonstrators	2	6
Technical	3	7
Secretarial	3	8
Total	19 (51%)	37

d) Profile of the respondents

Fourteen (74%) of the respondents taught on the BSc Optometry programme. There was a range of teaching experience: 3 of the respondents had over 20 years, 2 had over 10 years, 1 had less than one year, the remainder had between 2 and 5 years' teaching experience (not necessarily all at Aston).

e) Method of data analysis

Data analysis was carried out in the same way as for the student survey, i.e. the mean expectations and mean perception scores for each of the features in each of the categories, and the differences were computed. Because of the small numbers of respondents in each of the staff categories (as shown in Table 5.5), the data was grouped for the purpose of analysis into 3 staff categories:

- Academic and Research Fellows
- Clinical and postgraduate demonstrators
- Technical and Secretarial

5.4.3 Other stakeholders

5.4.3.1 Aston University Management, HEFCE, the General Optical Council and the College of Optometrists

a) Background

Face-to face semi-structured interviews (using the same script as for the departmental staff (Appendix F)) were held with representatives from Aston University Management, HEFCE, the General Optical Council and The College of Optometrists. The representatives were as follows:

- Aston University Management: the Senior Pro-Vice-Chancellor and Secretary-Registrar
- HEFCE: The Director of Quality Assessment
- General Optical Council : the Chief Executive and Registrar
- College of Optometrists: the Secretary.

b) Data collection

There was only one representative in each case (except university management where there were two), and so there was no additional exercise to collect quantitative data. While this could have posed limitations on the validity of the data, it was considered that this was unlikely to be a major factor as the interviewees were very senior level representatives of organisations which had published their position on the substantive topics of the research. The interviews served to improve the researcher's understanding of the issues from the perspective of the interviewees and to ensure the currency of data recorded.

c) Method of analysis

Each interview was audio recorded with the consent of participants. Full transcripts were made and the data categorised into the 'expanded list of HEFCE Aspects' used for the analysis of the staff interviews (Appendix G).

5.4.3.2 Employers

a) Interviews

Qualitative data was collected through face-to-face semi-structured interviews held with nine employers between 20 September 1996 and 19 March 1997. Each person interviewed was directly responsible for recruiting graduates into his or her organisation. The organisations were chosen, with the help of the Head of the Department of Vision Sciences, to represent the

general optical service and the hospital eye service and came from multiple and independent practices, individual franchises and hospitals. The organisations are listed in Appendix J.

The semi-structured interviews followed the script used for the interviews with staff and other stakeholders (Appendix D).

b) Method of analysis

The interviews were audio-recorded with the interviewees' permission. Full text transcripts were made. The data was categorised according to the 'Expanded list of HEFCE Aspects' (Appendix G).

c) Survey

At the time of the their interview, employers were asked additionally to complete one section of the questionnaire survey used for staff in the Department of Vision Sciences (Appendix I) and previously described. This was Section 6 - the curriculum. They were asked to complete the sheet at their convenience - either at the time of the interview visit, or to return it to the researcher at a later date. Two of the interviewees additionally asked colleagues holding other franchises within their organisations to complete the survey. This resulted in 13 returns that were analysed in the same way as the staff and student surveys, i.e. mean expectation and mean perception scores, and the differences, were computed.

5.4.3.3 Patients who attend the clinics

Qualitative data was collected through the use of a specially designed, structured interview, the purpose of which was given as "to find out more about the wants and needs of those who use the clinics, in order to improve the service". A pro-forma questionnaire was used to ensure that all interviewees were asked the same questions. (Appendix K). An "ethical" statement was also made available to each participant (Appendix L).

The interviews were conducted at different times on three days of the same week (Tuesday 4, Thursday 6 and Friday 7 March 1997). Some patients who had attended the clinic on previous occasions were interviewed before they had their eye test, others were interviewed directly the test was finished.

An estimate, which proved to be accurate, was made that between 5-7 interviews could be held at each session. A target of 20 interviews was set for the week (approximately one third of the average number of patients seen in a week). The number of interviews was to be increased if the data provided by individual interviewees was sufficiently varied.

a) Participant profile

Of the total 20 patients interviewed, 7 had attended the clinic once before, 3 had attended twice, 3 had attended three times, 1 had attended four times, 1 six times and 3 had been 10 or more times. Two were attending for the first time.

Of those who had attended the clinic before, 4 had attended less than one year ago, 8 had attended one year ago, 3 two years ago and the remainder four or more years ago (some were unable to say exactly when was the last time).

b) Method of analysis

It was decided that 20 respondents was sufficient because of the similarity of the data collected. It was unlikely that interviewing more patients would have led to the collection of significantly different data. The responses were grouped into "affinities", i.e. similar topics were grouped together and assigned headings The primary headings used to categorise the responses were:

1. Skills and knowledge
2. Currency/up-to-dateness

3. Attitude/patient care
4. Administration/environment
5. Value for money
6. Reputation/recommendation
7. Other.

There was no obvious correspondence with the HEFCE "Aspects" and so no attempt was made to used these for the purpose of categorising this data.

5.5 Postscript on research method

The research design and method, on the whole, worked well and achieved the purpose of providing insight into stakeholders' various expectations and perceptions of the BSc Optometry programme and the aspects of it which have led to satisfaction or dissatisfaction, i.e. the view of quality from the "cast of characters". Some aspects of the method, however, could have been improved, particularly as they affected the response rates to the questionnaires.

The response rate for the student questionnaire was low, although it still complied with Moser and Kalton's suggestion that, to be usable, the response rate must rise above 20 or 30%. The option to have the head of department supervise the completion of the surveys following a lecture period was clearly an ideal choice which should have led to a high response rate. In future, if choosing this approach, a contingency plan should be built into the design to allow for the event, which did occur, when the original plan had to change at the last minute and the questionnaires were sent out in the post. The contingency could be, for example, the inclusion of a code that would allow the identification of non-respondents so that reminders could be sent.

The low response rate for staff may have been due to the length of the survey and to the fact that 24% of the staff had already completed the pilot

that turned out to be identical to the final survey. If the exercise was repeated in a department of similar size, fewer people should be asked to take part in the pilot. Also, at the time, the decision to ask all staff to complete all sections seemed the right one because the interviews had indicated that most support staff had a good knowledge of the BSc programme and had had regular contact with students for a considerable length of time (twelve months or more), and were keen to express their views. By the time the questionnaires were sent out, however, the situation had changed and several new staff had replaced longer serving members, particularly of the secretarial staff. With hindsight, it may have been preferable to have asked staff who do not play a direct role in teaching undergraduates to respond only to the sections they could reasonably be expected to have an informed view on.

There was also concern on the part of the researcher that the interviews and discussion groups might lead primarily to data of a 'snapshot' nature, i.e. it would reflect current concerns which may only be temporary features of life in the department. In the event, this was probably not a major issue because of the variety of data sources and the length of time it took to complete all stages of the data collection.

The combination of collecting qualitative and quantitative data worked well. The qualitative data successfully identified a wide range of criteria and concepts that each of the groups and/or individuals associated with the quality of the BSc Optometry programme. The use of the questionnaires served to triangulate the data collected from the participants in the discussion groups and interviews and allowed the data to be quantified in terms of which expectations were most important to the respondents, and in terms of any perceived gap between expectations and perceptions. It is important to note, however, that the scores have little absolute meaning; they reflect perceptions and as such their value is mainly as relative indicators of items which respondents think are important and where they think the deficiencies are.

The results of the analysis of the qualitative and quantitative data collected for each of the groups of stakeholders (students, staff and others) are given in Chapters 6, 7 and 8 respectively.

Chapter 6

The Voice of the Student

6.1 Introduction

This chapter and the two which follow, present the results of the fieldwork undertaken to help test the research hypothesis that:

an understanding of quality in higher education, in the TQM sense, that is, set in the context of 'fitness for purpose' and 'meeting the agreed needs of customers', would provide:

- a means of addressing and reconciling the needs of higher education stakeholders
- the basis of a shared understanding of quality in higher education and how it can be measured, assessed and improved
- a method to bring about improvements in educational and managerial practice.

The purpose of the fieldwork was, following TQM practice, to gain insight into stakeholders' attitudes, perceptions and opinions regarding the quality of the programme's provision of undergraduate education. In other words, what are the expectations and needs of the stakeholders, and to what extent do they perceive that they are being met? This was the first step in testing whether TQM could provide a means of addressing and reconciling the needs of higher education stakeholders.

Stakeholders were defined in Chapter 5 as "all those who have an interest in the success of the programme and need or require something from it". For the purposes of the fieldwork, the stakeholders of the BSc Optometry programme were identified as:

- Students
- Staff of the department (including those who manage it)
- Aston University management
- The General Optical Council (GOC)

- The College of Optometrists
- HEFCE
- Employers
- Patients who attend the clinic.

This chapter contains the results of the exercises which were designed to collect the required data from students, following the data collection methodology described in Chapter 5, Section 5.4.1. Analysis and interpretation of the data is provided in Chapter 9.

6.2 Results of the student discussion groups

6.2.1 Hopes and fears

The student's expectations of the programme when they joined it, expressed as 'hopes' and 'fears', are given for the Year 1, 2 and 3 Discussion Groups in Tables 6.1, 6.2 and 6.3 on pages 185-187, 188-190 and 191-194 respectively. Table 6.3 gives the results of the Year 3 groups which met in 1995 and 1996. The priority the students assigned to each item is given (1 is the highest priority), and the comments are categorised according to the list of 'HEFCE Aspects' (Appendix C).

Table 6.1
Student Discussion Groups: *Expectations expressed as 'Hopes' and 'Fears' of Year 1 students, and their priorities, categorised by HEFCE Aspect*

YEAR 1

Aspect Code	HOPES	Priority	Aspect Code	FEARS	Priority
Curriculum design, content and organisation 1					
1C	Studying an interesting course	1	1A	Finding that I wished I had done another course	1
1A	Taking a course involving the sciences but also people	1	1C	Taking a vocational course with the possibility of not liking the job at the end	1
1A	A lot more mathematical and physical theory	2	1C	Was the course the right one for me? Wanted to do medicine, optometry unknown	1
1A	A well-structured, clinically-based degree programme	2	1A	Not a well-structured, clinically-based degree programme	2=
1B	Finishing with a fully-qualified degree	2	1A	Whether the course was the right one for me and whether I would enjoy it	2
1C	A good degree with excellent employment prospects	2			
1A	A lot of work already covered at A Level	3			
1A	Involve a lot of clinical work	3			
1A	More intense study in the subjects	4			
1C	High research rating to reflect on teaching quality and possibility for postgraduate work	4			
1C	A good degree and a good job at the end	4			
	TOTAL NUMBER OF COMMENTS = 11			**TOTAL NUMBER OF COMMENTS = 5**	

Table 6.1 continued

Aspect Code	HOPES	Priority	Aspect Code	FEARS	Priority
Teaching, Learning, Assessment 2					
2A	Plenty of practical experience	1=	2A	Large teaching groups. Insufficient time for single student problems	1=
2A	Good communication between staff and students in lectures	1	2A	Left to manage on my own	1=
2C	Plenty of "hands on" experience of equipment	1	2C	Theory not put into practice	1
2C	Course fairly easy to get along with- lots of books to help you teach yourself	1	2A	Not enough time spent on some parts of course	2
2A	Individual attention given during practicals	2			
2C	Easy to find out from sources other than lecturer about areas not completely clear	2			
2A	Doing things in a practical manner	3			
2A	Lectures would be coherent to me	3			
2A	Broken in gently and not expected to understand everything	4			
2A	More chance to discuss the course with lecturers	5			
	TOTAL NUMBER OF COMMENTS = 10			**TOTAL NUMBER OF COMMENTS = 4**	
Student progression and achievement 3					
	TOTAL NUMBER OF COMMENTS = 0			**TOTAL NUMBER OF COMMENTS = 0**	
Student support and guidance 4					
4A	To succeed in first year to carry on to next	1	4A	The course would be difficult	1
4A	Course within my capabilities	1	4A	Failure	1
4C	More individual attention, e.g. tutorials	1	4C	As an overseas student, fear of everything being different	1
4A	Staff available and approachable to deal with problems	2	4D	To have an A Level standard in a subject not taken, e.g. maths	1
4A	Treated as individual, known by person teaching you	2	4A	Physics side of the course was daunting	2
4A	Lecturers would be approachable if there were difficulties with work	2	4A	Nobody to ask for help	2
4C	Student-personal relationship - regular meetings	2	4A	Constant confusion	2

Table 6.1 continued

Aspect Code	HOPES	Priority	Aspect Code	FEARS	Priority
4A	Wide variety of students - all ages and races	3	4A	Not being able to compete with other students	2
4A	Help available if needed	3	4A	Not fitting in with 18-19 year olds	2=
4A	Help if I got stuck	3	4C	Left without guidance during the course (no monitoring of progress)	2
4D	Find physics easy to handle without A level	3	4D	No additional help with maths and physics	2
4C	Small group tutorials to give extra help with some of the theory taught in lectures	4	4D	Not understanding concepts on the course	2
4C	Adequate tutorial time	4	4A	Lack of help - unapproachable lecturers	3
4C	More small group classes	4	4A	Not a wide variety of students of all ages and races	3
			4A	Physics too advanced	3
			4A	Unable to cope with work and do practicals	3
			4A	Failure	4
			4A	Course full of clever physicists	4
	TOTAL NUMBER OF COMMENTS = 14			**TOTAL NUMBER OF COMMENTS = 18**	
Learning resources 5					
5C	Modern equipment for practicals	1=			
5A	Good study facilities	2			
	TOTAL NUMBER OF COMMENTS = 2			**TOTAL NUMBER OF COMMENTS = 0**	
Quality assurance and enhancement 6					
6A	Highest quality optometry education, as per discussions with overseas optometrists	1			
	TOTAL NUMBER OF COMMENTS = 1			**TOTAL NUMBER OF COMMENTS = 0**	

Table 6.2
Student Discussion Groups: *Expectations expressed as 'Hopes' and 'Fears' of Year 2 students, and their priorities, categorised by HEFCE Aspect*

YEAR 2

Aspect Code	HOPES	Priority	Aspect code	FEARS	Priority
Curriculum Design, content and organisation 1					
1B	To become qualified in the field	1=	1C	Discovering the course is not for me	1
1B	Being able to get a job after finishing	1=	1A	Letting the public down when qualified	3
1B	To qualify as an ophthalmic optician	1	1C	Discovering I did not enjoy the course and therefore the job I had intended to do	3
1B	Obtain a degree	1			
1B	Success	1=			
1B	Get a good degree	1			
1C	Character-building experience	1			
1C	To learn to be a good optician	1			
1C	To be a good optician	1=			
1C	Getting a job	1			
1B	Become qualified to do a job that finished at 5.00pm	2			
1B	Have independence and responsibility for own actions	2			
1C	Professional training	2=			
1C	Develop as a person with confidence and personality	2			
1C	Enjoy university and the course	2			
1C	Vocational course	4			
1C	Good grounding for a career	4			
	TOTAL NUMBER OF COMMENTS = 17			**TOTAL NUMBER OF COMMENTS = 3**	
Teaching, Learning, Assessment 2					
2A	Start on a well-taught course in optometry	1	2A	Indifferent lectures	1
2A	Good tuition	1	2A	Pressure of work/examinations	2
2A	Confidence about what learned	1=	2A	"Usual" lecturing standards (experience from previous degree)	2
2A	Consistent teaching styles and approachability	2	2A	Poorly organised lectures	2

Table 6.2 continued

Aspect Code	HOPES	Priority	Aspect code	FEARS	Priority
2A	Preparation for examinations	2=	2B	Workload would be too much	2
2A	Enthusiasm of lecturers	2	2B	Unknown work load	2
2A	Good tuition - experienced, helpful lecturers	3	2A	Lectures different from school lessons, e.g. note-taking	4
2A	Good level of supervision and teaching in all aspects of the course	3	2B	Workload	4
2A	To feel continuously motivated and interested in the course	4	2B	Too much work	4
2B	Reasonable workload	4	2A	What is expected of you being unclear	5
2B	Stimulating, well-organised programme	4	2A	Lecturers would be incomprehensible (talk over my head, or too fast)	5
2A	Clear goals	5	2A	Not enough incentive to get me working	5
			2A	Method of teaching would make it difficult for me to keep up/ understand	6
	TOTAL NUMBER OF COMMENTS = 12			**TOTAL NUMBER OF COMMENTS = 13**	
Student progression and achievement 3					
	TOTAL NUMBER OF COMMENTS = 0			**TOTAL NUMBER OF COMMENTS = 0**	
Student support and guidance 4					
4A	That I was capable of taking the course and that it would be as interesting as expected	1	4A	Whether I would be capable of doing the course	1
4A	Meet people with similar aims	2	4A	That I would not understand some of the subjects	1
4A	Have fun	2	4A	University life would not suit me	1
4A	Enjoy student life in Birmingham	2	4A	Unable to cope with the course	1
4A	That others on the course would be nice	3	4A	Finding it too difficult	1
4A	Meet new people and make friends	3	4A	Failure	1
4A	Lecturers would be approachable (similar to school teachers)	3	4A	Failure	1

Table 6.2 continued

Aspect Code	HOPES	Priority	Aspect code	FEARS	Priority
4A	Make a lot of friends	3	4A	Failure	1
4A	Get on well with others on course	4	4A	Finance	1
4A	Meet like-minded people	4	4A	Not fitting in	2
4A	Time away from home	4	4A	Finding the course too difficult	2
4A	Not to be anonymous in the department	5	4A	That university life would not be as expected	2
4A	Excel	5	4A	Competition	2
4A	Meet different cultures and people with different experiences	5	4A	Finance	2
4A	Meet people from diverse backgrounds	6	4A	Not enjoy the course of not make friends	3
4A	Friendly, helpful staff	6	4A	Being off campus	3
			4A	Not enjoying it as much as 6th Form	3
			4A	Fear of leaving home	3
			4A	Would not get on with anyone	3
			4A	Not finding staff friendly and approachable	4
			4A	Not getting on with people	4
			4A	Having worked so hard to get here, would it be a success?	4
			4A	Being "mature"	4
			4A	Finding too many other distractions at university	5
	TOTAL NUMBER OF COMMENTS = 16			**TOTAL NUMBER OF COMMENTS = 24**	
Learning resources 5					
5A	Good facilities	3			
5C	Clinical facilities	3			
	TOTAL NUMBER OF COMMENTS = 2			**TOTAL NUMBER OF COMMENTS = 0**	
Quality Assurance and enhancement 6					
6E	Up-to-date-department	6			
6E	To attend one of the better optometry departments	3			
6E	Up-to-date-department	6			
	TOTAL NUMBER OF COMMENTS = 3			**TOTAL NUMBER OF COMMENTS = 0**	

Table 6.3
Student Discussion Groups: *Expectations expressed as 'Hopes' and 'Fears' of Year 3 students, and their priorities, categorised by HEFCE Aspect*

YEAR 3

Aspect Code	HOPES Note: ** = From 1996 Year 3 group	Priority	Aspect code	FEARS Note: ** = From 1996 Year 3 group	Priority
Curriculum Design, content and organisation 1					
1B	Convert to a good optometrist from a dispensing optician	1=	1C	Not being able To do the job I am being trained for	1
1B	Feeling of satisfaction that this IS the career for me	1	1C	Finding I did not want to do optometry**	2
1C	Gain adequate professional knowledge and confidence to practice	1	1C	That the bottom might fall out of the options I was studying**	2
1B	Exemption from Part 1 of PQEs**	1	1C	Very "academic" approach unrelated to real life**	2
1B	Passing!!**	1	1C	Too much time spent of "foundations' of optometry, not "real" optometry	3
1B	Enable first time pass in PQEs**	1			
1B	Get a good degree that I could be proud of**	1			
1B	Trained to be a well-rounded, qualified, optometrist with clinical and practical skills**	1			
1B	Reach standard necessary to pass PQEs**	1			
1C	Have a good practical knowledge**	1			
1C	Gain a wide, practical knowledge	2			
1C	Obtain a high enough education to be confident out in "the world"	2			
1B	Obtain a BSc in Optometry	2			

Table 6.3 continued

Aspect Code	HOPES Note: ** = From 1996 Year 3 group	Priority	Aspect code	FEARS Note: ** = From 1996 Year 3 group	Priority
1B	Being sure I was doing the right course for me**	2			
1B	Furthering knowledge to level to obtain a good degree**	2			
1C	Develop patient-handling expertise**	2			
1C	Grow skills and confidence**	2			
1B	Be a good optician	3			
1C	Develop good clinical techniques**	3			
1A	More interesting than my last degree/current job**	3			
1C	Course being an extension of studies to date	4			
1B	Doing well in the course**	4			
1B	Hurry up and qualify**	4			
1A	Develop good understanding of visual system**	4			
1A	Have a broad range of knowledge**	5			
1A	Find out what optometry is about**	5			
	TOTAL NUMBER OF COMMENTS = 26			**TOTAL NUMBER OF COMMENTS = 5**	
Teaching, Learning, Assessment 2					
2A	Be taught by best lecturers**	1	2A	That it might be intensely boring**	1
2A	Finding the course interesting and stimulating	2	2A	Finding the course dull, unstimulating	1
2A	Interesting and fun learning environment**	2	2A	Coaching not sufficient compared with school environment**	2
			2C	Not being adequately prepared for the "real world"	3
2A	Enjoying the course**	3			
2A	Course presented in an interesting way**	3			
2C	To gain clinical experience**	3			

Table 6.3 continued

Aspect Code	HOPES Note: ** = From 1996 Year 3 group	Priority	Aspect code	FEARS Note: ** = From 1996 Year 3 group	Priority
2C	To have experience with the general public**	4			
2C	Extensive clinical experience in all aspects of optometry**	5			
	TOTAL NUMBER OF COMMENTS = 8			**TOTAL NUMBER OF COMMENTS = 4**	
Student progression and achievement 3					
	TOTAL NUMBER OF COMMENTS = 0			**TOTAL NUMBER OF COMMENTS = 0**	
Student support and guidance 4					
4A	Getting on well with fellow students and lecturers	3	4A	Coping with Year 2 and 3 academic work	2
4A	Meet colleagues/friends with similar aspirations**	3	4A	Not getting a high qualification	3
			4A	Failing**	1
			4A	Failure**	1
			4A	Failure**	1
			4A	Lack of practical experience	1
			4A	That I'd fail a year	1
			4A	Not reaching standard to pass PQEs	1
			4A	That I could not handle physics or maths without an A Level	1
			4A	Failing degree**	2
			4A	Would be disadvantaged by lack of experience**	2
			4A	Would not know enough to go into pre-registration**	2
			4A	Coping with Year 2 and 3 academic work	2
			4A	No-one I'd be able to ask about problems**	2
			4A	It might be difficult to approach lecturers for help with work**	2
			4A	Not getting a high qualification	3

Table 6.3 continued

Aspect Code	HOPES Note: ** = From 1996 Year 3 group	Priority	Aspect code	FEARS Note: ** = From 1996 Year 3 group	Priority
			4A	Not getting on with other students/staff	3
			4A	Being left behind by brighter, younger students	4
	TOTAL NUMBER OF COMMENTS = 2			**TOTAL NUMBER OF COMMENTS = 18**	
Learning resources 5					
5C	Have access to computers in the department**	6			
5	**TOTAL NUMBER OF COMMENTS = 1**			**TOTAL NUMBER OF COMMENTS = 0**	
Quality assurance and enhancement 6					
6A	A good department	1=			
6A	A good department	1=			
6A	Come to one of the best universities**	2			
6A	By word of mouth Aston was a good optometry department**	5			
6A	Being able to say "I'm an Aston student" and not being laughed at**	6			
	TOTAL NUMBER OF COMMENTS = 5			**TOTAL NUMBER OF COMMENTS = 0**	

Year 1

The majority of 'hopes' and 'fears' fall within Aspects 1, 2 and 4: Curriculum design, content and organization; Teaching, learning and assessment, and Student support and guidance. That is, they are largely concerned with issues at the personal and programme level rather than at the institutional level.

Of all the comments on 'hopes' and 'fears', 49% fall within Aspect 4 - Student support and guidance, 25% fall within Aspect 1 and 21% within Aspect 2. There are no comments within Aspect 3 - Student progression and achievement - which covers annual progression and failure rates. The 'priorities' are fairly evenly shared between the three Aspects. Although Aspects 5 and 6 (Learning resources, and Quality assurance and enhancement) only have a total of three comments between them, each of the three has been given a priority of one or two, so these categories should not be overlooked.

The 'hopes' and 'fears' mentioned within Aspect 1 are largely concerned with the content and structure of the programme (9 of the total 16 comments are categorised as 1A). Seven comments directly refer to the employment prospects on completion of the course, and to the professional and clinical nature of the programme. Most of the others reflect the wish to follow a programme which is interesting and enjoyable. One comment refers to the potential for post graduate study.

Of the 14 'hopes' and 'fears' recorded within Aspect 2, 10 are categorized as 2A (strategy/methods for teaching, learning and assessment). The comments are concerned with how students as individuals are helped to understand what they are being taught, particularly the practical aspects of the course. The hopes and fears recorded under Aspect 4 are almost equal in number and are closely related to Aspect 2 in that they reflect the students' desire for personal attention and help from tutors. Of the total of 32 comments 21 are categorized as 4A (the overall strategy for student support and guidance). In terms of "fears", there is concern about being able to cope with foundation subjects, notably mathematics and physics, if students have not already studied these to A Level.

Year 2

The majority of 'hopes' and 'fears' again fall within Aspects 1, 2 and 4. Of all comments, 44% fall within Aspect 4 (Student support and guidance), 28% within Aspect 2 and 22% within Aspect 1. There are no comments within Aspect 3. Of the total comments, 5% fall within Aspects 5 and 6, and of these none have been given a priority higher than 3. Two of the total five comments had a priority of six and so may be considered relatively unimportant to the students taking part in this discussion group.

Almost half of the 'hopes' recorded under Aspect 1 indicate that at the end of the course the students want to be qualified to do a specific job (optometry is not always mentioned), the rest indicate the wish to have had a worthwhile experience and to have achieved personal development and/or to have got a degree. Only 3 of the total 20 comments in this area are 'fears'. These are expressed as fear of not enjoying the course, and of "letting the public down" when qualified. The priorities for comments within Aspect 1 are high (one, two or three in all except two instances).

The comments which fall within Aspect 2 are almost evenly divided between 'hopes' and 'fears' and there is a range of priorities. As with the Year 1 group, most of the 'hopes' are categorised as 2A (strategy/methods for teaching, learning and assessment). The comments from the Year 2 group, however, are more analytical than those of the first years in that they tend to mention more often the characteristics of the methods and strategy which they find helpful or otherwise, and they say how they want to feel as a result of the help, rather than just saying that they want someone to be on hand. The Year 2 students expect to have enthusiastic, experienced staff who will offer well-structured and planned courses which will motivate and enthuse them. An often expressed 'fear' is having a workload which is too heavy.

The comments recorded for Year 2 students in Aspect 4 are also of a slightly different nature from those recorded for Year 1 students. All the comments are included under 4A - the overall strategy for support and guidance. There are no specific comments about remedial help in particular subjects, and relatively few specific comments about individual, general help from staff. Instead the 'hopes' are more concerned with the support provided from within the social community of the university. The expectation of meeting like-

minded people, making new friends and enjoying university life are predominant 'hopes'. 'Fears' are often the reverse, i.e. of "not fitting in". The broad fear of 'failure' is also mentioned several times, and as a high priority.

Year 3

As with the Year 1 and Year 2 groups, the majority of comments fall within Aspects 1, 2 and 4. This time, however, the largest number of comments fall within Aspect 1 (45% of all comments are listed here). The next largest group of comments is within Aspect 4 (29%), followed by Aspect 2 which has 17% of the total number of comments. There is one comment under Aspect 5 (Learning Resources), which has a low priority of 6. Aspect 6 (Quality assurance and enhancement) has five comments listed as 'hopes', three of which have been given a priority of one or two. All the comments within Aspect 6 are to do with the reputation and standard of the department or the university.

Of the 31 comments listed under Aspect 1, 26 are 'hopes'. A range of priorities has been assigned but the majority have a priority of three or more. The hopes are largely concerned with the direct consequences for a future career in optometry. They hope they have the required level of skills, particularly the practical skills needed for the Professional Qualifying Examinations (PQEs). The 'fears' that are mentioned under Aspect 1 are focused on the "optometry" aspects of the programme, and all are given priorities of one, two or three. There are still fears that they might be moving towards a career they are not suited to, or would not enjoy. There are also 'fears' that the programme might be too oriented to academic rather than practical, professional issues.

The majority of the comments (18 out of 20) listed under Aspect 4 are 'fears', and are almost all to do with the fear of failing or not getting a high qualification. The two 'hopes' listed are similar to the majority of the Year 2 comments, i.e. a concern to get on well with other students and staff.

The comments listed under Aspect 2 (Teaching, learning and assessment) express hopes that the course will be interesting, stimulating and fun, and taught by "the best lecturers". The hope to gain clinical experience is also mentioned, but is not given as high a priority as the need for an interesting

course. The 'fears' are to do with boredom, not being prepared for the "real world" and receiving insufficient coaching compared with school.

General comments on the responses

The comments show a degree of consistency within and between the Year Groups in that they all focus on Aspects 1, 2 and 4 (Curriculum design, content and organization; Teaching, learning and assessment; and Student support and guidance), i.e. they are largely concerned with issues at the personal and programme level rather than at the institutional level. In summary, students want to do well at university, to enjoy themselves and to receive a high level of personal help from tutors to get them through the examinations which will lead to a profession and a career, probably in optometry. It seems, likely, however, that although students were asked to think back to when they first joined the programme, their statements are actually influenced by their experiences over the last one, two or three years. The result may give insight into the development of expectations arising from the students' increasing experience of the programme at its different stages.

6.2.2 The most helpful and unhelpful features of the programme

The participants in each of the discussion groups were asked first to write in the Pro Forma (Appendix A) their individual views on 1) which features of the programme had helped them to function effectively in their role of student; 2) what aspects of the programme did not help them to function effectively in their role; 3) any other issues concerning the quality of the programme/their level of satisfaction with it. All the comments were then collected from the group (leaving out duplicates) and recorded on flip charts. The participants were then asked to 'vote' on the items generated by considering which three items they considered to be of first, second and third importance in developing quality education (customer satisfaction) in the BSc Optometry programme at Aston.

The results of this exercise with each of the three groups which met in 1995 are given in Table 6.4 on pages 200-201. The HEFCE Aspect "code" (from Appendix C) has been added as part of the analysis. All features which received more than a single vote are presented. The First Years' comments are within the context of the need for help with their studies, particularly the

need for more assessment and feedback on progress. The Second Years' issues are largely similar; tutorial support is seen as being in need of improvement. The attitude of some staff towards undergraduates is also considered unhelpful. The Third Year students are concerned about the help they get with clinical work. The staff student ratio, particularly in the "109 clinic" (where students practice on volunteers), is seen as being too high and there is a view that Second Year students would benefit from seeing paying patients earlier in the programme.

The '1996' Year 3 group did not have enough time to complete the full voting procedure, but instead jointly compiled a list of 'helpful' and 'unhelpful' features and reached consensus on the four which they believed to be of most importance to them as students. The four features they chose, in priority order were:

1 Staff left the department in the middle of the course (unhelpful)
2 Changes to the published curriculum which meant that they did not know what they were going to be assessed/examined in (unhelpful)
3 Tutorials good (helpful) but need smaller groups
4 Standard of supervision of eye tests is varied (inconsistent) (unhelpful)

Table 6.4

Student Discussion Groups: ***Votes awarded to indicate the relative importance of the features of the BSc Optometry programme described as 'helpful' or 'unhelpful' by participants in each of the Year Groups which met in 1995***

YEAR 1				YEAR 2				YEAR 3 (1995 Group)			
Feature (1= helpful; 2=unhelpful)	**Priority**	**No of votes**	**Aspect code***	**Feature (1= helpful; 2=unhelpful)**	**Priority**	**No of votes**	**Aspect code***	**Feature (1= helpful; 2=unhelpful)**	**Priority**	**No of Votes**	**Aspect code***
No essays /questions set by lecturers during the course- only during mid-term (2)	1 2 3	2 2 1	2A	The number of students during practicals is often high - lack of personal assistance (2)	1 2 3	3 2 3	2C	Structure and timing of topics - see patients in third year - second year students should start in clinics earlier (2)	1 2 3	4	2A
	TOTAL VOTES	5			**TOTAL VOTES**	8			**TOTAL VOTES**	4	
Tutorial classes unsatisfactory: too little individual attention given (2)	1 2 3	3 1	4C	Many assessments but grades seem random. No modulation between assessors. Some assessors are said to be 'easier' than others (2)	1 2 3	2 4	2C	Too many students. Not enough staff in 109 clinic. Lack of gradual development of students as optometrists (2)	1 2 3	2	
	TOTAL VOTES	4			**TOTAL VOTES**	6			**TOTAL VOTES**	2	

Table 6.4 continued

Lecturers do not tell you what they are going to cover i.e. give you a syllabus (2)	1 2 3	 2 1	2A	Unnecessarily intimidating style of some lecturers - inhibits questions (2)	1 2 3	3 1	2A				
	TOTAL VOTES	**3**			**TOTAL VOTES**	**4**					
Given book list for each subject- but do not get references at end of lecture. When find reference do not know if the detail given is needed (2)	1 2 3	 3	2A	Lack of enthusiasm for teaching (more interested in research). Although some exceptions, many do not seem to care about undergraduate learning (2)	1 2 3	2 1	4A				
	TOTAL VOTES	**3**			**TOTAL VOTES**	**3**					
				Need more help before examinations- revision lectures/tutorials (2)	1 2 3	 3	4C				
					TOTAL VOTES	**3**					

*** Aspect code = 'HEFCE codes' as given in Appendix C**

6.2.3 Ways in which expectations and experience did not match

At the end of each session the groups were asked to refer back to their private notes on 'hopes' and 'fears' and to discuss, as a group, some of the ways in which their experiences had been different from their expectations (better or worse).

The First Years had the impression that other departments offering similar programmes offered more practical work in the first year, although Aston may have more in the second and third years. More practical work had been expected and would have been welcomed.

They thought some subjects, or topics within subject areas, should be optional for those who had already studied them at A Level, e.g. physics and biology. Some thought too much time was wasted for some students. There was also a view that in some subjects, for example, mathematics, too much knowledge was assumed. For example, final figures were provided in some lectures without any explanation of the method used for the calculation, or of where an explanation could be found by those who needed to know and understand it better.

Guidance and practice in essay writing, and feedback on this work ("not just a tick"), would also be beneficial as at present they go into examinations with little or no experience of what is required. They thought self-study packs, backed by tutorials, could be a way forward. The provision of a more detailed syllabus at the beginning of the course (i.e. providing more than lecture titles) would also be helpful.

A view from the Second Years was that they were rushed through topics and did not have time to develop full understanding and competence in them. They were also concerned that they would be meeting the general public two weeks into the next year and felt ill-prepared.

There was also a view that the department was a bit insular with few opportunities to mix with other students. This was especially so for those who lived off campus.

Discouraging features of the programme included a perception that enthusiasm for teaching was low in some cases (although some academic staff were exceptionally good) and that feedback on work was slow and sometimes inadequate.

The Third Years considered the mixture of lectures and clinics to be very beneficial; the clinical experience made them see the relevance of the lectures. The ratio of students to supervisors (four students to one supervisor) was excellent. The inclusion of some Business Management in the course would have been considered beneficial by some. Some considered the progression into the profession was too steep in the third year and that more could have been introduced in the second year. The first year felt like "doing A Levels again". There was also discussion about the relevance of all aspects of the course to a practising optometrist, leading to reflection on differences between a BSc degree and professional training.

6.3 Results of the student questionnaire

To confirm, complement and quantify the data collected from the discussion groups and other data sources, a student survey was conducted using a questionnaire. The specific purpose of the survey was to collect quantitative data on the students' view of the quality of the educational provision: what are their expectations and perceptions of the quality of the programme. The basic analysis of data from the questionnaire comprised calculating the mean expectation scores and mean perception scores for each of the features in each of the categories, and also calculating the difference in these scores for each feature. The responses were classified according to the year groups to which the respondents belonged. Total results, i.e. for all respondents, were also computed.

6.3.1 Expectations

Table 6.5 on pages 205-208 gives the mean expectation scores for the respondents in each of the years, and for all years. The results for each feature are presented in the groupings and order in which the features were included in the questionnaire (Appendix E). It can be seen that the responses from each of the year groups are broadly consistent, i.e. in terms of the features which have high and low scores. Most of the mean scores for

'expectation' are above 4.5, i.e. there is a high, or fairly high, expectation of the presence of most of the features. This is not surprising as the features were derived from the views collected from various sources, including the student discussion groups, on what is thought to be important. However, there is a sufficient range of scores to identify a set of priorities.

Table 6.5
Student Survey: *Mean Expectation scores for the respondents to the questionnaire survey, classified by year group and all years*

		MEAN EXPECTATION SCORES			
FEATURE		YR 1	YR 2	YR 3	ALL YRS
	Recruitment				
2.01	Give prospective students adequate information about the programme	6.89	6.64	6.57	6.69
2.02	Recruit only students with high academic ability and entrance qualifications	5.19	4.84	4.48	4.85
2.03	Give recognition at recruitment to prior learning and/or work experience	4.88	4.59	4.61	4.68
2.04	Provide for students with different academic backgrounds	5.56	5.71	5.52	5.62
2.05	Provide for students with different national and ethnic backgrounds	5.08	6.07	5.26	5.60
2.06	Provide for students of different ages	5.73	6.20	5.52	5.90
	Teaching & Learning				
3.01	Make programme aims and objectives comprehensible to me.	6.77	6.38	6.43	6.50
3.02	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	5.88	6.33	6.09	6.15
3.03	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	4.81	5.07	5.04	4.99
3.04	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study)	6.04	6.29	6.39	6.24
3.05	Help students to make the transition from school to undergraduate study	6.04	6.02	5.64	5.93
3.06	Have teachers who explain what you will be expected to have learned/know as a result of each lecture and item of coursework	6.31	6.42	6.00	6.29
3.07	Have teachers who are enthusiastic about their subjects	6.88	6.55	6.65	6.67
3.08	Have teachers who show comprehensive knowledge of their subjects	6.88	6.69	6.78	6.77
3.09	Have teachers who make substantial use of their own research in their teaching	4.96	5.16	4.96	5.05
3.10	Have teachers who set students regular work for assessment	5.04	5.18	4.96	5.09
3.11	Have teachers who provide lecture notes and reading lists which facilitate study	6.56	6.64	6.39	6.56
3.12	Have teachers who know how to teach/help students to learn	6.70	6.69	6.83	6.73
3.13	Have teachers who link their lectures/tutorials to other parts of the programme	6.15	6.09	6.13	6.12
3.14	Have students who are able to work on their own with little guidance from their teachers	3.78	4.66	3.96	4.23

Table 6.5 continued

		MEAN EXPECTATION SCORES			
FEATURE		YR 1	YR 2	YR 3	ALL YRS
	The curriculum				
4.01	Lead to employment as an optometrist	6.81	6.71	6.78	6.76
4.02	Be able to lead to employment other than as an optometrist	4.19	4.14	3.78	4.06
4.03	Facilitate progression to postgraduate study	5.35	5.53	5.43	5.46
4.04	Enhance students' academic ability	6.00	5.98	6.09	6.01
4.05	Encourage high academic achievement above all else	3.93	4.40	4.13	4.20
4.06	Concentrate on subject knowledge required by the profession	6.04	6.00	5.96	6.00
4.07	Develop high standards of patient care	6.70	6.82	6.87	6.80
4.08	Develop problem-solving skills	6.19	5.78	6.35	6.03
4.09	Develop the ability to communicate effectively (written and oral)	6.67	6.51	6.74	6.61
4.10	Provide good opportunities for team-work	5.63	5.27	5.17	5.35
4.11	Encourage innovation (new ways of doing things)	5.37	4.84	5.22	5.09
4.12	Develop the ability to use information technology	6.00	5.82	4.96	5.66
4.13	Develop self-management skills	6.33	5.67	5.64	5.85
4.14	Include adequate work experience e.g. hospital placements	6.56	6.53	6.61	6.56
4.15	Offer some subjects/topics as options (modules)	5.15	4.87	4.74	4.92
	Assessment, progression and achievement				
5.01	Have consistent assessment methods	6.19	6.43	6.57	6.39
5.02	Return coursework promptly to students	6.41	6.49	6.43	6.45
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	6.78	6.82	6.83	6.81
5.04	Prepare students adequately for examinations	6.89	6.64	6.61	6.71
5.05	Undertake assessment in a work environment where appropriate	5.78	6.07	5.48	5.84
5.06	Base final assessment on examinations only	2.44	2.22	1.87	2.20
5.07	Base final assessment on course-work and examinations	5.89	6.49	6.74	6.38
5.08	Have few students not completing the programme	4.80	5.09	5.22	5.04
5.09	Result in a qualification which is more highly regarded than similar qualifications from other universities	5.69	5.39	5.09	5.40

Table 6.5 continued

		MEAN EXPECTATION SCORES			
FEATURE		YR 1	YR 2	YR 3	ALL YRS
	Student support, guidance and learning resources				
6.01	Have an effective careers counselling service	5.59	5.47	4.48	5.26
6.02	Provide for the welfare of students through a range of support services (financial counselling, medical, accommodation)	5.70	5.95	6.04	5.90
6.03	Make study skills advice available	5.81	6.00	5.70	5.87
6.04	Have a system which provides adequate individual tuition	6.11	6.02	6.30	6.12
6.05	Timetable tutorials and practicals to give all students a consistent level of help	6.56	6.55	6.39	6.51
6.06	Monitor attendance at lectures, tutorials and practicals	4.63	4.95	4.83	4.83
6.07	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	4.74	5.14	4.39	4.84
6.08	Give adequate help to all with "foundation" subjects such as mathematics and physics	5.96	5.77	5.83	5.84
6.09	Assess need for different levels of help with foundation subjects and provide it selectively	5.67	5.50	5.65	5.59
6.10	Give adequate help with practical work	6.59	6.56	6.26	6.49
6.11	Have help available for all course-work when requested	6.04	6.34	6.00	6.17
6.12	Have staff who are approachable and friendly	6.81	6.82	6.65	6.78
6.13	Have staff who give a high standard of help	6.69	6.65	6.70	6.67
6.14	Have sufficient and adequately equipped clinics	6.96	6.80	6.91	6.87
6.15	Have a library with adequate resources to cater for the learning demands of students	6.96	6.84	6.87	6.88
6.16	Have adequate access to information technology facilities (time & location)	6.35	6.60	6.39	6.48
6.17	Have accessible technical and support staff to assist information technology users	6.23	6.30	6.13	6.24
	Quality assurance and enhancement				
7.01	Regularly collect feedback on the programme from students	5.81	5.98	6.17	5.98
7.02	Ensure that feedback on the programme from students leads to improvements	6.52	6.59	6.57	6.56
7.03	Have staff who engage in research in their disciplines	5.04	5.77	5.68	5.56
7.04	Have, within the staff team, the range of knowledge, expertise and interests to match departmental requirements	6.67	6.68	6.70	6.68
7.05	Have staff with a high academic standing and reputation	6.12	6.04	5.91	6.03
7.06	Adhere to published timetables e.g. lectures not cancelled	5.93	6.31	6.52	6.25
	The environment and the culture				
8.01	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	6.33	6.56	6.57	6.49
8.02	Provide an attractive, pleasant campus	6.41	6.29	5.70	6.18

Table 6.5 continued

		MEAN EXPECTATION SCORES			
		YR 1	YR 2	YR 3	ALL YRS
8.03	Have the option to live on campus	6.48	6.52	6.17	6.43
8.04	Give individuals a clear view of what they are expected to achieve in the department	6.37	6.33	6.26	6.33
8.05	Operate within a department where staff and students have a shared sense of purpose	5.73	5.96	6.35	5.99
8.06	Operate within a department which is well-integrated into the university	5.69	5.67	5.65	5.67

6.3.2 Priorities

As a result of the survey it is possible to identify the features which are considered by the BSc Optometry students to be the most important in meeting their needs from the programme. Table 6.6 on pages 209-211 gives the mean expectation scores for all respondents in ranked order, i.e. it indicates which features are the most important to the students overall. Table 6.7 on pages 212-214 gives, for the respondents from each of the year groups, the 10 features which come at the top, and the ten features which come at the bottom of the lists of ranked expectations classified separately by year group.

Table 6.6

Student survey: *Mean Expectation scores for all respondents in ranked order*

		RANKED MEAN EXPECTATION SCORES	
Feature		All Years	Rank
6.15	Have a library with adequate resources to cater for the learning demands of students	6.88	1
6.14	Have sufficient and adequately equipped clinics	6.87	2
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	6.81	3
4.07	Develop high standards of patient care	6.80	4
6.12	Have staff who are approachable and friendly	6.78	5
3.08	Have teachers who show comprehensive knowledge of their subjects	6.77	6
4.01	Lead to employment as an optometrist	6.76	7
3.12	Have teachers who know how to teach/help students to learn	6.73	8
5.04	Prepare students adequately for examinations	6.71	9
2.01	Give prospective students adequate information about the programme	6.69	10
7.04	Have, within the staff team, the range of knowledge, expertise and interests to match departmental requirements	6.68	11
3.07	Have teachers who are enthusiastic about their subjects	6.67	12
6.13	Have staff who give a high standard of help	6.67	12=
4.09	Develop the ability to communicate effectively (written and oral)	6.61	14
3.11	Have teachers who provide lecture notes and reading lists which facilitate study	6.56	15
4.14	Include adequate work experience e.g. hospital placements	6.56	15=
7.02	Ensure that feedback on the programme from students leads to improvements	6.56	15=
6.05	Timetable tutorials and practicals to give all students a consistent level of help	6.51	18
3.01	Make programme aims and objectives comprehensible to me.	6.50	19
6.10	Give adequate help with practical work	6.49	20
8.01	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	6.49	20=
6.16	Have adequate access to information technology facilities (time & location)	6.48	22
5.02	Return coursework promptly to students	6.45	23
8.03	Have the option to live on campus	6.43	24
5.01	Have consistent assessment methods	6.39	25
5.07	Base final assessment on course-work and examinations	6.38	26
8.04	Give individuals a clear view of what they are expected to achieve in the department	6.33	27
3.06	Have teachers who explain what you will be expected to have learned/know as a result of each lecture and item of coursework	6.29	28
7.06	Adhere to published timetables e.g. lectures not cancelled	6.25	29
3.04	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study)	6.24	30
6.17	Have accessible technical and support staff to assist information technology users	6.24	30=
8.02	Provide an attractive, pleasant campus	6.18	32
6.11	Have help available for all course-work when requested	6.17	33

Table 6.6 continued

		RANKED MEAN EXPECTATION SCORES	
Feature		**All Years**	**Rank**
3.02	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	6.15	34
3.13	Have teachers who link their lectures/tutorials to other parts of the programme	6.12	35
6.04	Have a system which provides adequate individual tuition	6.12	35=
4.08	Develop problem-solving skills	6.03	37
7.05	Have staff with a high academic standing and reputation	6.03	37=
4.04	Enhance students' academic ability	6.01	39
4.06	Concentrate on subject knowledge required by the profession	6.00	40
8.05	Operate within a department where staff and students have a shared sense of purpose	5.99	41
7.01	Regularly collect feedback on the programme from students	5.98	42
3.05	Help students to make the transition from school to undergraduate study	5.93	43
2.06	Provide for students of different ages	5.90	44
6.02	Provide for the welfare of students through a range of support services (financial counselling, medical, accommodation)	5.90	44=
6.03	Make study skills advice available	5.87	46
4.13	Develop self-management skills	5.85	47
5.05	Undertake assessment in a work environment where appropriate	5.84	48
6.08	Give adequate help to all with "foundation" subjects such as mathematics and physics	5.84	48=
8.06	Operate within a department which is well-integrated into the university	5.67	50
4.12	Develop the ability to use information technology	5.66	51
2.04	Provide for students with different academic backgrounds	5.62	52
2.05	Provide for students with different national and ethnic backgrounds	5.60	53
6.09	Assess need for different levels of help with foundation subjects and provide it selectively	5.59	54
7.03	Have staff who engage in research in their disciplines	5.56	55
4.03	Facilitate progression to postgraduate study	5.46	56
5.09	Result in a qualification which is more highly regarded than similar qualifications from other universities	5.40	57
4.10	Provide good opportunities for team-work	5.35	58
6.01	Have an effective careers counselling service	5.26	59
3.10	Have teachers who set students regular work for assessment	5.09	60
4.11	Encourage innovation (new ways of doing things)	5.09	60=
3.09	Have teachers who make substantial use of their own research in their teaching	5.05	62
5.08	Have few students not completing the programme	5.04	63
3.03	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	4.99	64
4.15	Offer some subjects/topics as options (modules)	4.92	65
2.02	Recruit only students with high academic ability and entrance qualifications	4.85	66
6.07	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	4.84	67
6.06	Monitor attendance at lectures, tutorials and practicals	4.83	68

Table 6.6 continued

		RANKED MEAN EXPECTATION SCORES	
Feature		**All Years**	**Rank**
2.03	Give recognition at recruitment to prior learning and/or work experience	4.68	69
3.14	Have students who are able to work on their own with little guidance from their teachers	4.23	70
4.05	Encourage high academic achievement above all else	4.20	71
4.02	Be able to lead to employment other than as an optometrist	4.06	72
5.06	Base final assessment on examinations only	2.20	73

Table 6.7

Student survey: ***Features ranked by Mean Expectation Score for each of the 3 year groups. The 10 features which came at the top and the 10 features which came at the bottom of the lists of ranked expectation scores***

a) Year 1

		RANKED MEAN EXPECTATION SCORES	
Feature		Year 1	Rank
6.14	Have sufficient and adequately equipped clinics	6.96	1
6.15	Have a library with adequate resources to cater for the learning demands of students	6.96	1=
2.01	Give prospective students adequate information about the programme	6.89	3
5.04	Prepare students adequately for examinations	6.89	3=
3.07	Have teachers who are enthusiastic about their subjects	6.88	5
3.08	Have teachers who show comprehensive knowledge of their subjects	6.88	5=
4.01	Lead to employment as an optometrist	6.81	7
6.12	Have staff who are approachable and friendly	6.81	7=
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	6.78	9
3.01	Make programme aims and objectives comprehensible to me.	6.77	10
3.09	Have teachers who make substantial use of their own research in their teaching	4.96	64
2.03	Give recognition at recruitment to prior learning and/or work experience	4.88	65
3.03	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	4.81	66
5.08	Have few students not completing the programme	4.80	67
6.07	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	4.74	68
6.06	Monitor attendance at lectures, tutorials and practicals	4.63	69
4.02	Be able to lead to employment other than as an optometrist	4.19	70
4.05	Encourage high academic achievement above all else	3.93	71
3.14	Have students who are able to work on their own with little guidance from their teachers	3.78	72
5.06	Base final assessment on examinations only	2.44	73

Table 6.7 continued

b) Year 2

Feature	RANKED MEAN EXPECTATION SCORES	Year 2	Rank
6.15	Have a library with adequate resources to cater for the learning demands of students	6.84	1
4.07	Develop high standards of patient care	6.82	2
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	6.82	2=
6.12	Have staff who are approachable and friendly	6.82	2=
6.14	Have sufficient and adequately equipped clinics	6.80	5
4.01	Lead to employment as an optometrist	6.71	6
3.08	Have teachers who show comprehensive knowledge of their subjects	6.69	7
3.12	Have teachers who know how to teach/help students to learn	6.69	7=
7.04	Have, within the staff team, the range of knowledge, expertise and interests to match departmental requirements	6.68	9
6.13	Have staff who give a high standard of help	6.65	10
3.03	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	5.07	64
6.06	Monitor attendance at lectures, tutorials and practicals	4.95	65
4.15	Offer some subjects/topics as options (modules)	4.87	66
2.02	Recruit only students with high academic ability and entrance qualifications	4.84	67
4.11	Encourage innovation (new ways of doing things)	4.84	67=
3.14	Have students who are able to work on their own with little guidance from their teachers	4.66	69
2.03	Give recognition at recruitment to prior learning and/or work experience	4.59	70
4.05	Encourage high academic achievement above all else	4.40	71
4.02	Be able to lead to employment other than as an optometrist	4.14	72
5.06	Base final assessment on examinations only	2.22	73

Table 6.7 continued

c) Year 3

Feature	RANKED MEAN EXPECTATION SCORES	Year 3	Rank
6.14	Have sufficient and adequately equipped clinics	6.91	1
4.07	Develop high standards of patient care	6.87	2
6.15	Have a library with adequate resources to cater for the learning demands of students	6.87	2=
3.12	Have teachers who know how to teach/help students to learn	6.83	4
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	6.83	4=
3.08	Have teachers who show comprehensive knowledge of their subjects	6.78	6
4.01	Lead to employment as an optometrist	6.78	6=
4.09	Develop the ability to communicate effectively (written and oral)	6.74	8
5.07	Base final assessment on course-work and examinations	6.74	8=
6.13	Have staff who give a high standard of help	6.70	10
6.06	Monitor attendance at lectures, tutorials and practicals	4.83	64
4.15	Offer some subjects/topics as options (modules)	4.74	65
2.03	Give recognition at recruitment to prior learning and/or work experience	4.61	66
2.02	Recruit only students with high academic ability and entrance qualifications	4.48	67
6.01	Have an effective careers counselling service	4.48	67=
6.07	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	4.39	69
4.05	Encourage high academic achievement above all else	4.13	70
3.14	Have students who are able to work on their own with little guidance from their teachers	3.96	71
4.02	Be able to lead to employment other than as an optometrist	3.78	72
5.06	Base final assessment on examinations only	1.87	73

It can be seen that in all cases learning resources - either the library or the clinics - come at the top of the ranked lists. In all cases these features are included in the top five of the ranked lists with mean scores of not less than 6.8. This is contrary to the discussion group outcomes which included few comments in Aspect 5 (Learning resources). Feature 4.01 ("Lead to employment as an optometrist") is also included in the top 10 features on each of the ranked lists, with mean expectation scores of between 6.71 and 6.81. Feature 4.02 ("Be able to lead to employment other than as an optometrist") comes within the bottom 10 of each list, with mean expectation scores of between 4.13 and 4.19. This indicates that, despite the claims for the programme in the prospectus, most students follow the course with the expectation of becoming an optometrist rather than of gaining a more general scientific education which can be used in a range of careers. Other comments included in the top and bottom 10 features of the ranked lists are

broadly consistent with the comments from the student discussion groups. They want a high standard of help from friendly and enthusiastic staff who have a good knowledge of their subjects and they want to have useful feedback from assessed work to help them channel their improvement efforts.

At the bottom of the list for all year groups are those features which might suggest a lower level of help from staff, for example, features 3.14 and 3.03 ("have students who are able to work on their own with little guidance from their teachers" and "encourage students to be independent learners; to identify their own strengths and weaknesses"). There is also a tendency for those features which emphasize high academic content and ability as opposed to professional competence to come at the bottom of each of the lists, for example, 4.05 ("encourage high academic achievement above all else") and 2.02 ("recruit only students with high academic ability and entrance qualifications"). Also low in priority is feature 2.03 ("give recognition to prior learning and/or work experience"). The inference here could be that the expectation is that students will join the programme from school and receive a professional rather than an academic education. Monitoring attendance at lectures, tutorials and practicals is not considered a high priority by any of the year groups. Bottom of the list in all cases is Feature 5.06 ("Base final assessment on examination only") which has a low mean expectation score (2.2) for all respondents.

6.3.3 Satisfaction with the programme in as far as it is perceived to meet or not meet expectations

Table 6.8 on pages 217-219 gives the results of the calculation of the mean score for expectation minus the mean score for perception of the respondents in each of the year groups and of all respondents. This is the equivalent of "the gap" in the terms of Zeithaml, Parasuraman and Berry (1990). In this research the size of the gap may be used as an indicator of satisfaction or dissatisfaction with the provision of a product or service; the greater the gap, the greater the dissatisfaction.

Table 6.8 indicates some broad consistency in the scores for each of the year groups in terms of where they perceived the greatest gaps to exist. There are, however, some discrepancies between the perceptions of the respondents in each of the year groups. For example, Feature 3.11 ("Have teachers who know how to teach/help students to learn") shows that the perception of the size of this gap decreases from Year 1 to Year 3 - the "gap"

is for Year 1, Year 2 and Year 3 respectively; 2.13, 1.8, 0.96. There is a similar tendency in Feature 4.12 ("Develop the ability to use information technology") with gaps of 2.61, 2.44 and 1.48 for year groups 1, 2 and 3 respectively, and in Feature 5.04 ("Prepare students adequately for examinations"), which shows the perceptions of the gap for year groups 1, 2 and 3 to be 3.25, 2.87 and 2.7. Some features show the reverse tendency, i.e. the gap is perceived as being bigger by the more experienced groups, for example, Feature 5.01 ("have consistent assessment methods") shows perceived gaps of 1.4, 1.66 and 3.39 for the students in year groups 1, 2 and 3, and Feature 5.02 ("Return coursework promptly to students") shows perceived gaps of 0, 2.35 and 3.3 for the year groups 1, 2 and 3. In Features 8.05 ("Operate within a department where staff and students have a shared sense of purpose"), the perceived gap again gets progressively bigger with 'scores' for years 1, 2 and 3 being 0.93, 1.43 and 2.09. The third years also have a stronger sense than respondents from the other two year groups that the programme does not operate within a department which is well-integrated into the university (the gaps for Feature 8.06, which covers this topic, are 1.77, 1.42 and 2.48 for year groups 1, 2 and 3 respectively).

Table 6.8

Student Survey: ***Perception/Expectation differences based on the calculation of the mean score for expectation minus the mean score for perception for the respondents to the questionnaire survey, classified by year group and by all years***

		EXPECTATION minus PERCEPTION MEAN SCORES			
FEATURE		YR 1	YR 2	YR 3	ALL YRS
	Recruitment				
2.01	Give prospective students adequate information about the programme	1.64	1.02	1.48	1.31
2.02	Recruit only students with high academic ability and entrance qualifications	-0.11	-0.11	-0.20	-0.14
2.03	Give recognition at recruitment to prior learning and/or work experience	0.92	-0.02	0.02	0.25
2.04	Provide for students with different academic backgrounds	0.81	0.67	0.65	0.71
2.05	Provide for students with different national and ethnic backgrounds	0.08	0.25	0.04	0.15
2.06	Provide for students of different ages	0.23	0.07	0.13	0.13
	Teaching & Learning				
3.01	Make programme aims and objectives comprehensible to me.	1.77	1.20	1.65	1.47
3.02	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	1.18	1.71	1.52	1.52
3.03	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	0.14	0.24	0.26	0.22
3.04	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study)	1.04	1.36	0.78	1.13
3.05	Help students to make the transition from school to undergraduate study	1.54	1.73	1.73	1.68
3.06	Have teachers who explain what you will be expected to have learned/know as a result of each lecture and item of coursework	2.94	3.02	2.04	2.76
3.07	Have teachers who are enthusiastic about their subjects	2.29	1.45	2.04	1.84
3.08	Have teachers who show comprehensive knowledge of their subjects	1.12	1.07	0.74	1.00
3.09	Have teachers who make substantial use of their own research in their teaching	0.81	0.11	-0.48	0.16
3.10	Have teachers who set students regular work for assessment	1.52	1.04	1.39	1.26
3.11	Have teachers who provide lecture notes and reading lists which facilitate study	2.13	1.80	0.96	1.69
3.12	Have teachers who know how to teach/help students to learn	2.74	2.58	2.78	2.67
3.13	Have teachers who link their lectures/tutorials to other parts of the programme	1.61	1.49	1.78	1.59
3.14	Have students who are able to work on their own with little guidance from their teachers	-0.65	-0.09	-0.83	-0.43

Table 6.8 continued

		EXPECTATION minus PERCEPTION MEAN SCORES			
FEATURE		YR 1	YR 2	YR 3	ALL YRS
	The curriculum				
4.01	Lead to employment as an optometrist	0.31	0.24	0.00	0.20
4.02	Be able to lead to employment other than as an optometrist	0.40	0.46	0.48	0.46
4.03	Facilitate progression to postgraduate study	1.01	0.42	0.00	0.47
4.04	Enhance students' academic ability	0.64	0.89	0.39	0.70
4.05	Encourage high academic achievement above all else	-0.25	-0.20	-0.39	-0.26
4.06	Concentrate on subject knowledge required by the profession	1.22	1.09	1.13	1.14
4.07	Develop high standards of patient care	1.10	0.93	1.17	1.03
4.08	Develop problem-solving skills	1.38	1.47	2.04	1.58
4.09	Develop the ability to communicate effectively (written and oral)	1.90	1.47	1.91	1.70
4.10	Provide good opportunities for team-work	1.45	1.18	1.13	1.24
4.11	Encourage innovation (new ways of doing things)	1.30	1.34	1.43	1.35
4.12	Develop the ability to use information technology	2.61	2.44	1.48	2.26
4.13	Develop self-management skills	2.58	2.16	1.82	2.20
4.14	Include adequate work experience e.g. hospital placements	1.41	1.11	0.74	1.09
4.15	Offer some subjects/topics as options (modules)	3.07	1.96	2.83	2.48
	Assessment, progression and achievement				
5.01	Have consistent assessment methods	1.40	1.66	3.39	2.00
5.02	Return coursework promptly to students	0.00	2.35	3.30	1.91
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	3.67	3.69	3.83	3.72
5.04	Prepare students adequately for examinations	3.25	2.87	2.70	2.93
5.05	Undertake assessment in a work environment where appropriate	0.93	1.58	1.17	1.30
5.06	Base final assessment on examinations only	-0.37	-0.47	-1.57	-0.71
5.07	Base final assessment on course-work and examinations	0.11	0.40	1.22	0.52
5.08	Have few students not completing the programme	-0.25	0.05	0.17	0.00
5.09	Result in a qualification which is more highly regarded than similar qualifications from other universities	1.23	1.01	0.57	0.96
	Student support, guidance and learning resources				
6.01	Have an effective careers counselling service	1.11	1.16	0.48	0.99
6.02	Provide for the welfare of students through a range of support services (financial counselling, medical, accommodation)	0.82	1.27	1.17	1.12
6.03	Make study skills advice available	1.96	1.82	1.47	1.78
6.04	Have a system which provides adequate individual tuition	3.29	3.14	3.71	3.32
6.05	Timetable tutorials and practicals to give all students a consistent level of help	2.16	2.39	2.17	2.27
6.06	Monitor attendance at lectures, tutorials and practicals	1.95	1.98	1.61	1.88
6.07	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	2.22	2.47	2.09	2.31
6.08	Give adequate help to all with "foundation" subjects such as mathematics and physics	2.89	2.38	1.65	2.35

Table 6.8 continued

		EXPECTATION minus PERCEPTION MEAN SCORES			
FEATURE		YR 1	YR 2	YR 3	ALL YRS
	Student support, guidance and learning resources continued				
6.09	Assess need for different levels of help with foundation subjects and provide it selectively	3.20	2.71	2.48	2.80
6.10	Give adequate help with practical work	1.41	2.33	1.43	1.84
6.11	Have help available for all course-work when requested	1.78	2.25	1.70	1.98
6.12	Have staff who are approachable and friendly	1.24	1.33	1.35	1.31
6.13	Have staff who give a high standard of help	1.54	2.00	1.70	1.79
6.14	Have sufficient and adequately equipped clinics	1.44	1.82	1.74	1.70
6.15	Have a library with adequate resources to cater for the learning demands of students	2.48	2.18	2.22	2.28
6.16	Have adequate access to information technology facilities (time & location)	2.38	1.98	1.65	2.02
6.17	Have accessible technical and support staff to assist information technology users	2.87	2.68	1.74	2.49
	Quality assurance and enhancement				
7.01	Regularly collect feedback on the programme from students	1.89	1.39	1.09	1.46
7.02	Ensure that feedback on the programme from students leads to improvements	2.66	2.85	2.87	2.81
7.03	Have staff who engage in research in their disciplines	0.23	0.23	-0.32	0.09
7.04	Have, within the staff team, the range of knowledge, expertise and interests to match departmental requirements	1.40	0.96	1.39	1.19
7.05	Have staff with a high academic standing and reputation	0.46	0.13	-0.04	0.18
7.06	Adhere to published timetables e.g. lectures not cancelled	0.35	1.62	2.61	1.49
	The environment and the culture				
8.01	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	0.76	1.16	1.78	1.19
8.02	Provide an attractive, pleasant campus	0.16	0.27	-0.43	0.06
8.03	Have the option to live on campus	1.33	1.43	0.48	1.17
8.04	Give individuals a clear view of what they are expected to achieve in the department	1.78	1.67	1.83	1.74
8.05	Operate within a department where staff and students have a shared sense of purpose	0.93	1.43	2.09	1.46
8.06	Operate within a department which is well-integrated into the university	1.77	1.42	2.48	1.78

Table 6.9 on pages 220-222 gives the Perception/Expectation differences, in ranked order, based on the calculation for all respondents of the mean score for expectation minus the mean score for perception.

Table 6. 9

Student survey: *Perception/Expectation differences for all respondents based on the calculation of the mean score for expectation minus the mean score for perception, in ranked order*

Feature	Expectation minus Perception (mean scores)	All Years	Rank
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	3.72	1
6.04	Have a system which provides adequate individual tuition	3.32	2
5.04	Prepare students adequately for examinations	2.93	3
7.02	Ensure that feedback on the programme from students leads to improvements	2.81	4
6.09	Assess need for different levels of help with foundation subjects and provide it selectively	2.80	5
3.06	Have teachers who explain what you will be expected to have learned/know as a result of each lecture and item of coursework	2.76	6
3.12	Have teachers who know how to teach/help students to learn	2.67	7
6.17	Have accessible technical and support staff to assist information technology users	2.49	8
4.15	Offer some subjects/topics as options (modules)	2.48	9
6.08	Give adequate help to all with "foundation" subjects such as mathematics and physics	2.35	10
6.07	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	2.31	11
6.15	Have a library with adequate resources to cater for the learning demands of students	2.28	12
6.05	Timetable tutorials and practicals to give all students a consistent level of help	2.27	13
4.12	Develop the ability to use information technology	2.26	14
4.13	Develop self-management skills	2.20	15
6.16	Have adequate access to information technology facilities (time & location)	2.02	16
5.01	Have consistent assessment methods	2.00	17
6.11	Have help available for all course-work when requested	1.98	18
5.02	Return coursework promptly to students	1.91	19
6.06	Monitor attendance at lectures, tutorials and practicals	1.88	20
3.07	Have teachers who are enthusiastic about their subjects	1.84	21
6.10	Give adequate help with practical work	1.84	21=
6.13	Have staff who give a high standard of help	1.79	23
6.03	Make study skills advice available	1.78	24
8.06	Operate within a department which is well-integrated into the university	1.78	24=
8.04	Give individuals a clear view of what they are expected to achieve in the department	1.74	26
4.09	Develop the ability to communicate effectively (written and oral)	1.70	27
6.14	Have sufficient and adequately equipped clinics	1.70	27=
3.11	Have teachers who provide lecture notes and reading lists which facilitate study	1.69	29
3.05	Help students to make the transition from school to undergraduate study	1.68	30
3.13	Have teachers who link their lectures/tutorials to other parts of the programme	1.59	31
4.08	Develop problem-solving skil s	1.58	32
3.02	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	1.52	33

Table 6.9 continued

Feature	Expectation minus Perception (mean scores)	All Years	Rank
7.06	Adhere to published timetables e.g. lectures not cancelled	1.49	34
3.01	Make programme aims and objectives comprehensible to me.	1.47	35
7.01	Regularly collect feedback on the programme from students	1.46	36
8.05	Operate within a department where staff and students have a shared sense of purpose	1.46	36=
4.11	Encourage innovation (new ways of doing things)	1.35	38
2.01	Give prospective students adequate information about the programme	1.31	39
6.12	Have staff who are approachable and friendly	1.31	40
5.05	Undertake assessment in a work environment where appropriate	1.30	41
3.10	Have teachers who set students regular work for assessment	1.26	42
4.10	Provide good opportunities for team-work	1.24	43
7.04	Have, within the staff team, the range of knowledge, expertise and interests to match departmental requirements	1.19	44
8.01	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	1.19	44=
8.03	Have the option to live on campus	1.17	46
4.06	Concentrate on subject knowledge required by the profession	1.14	47
3.04	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study)	1.13	48
6.02	Provide for the welfare of students through a range of support services (financial counselling, medical, accommodation)	1.12	49
4.14	Include adequate work experience e.g. hospital placements	1.09	50
4.07	Develop high standards of patient care	1.03	51
3.08	Have teachers who show comprehensive knowledge of their subjects	1.00	52
6.01	Have an effective careers counselling service	0.99	53
5.09	Result in a qualification which is more highly regarded than similar qualifications from other universities	0.96	54
2.04	Provide for students with different academic backgrounds	0.71	55
4.04	Enhance students' academic ability	0.70	56
5.07	Base final assessment on course-work and examinations	0.52	57
4.03	Facilitate progression to postgraduate study	0.47	58
4.02	Be able to lead to employment other than as an optometrist	0.46	59
2.03	Give recognition at recruitment to prior learning and/or work experience	0.25	60
3.03	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	0.22	61
4.01	Lead to employment as an optometrist	0.20	62
7.05	Have staff with a high academic standing and reputation	0.18	63
3.09	Have teachers who make substantial use of their own research in their teaching	0.16	64
2.05	Provide for students with different national and ethnic backgrounds	0.15	65
2.06	Provide for students of different ages	0.13	66
7.03	Have staff who engage in research in their disciplines	0.09	67

Table 6.9 continued

Feature	Expectation minus Perception (mean scores)	All Years	Rank
8.02	Provide an attractive, pleasant campus	0.06	68
5.08	Have few students not completing the programme	0.00	69
2.02	Recruit only students with high academic ability and entrance qualifications	-0.14	70
4.05	Encourage high academic achievement above all else	-0.26	71
3.14	Have students who are able to work on their own with little guidance from their teachers	-0.43	72
5.06	Base final assessment on examinations only	-0.71	73

Table 6.10 on pages 224-226 gives the 10 features which, for each of the year groups, come at the top, and the 10 features which come at the bottom of the ranked lists of "gaps" between mean expectation and mean perception scores. These tables show that students are unanimous in their view that the least satisfactory aspects of the programme, in terms of the extent to which features are perceived to meet their expectations, are Features 5.03 ("Give students useful feedback from assessed work to help them channel their improvement efforts") and Feature 6.04 ("Have a system which provides adequate individual tuition"). The sizes of the gaps are considerable relative to those for other features and range between 3.14 and 3.83. All comments included in the 'top ten' for each of the year groups are concerned with the level and kind of tuition and the preparation for examinations. This is consistent with the results of the discussion groups.

The features which appear within the bottom 10 of the lists ranked in descending order of the size of the gap, are almost the same ones that appeared at the bottom of the ranked lists of mean expectation scores. This suggests, therefore, that the features at the bottom of the lists which have positive 'scores' (0 or above) are not important ones with which the respondents are highly satisfied, but rather that they are features they are not so concerned about. The expectation is not high, and the perception of their existence is not high, and in this sense they are satisfied. The negative 'scores' (less than 0), however, indicate areas of dissatisfaction in that the respondents are indicating that the presence of this feature is too strong; they are being given too much of something, or being given something too often, or to a higher standard than they perceive they need. Examples which apply to respondents in all the year groups include Feature 2.02 ("Recruit

only students with high academic ability and entrance qualifications") and Feature 4.05 ("Encourage high academic achievement above all else").

Table 6.10

Student survey: *The 10 features which, for each of the years, come at the top, and the 10 features which come at the bottom of the ranked list of "gaps" between Mean Expectation and Mean Perception Scores*

a) Year 1

Feature		Expectation minus Perception (mean scores)	Rank
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	3.67	1
6.04	Have a system which provides adequate individual tuition	3.29	2
5.04	Prepare students adequately for examinations	3.25	3
6.09	Assess need for different levels of help with foundation subjects and provide it selectively	3.20	4
4.15	Offer some subjects/topics as options (modules)	3.07	5
3.06	Have teachers who explain what you will be expected to have learned/know as a result of each lecture and item of coursework	2.94	6
6.08	Give adequate help to all with "foundation" subjects such as mathematics and physics	2.89	7
6.17	Have accessible technical and support staff to assist information technology users	2.87	8
3.12	Have teachers who know how to teach/help students to learn	2.74	9
7.02	Ensure that feedback on the programme from students leads to improvements	2.66	10
8.02	Provide an attractive, pleasant campus	0.16	64
3.03	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	0.14	65
5.07	Base final assessment on course-work and examinations	0.11	66
2.05	Provide for students with different national and ethnic backgrounds	0.08	67
5.02	Return coursework promptly to students	0.00	68
2.02	Recruit only students with high academic ability and entrance qualifications	-0.11	69
5.08	Have few students not completing the programme	-0.25	70
4.05	Encourage high academic achievement above all else	-0.25	70=
5.06	Base final assessment on examinations only	-0.37	72
3.14	Have students who are able to work on their own with little guidance from their teachers	-0.65	73

Table 6.10 continued

b) Year 2

Feature		Expectation minus Perception (mean scores)	Rank
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	3.69	1
6.04	Have a system which provides adequate individual tuition	3.14	2
3.06	Have teachers who explain what you will be expected to have learned/know as a result of each lecture and item of coursework	3.02	3
5.04	Prepare students adequately for examinations	2.87	4
7.02	Ensure that feedback on the programme from students leads to improvements	2.85	5
6.09	Assess need for different levels of help with foundation subjects and provide it selectively	2.71	6
6.17	Have accessible technical and support staff to assist information technology users	2.68	7
3.12	Have teachers who know how to teach/help students to learn	2.58	8
6.07	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	2.47	9
4.12	Develop the ability to use information technology	2.44	10
7.03	Have staff who engage in research in their disciplines	0.23	64
7.05	Have staff with a high academic standing and reputation	0.13	65
3.09	Have teachers who make substantial use of their own research in their teaching	0.11	66
2.06	Provide for students of different ages	0.07	67
5.08	Have few students not completing the programme	0.05	68
2.03	Give recognition at recruitment to prior learning and/or work experience	-0.02	69
3.14	Have students who are able to work on their own with little guidance from their teachers	-0.09	70
2.02	Recruit only students with high academic ability and entrance qualifications	-0.11	71
4.05	Encourage high academic achievement above all else	-0.20	72
5.06	Base final assessment on examinations only	-0.47	73

Table 6.10 continued

c) Year 3

Feature		Expectation minus Perception (mean scores)	Rank
5.03	Give students useful feedback from assessed work to help them channel their improvement efforts	3.83	1
6.04	Have a system which provides adequate individual tuition	3.71	2
5.01	Have consistent assessment methods	3.39	3
5.02	Return coursework promptly to students	3.30	4
7.02	Ensure that feedback on the programme from students leads to improvements	2.87	5
4.15	Offer some subjects/topics as options (modules)	2.83	6
3.12	Have teachers who know how to teach/help students to learn	2.78	7
5.04	Prepare students adequately for examinations	2.70	8
7.06	Adhere to published timetables e.g. lectures not cancelled	2.61	9
4.01	Lead to employment as an optometrist	0.00	64
4.03	Facilitate progression to postgraduate study	0.00	65
7.05	Have staff with a high academic standing and reputation.	-0.04	66
2.02	Recruit only students with high academic ability and entrance qualifications	-0.20	67
7.03	Have staff who engage in research in their disciplines	-0.32	68
4.05	Encourage high academic achievement above all else	-0.39	69
8.02	Provide an attractive, pleasant campus	-0.43	70
3.09	Have teachers who make substantial use of their own research in their teaching	-0.48	71
3.14	Have students who are able to work on their own with little guidance from their teachers	-0.83	72
5.06	Base final assessment on examinations only	-1.57	73

6.4 Conclusions on the Voice of the Student

In TQM, quality, as described in Chapter 3, is set in the context of 'fitness for purpose' and 'meeting the needs of the customer'. Its starting point therefore has to be to find out who are the customers ("those impacted by the product, process or service") and what are those customers trying to achieve, i.e. what is their purpose, and what do **they** think they need in order to achieve that purpose. Finding out about needs involves listening to, collecting and

analysing the Voice of the Customer (VOTC). This is what the fieldwork described in this chapter has set about doing.

The TQM method now requires that a conclusion is reached about:

- purpose
- what the customers want, or believe they need, to achieve that purpose
- how far they perceive that their needs are being met, i.e. what do they perceive to be the shortcomings of the programme?

From the results of the fieldwork, it may be deduced that the purpose and perceived needs of the students, as one of the sets of stakeholders, or customers of, the BSc Optometry programme at Aston University are as follows:

Purpose

The purpose of most students following the programme is to become an optometrist (Table 6.6 on pages 209-211 shows a high expectation of this). They therefore perceive that the purpose of the BSc Optometry programme is to help them achieve this.

What they perceive they need to achieve this purpose

To achieve this purpose they need to qualify for the profession and need to get the BSc Optometry degree as a significant step towards this. To the majority of students, therefore, the purpose of the BSc Optometry programme is to help them to become an optometrist. In the terms of the existing provision this means they have to attain good marks in assessed work throughout the programme and to pass the examinations. While at university this becomes their purpose. The discussion group participants referred often to the wish to pass the examinations and to the fear of failure.

To achieve a satisfactory result in the assessments, including the final examinations, they have to show competence in the subjects they will be assessed and examined in (this might be knowing facts, or demonstrating skills and/or understanding). The university delivers this knowledge and assists understanding and competence in the relevant subjects primarily through a process of lectures and tutorials. The needs of the students then

become those things which they perceive they need from the delivery processes.

In terms of the lectures, the fieldwork suggests that they want and/or need:

- help with techniques (note-taking etc.)
- help with comprehension
- 'after care' - help if they cannot understand at the time (this can be in the form of additional personal help from tutors, or 'self-help' through, for example, the use of an appropriately stocked library).

In terms of tutorials, they need/want:

- personal individual help and so it is important that they feel able to approach academic and other staff easily.

In terms of preparations for examinations and assessed work which counts towards the final degree classification, they want:

- Helpful feedback so they know how they are doing and how they can improve.

Students also want to enjoy themselves while they are at university and to take the opportunity of meeting a range of people. They therefore want/need to be in a friendly community.

The differences between the year groups are largely because they are commenting on the stages of the programme which they have reached, for example, help with foundation subjects is considered important by the first years, less so by the others. The fundamental needs are similar. The greater experience of the second years may account for the fact that they provided a deeper analysis than the Year 1 discussion group of what is needed and provided. The third years were more preoccupied with final examinations and eventual careers.

How far they perceive that their needs are being met

Because the students see the purpose of the programme as being to help them to qualify as an optometrist, some dissatisfaction is expressed with the provision of subjects which they do not see as being relevant to this purpose.

Aspects of the provision which relate to a "general scientific education" are examples of this. Tables 6.6 and 6.7 show that the emphasis on academic achievement (at the time of recruitment and throughout the course) is a source of some dissatisfaction. The major sources of dissatisfaction, as discussed in 6.2.3, are those features which might suggest a lower level of help from staff. Feature 3.03 from the survey ("Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning") has a mean expectation score of 4.99 and comes within the 'bottom 10' of the ranked expectations for Years 1 and 2. Feature 3.14 ("Have students who are able to work on their own with little guidance from their teachers") appears in the 'bottom 10' list of ranked expectations for each of the year groups and has, in all cases, a negative 'score' for the "gap". The research activities of staff are seen as threatening students' success because such activity further reduces the staff time available to them.

6.5 Concluding remarks on the method

The results of the discussion groups and the survey indicate the value of collecting VOTC data through a combination of the two methods which do complement each other. Apart from providing triangulation of views, the survey data 'filled out' some of the discussion group data and vice versa, for example, the discussion groups indicated that at the end of the course the students wanted to be qualified to do a specific job (optometry was not always mentioned). The results of the survey indicated that the specific job was optometry. The discussion groups provided the background information that some of the perceived staff shortages were due to staff leaving and there being a gap before a replacement arrived. The space of time between the two exercises could also help to prevent distortion of the data by over-emphasis on short-term problems.

The TQM approach also helped to give insight into the results in terms of understanding VOTC techniques and the Kano model as described in Chapter 3, Sections 3.4.7 and 3.4.8. Some "basic" requirements may seem so obvious to customers that they will not be volunteered in interviews or discussion groups but, if prompted, they will be shown to be of great importance. In this study, learning resources such as the library and the clinic are examples of this. Some features may also be 'basic' in TQM terms in that their existence does not improve satisfaction, but their non-existence, or shortcomings, can lead to great dissatisfaction. "Excitement qualities" will

rarely be voiced but must be worked out by the provider once he or she has a good understanding of the customer's purpose.

Chapter 7

The Voice of the Departmental Staff

This chapter continues the presentation of the results of the investigation into the "Voice of the Customer" which began in Chapter 6 with the 'Voice of the Student'. This chapter presents the results of the fieldwork which was carried out to collect the "Voice of the Departmental Staff", following the data collection methodology described in Chapter 5, Section 5.4.2.

7.1 Results of the Staff interviews

7.1.1 Hopes and fears

Tables 7.1, 7.2 and 7.3 on pages 232-233, 234 and 235-236 respectively give the expectations, expressed as 'hopes' and 'fears' of the departmental staff in each of the 3 categories:

- academic staff and research fellows
- clinical and postgraduate demonstrators
- technical and secretarial

The comments are categorised, as described in Chapter 5, Section 5.4.2.1, by an "expanded list of HEFCE Aspects" (Appendix G).

Table 7.1

Staff interviews: ***Expectations of academic staff and research fellows expressed as 'Hopes' and 'Fears', categorised by the expanded list of HEFCE Aspects ****

Academic Staff/Research Fellows

Aspect Code	HOPES	Aspect Code	FEARS
Learning resources 5			
5B	Have access to good library	5B	Not having access to relevant library material
5D	Have access to computers	5D	Not having good IT facilities
	TOTAL NUMBER OF COMMENTS = 2		**TOTAL NUMBER OF COMMENTS = 2**
Quality assurance and enhancement 6			
6C	Command respect as an academic	6C	Would be difficult to offer training for Senior Tutor's role (and I was not)
6C	Successfully transfer from student status	6C	To still be treated as a postgraduate student
6C	Research and teach		
6C	That I could do the work and be successful		
6F	To improve on teaching personally received		
	TOTAL NUMBER OF COMMENTS = 5		**TOTAL NUMBER OF COMMENTS = 2**
Research 7			
7	Quality research supported 100%	7	Research would not come out well
7	To be part of a successful research team	7A	Performance now safety net of research supervisor removed
7	Good research opportunities		
7	Good publications		
7A	Develop research expertise		
	TOTAL NUMBER OF COMMENTS = 5		**TOTAL NUMBER OF COMMENTS = 2**

* Expanded list of HEFCE Aspects is given as Appendix G

Table 7.1 continued

Academic Staff/Research Fellows

Aspect Code	HOPES	Aspect Code	FEARS
Departmental support for colleagues 8			
8	Stable environment to do research	8	Teaching level would be too high
8	Want to be left to do research, not teaching and administration	8	Would be given teaching load
8	Good career move	8	Could I keep up/cope with paperwork/ required curriculum documentation etc.
8	To be left alone to get on with my work	8	Coping with time tabling exercise, especially for third years
8A	That the people would be friendly and co-operative	8A	Feeling of being a "new boy" in a closed shop
		8A	Not being successful
		8A	People not friendly
		8B	Would not be able to make a contribution to optometry as it is not my discipline
		8B	That self-confidence that I could do the job would be unfounded
		8B	An optometry department might not have expertise needed for related areas
	TOTAL NUMBER OF COMMENTS = 5		**TOTAL NUMBER OF COMMENTS = 10**

There were no comments in Aspects 1, 2, 3, 4 or 9

Table 7.2

Staff interviews: *Expectations of clinical demonstrators and postgraduate demonstrators expressed as 'Hopes' and 'Fears', categorised by the expanded list of HEFCE Aspects* *

Clinical and Postgraduate demonstrators

Aspect Code	HOPES	Aspect Code	FEARS
Learning resources 5			
5B	That there would be a good library	5B	That the library would be inadequate
5D	Networked computers available		
	TOTAL NUMBER OF COMMENTS = 2		**TOTAL NUMBER OF COMMENTS = 1**
Quality Assurance and enhancement 6			
6C	That I would be good at my work		
6C	To be successful		
6F	That everyone would be enthusiastic about teaching		
	TOTAL NUMBER OF COMMENTS = 3		**TOTAL NUMBER OF COMMENTS = 0**
Research 7			
		7	What I would have to do for the PhD
	TOTAL NUMBER OF COMMENTS = 0		**TOTAL NUMBER OF COMMENTS = 1**
Departmental support for colleagues 8			
8A	To have helpful colleagues	8	Not being able to communicate very well with students
		8	Having to teach for the first time
		8	Recalling undergraduate work after a time in practice
		8A	Did not know the required standard for the PhD - might be more than I could handle
	TOTAL NUMBER OF COMMENTS = 1		**TOTAL NUMBER OF COMMENTS = 4**

* Expanded list of HEFCE Aspects is given as Appendix G

There were no comments in Aspects 1, 2, 3, 4 or 9

Table 7.3

Staff interviews: *Expectations of technical and secretarial staff expressed as 'Hopes' and 'Fears', categorised by the expanded list of HEFCE Aspects* *

Technical and secretarial staff

Aspect Code	HOPES	Aspect Code	FEARS
Quality assurance and enhancement 6			
6C	Continuous personal learning	6C	Not trained to fill newer, more responsible role outside existing expertise
6C	Involved in some teaching	6C	To progress academically
6C	Good platform to progress		
6C	Gain management/supervisory experience		
6C	That I could broaden my knowledge		
	TOTAL NUMBER OF COMMENTS = 5		**TOTAL NUMBER OF COMMENTS = 2**
Research 7			
7	To do more research		
	TOTAL NUMBER OF COMMENTS = 1		**TOTAL NUMBER OF COMMENTS = 0**
Departmental support for colleagues 8			
8	To be able to organise the office better	8	Not do a good job
8	Achieve the efficient running of the office	8	Supervising others - do not enjoy this
8	Do a good job and help colleagues	8	Not knowing how to tackle some problems
8	Achieve job satisfaction in a career move	8	Was too inexperienced
		8	Had not taught the subject - did I know enough?
		8	Starting a new job
		8A	Let others down
		8A	Being out of my depth
		8A	Not performing to expectations of colleagues
		8A	Ageism
		8A	Could be transferred to another department
		8A	Not being able to do the job as well as people hoped

* Expanded list of HEFCE Aspects is given as Appendix G

Table 7.3 continued

		8A	Getting bogged down in paperwork (comes with responsibility!)
		8A	Being perceived as bossy in changing personal relationships
	TOTAL NUMBER OF COMMENTS = 4		**TOTAL NUMBER OF COMMENTS = 14**
Institutional management 9			
		9	Insecurity of working on a contract
	TOTAL NUMBER OF COMMENTS = 0		**TOTAL NUMBER OF COMMENTS = 1**

There were no comments in Aspects 1, 2, 3, 4, or 5

Academic staff and research fellows

The majority of 'hopes' and 'fears' fall within Aspects 8, 7 and 6 (Departmental support for colleagues; Research; and Quality assurance and enhancement), that is, they are largely concerned with issues at the personal and departmental level rather than the institutional or programme level. Of comments on 'hopes' and 'fears' 45% fall within Aspect 8 - Departmental support for colleagues; 22% fall within Aspect 7 - Research, and 22% within Aspect 6 - Quality assurance and enhancement.

There are no comments within Aspects 1, 2, 3 or 4 (Curriculum design, content and organisation; Teaching, learning and assessment; Student progression and achievement and Student support and guidance).

The comments within Aspect 6 are concerned with personal development and a wish to be successful in academic work, particularly research. These aspects are also reflected in Aspect 7. In Aspect 8 the 'hopes' are to be left to get on with research and not be burdened with teaching and administration. The fears are largely to do with coping with the administration of the undergraduate programme, and to the possibility of not being able to make a contribution to the specialist optometry programme.

Clinical and postgraduate demonstrators

Not many 'hopes' and 'fears' were expressed by this group, but the largest number of comments (36%) fell within Aspect 8 (Departmental support for colleagues). Most concerns were to do with teaching for the first time. The need for learning resources (libraries and computers) was also expressed. There are no comments within Aspects 1, 2, 3, 4 or 9.

Technical and secretarial staff

The majority of comments (69%) made by the technical and secretarial staff fall within Aspect 8 (Departmental support for colleagues). The 'hopes' are concerned with doing a good job. The fears are also largely concerns about performance. There is a strong desire to do well and not to let others down. Interpersonal relationships are clearly important. Of the total number of comments 23% are within Aspect 6 (Quality assurance and enhancement) and show concerns for continuous personal career development. There are no comments within Aspects 1, 2, 3, 4 or 5.

General comments on the responses and the method

The comments show a degree of consistency within and between the categories of staff in that they all focus on Aspects 6 and 8, indicating that their concerns lie at the level of the department and with issues of personal development.

In terms of the method and the interview itself, some interviewees who had been in post for some time may have had difficulty answering this question and relating it, as asked, to when they first joined the department. Also, respondents were put on the spot with this question which was asked at the beginning of the interview, before any real rapport with the interviewer could be established. This contrasted with the method used in the student discussion groups where participants were asked to write their responses to this initial question and were given some time for private reflection.

7.1.2 Helpful and unhelpful aspects

Interviewees were asked to say which aspects of the department or programme helped them to function effectively in their particular role and which aspects did not help, or prevented them from functioning effectively. The results are shown in Tables 7.4 and 7.5 on pages 239-242 and 243-248 respectively. The results are categorised by type of staff member and by the expanded list of HEFCE Aspects (Appendix G).

Table 7.4

Staff interviews: *'Helpful' factors, categorised by type of staff member and by the expanded list of HEFCE Aspects* *

HEFCE Aspect Code	Academic staff and research fellows	HEFCE Aspect Code	Clinical and Postgraduate demonstrators	HEFCE Aspect Code	Technical and secretarial staff
Teaching learning assessment 2					
2A	Having Postgraduates around for practical sessions (large classes)	2B	Don't know - what I do is self-contained. Don't know much about what else students do		
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 1**		**NUMBER OF COMMENTS = 0**
Student Support and guidance 4					
4A	I like and am sympathetic to the students				
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 0**		**NUMBER OF COMMENTS = 0**
Learning resources 5					
	Resources are very good				
5A	Very good teaching facilities in the department				
5A	Access to IT: PowerPoint to do slides, the equipment etc.				
				5C	Feedback from students and others re equipment faults etc
5E	Lecture rooms pleasant, well-designed				
5E	G03 a good lecture theatre				
5E	Physical layout of the department is excellent				
5E	Campus is super				
5F	Do not have to worry about provision of visual aids	5F	Equipment is already prepared for me		
5F	Secretarial and receptionists' help is fantastic				

* Expanded list of HEFCE Aspects is given as Appendix G

Table 7.4 continued

HEFCE Aspect Code	Academic staff and research fellows	HEFCE Aspect Code	Clinical and Postgraduate demonstrators	HEFCE Aspect Code	Technical and secretarial staff
5F	Have some very good secretarial and technical staff				
	NUMBER OF COMMENTS = 10		**NUMBER OF COMMENTS = 1**		**NUMBER OF COMMENTS = 1**
Quality assurance and enhancement 6					
6C	I enjoy ("get a charge out of") teaching			6C	New ideas from new academic staff - worked with them as a team
				6C	Benefited from seeing new approaches e.g. use of computers
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 0**		**NUMBER OF COMMENTS = 2**
Research 7					
		7	PhD supervisor is involved and very good. Helps me quite a lot		
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 1**		**NUMBER OF COMMENTS = 0**
Departmental support for colleagues 8					
	Blocked teaching time to leave free days to do research	8	Accessibility of my research group		
8	There is a lot of freedom for the individual academic			8A	Supportive head of department (and other colleagues)
8	Department encourages research			8A	(Belief that) people trust me
8	We are a very committed crew			8A	Strategy of sets of teams in the department
8	General structure of the organisation, try to ensure admin. & tech. work done by support staff			8A	Staff are sure where responsibility lies
8A	Very efficient secretaries - good support - releases time			8A	Small groups for problem-solving
8A	The other members of staff with whom I work on teaching			8A	Given responsibility to make decisions and see them through
8A	Exchange of ideas with colleagues mutually beneficial			8A	Back-up and support from other members of staff in the department

Table 7.4 continued

HEFCE Aspect Code	Academic staff and research fellows	HEFCE Aspect Code	Clinical and Postgraduate demonstrators	HEFCE Aspect Code	Technical and secretarial staff
8A	Students are together and has a communal feel			8A	Advice from predecessor still available
8A	At the end of the day it is about the morale and quality of the personnel			8A	Have some very enthusiastic people working for me
8A	There is a pretty good atmosphere in the department			8A	A reasonable level of communication between the academic and technical staff
8A	Staff attitudes are more positive than in the '70s			8A	I need and get co-operation from staff and students
8A	In '70s had people left with a technical college concept - gone now			8A	If people, and you, are happy it helps you work
8A	Infrastructure to help funding applications			8A	Need a team who can work largely unsupervised
8A	Supportive Head of Department			8A	Most staff pull together
8A	The people - the technical support staff and the academics			8A	Supportive boss
8A	Department works quite well as a unit			8A	Interpersonal relationships
8A	Our unit is friendly and open, everyone gets on well			8A	I rely on everyone who deals with the clinics to comply with timetables
8A	Professor is very supportive			8A	The attitude of the majority of the staff is very helpful
8A	Our own little world is very nice			8A	A lot of people able and willing to help solve problems
				8A	Overall good teamwork, help largely available
8B	People always come up with the goods - resource limitations are not made apparent			8B	Establishing a system for feedback for downstairs clinics (took time)
	NUMBER OF COMMENTS = 21		**NUMBER OF COMMENTS = 1**		**NUMBER OF COMMENTS = 21**

Table 7.4 continued

Institutional Management 9					
	PRP may have helped				
9	Try to ensure those operating the system get appropriate rewards				
	NUMBER OF COMMENTS = 2		**NUMBER OF COMMENTS = 0**		**NUMBER OF COMMENTS = 0**

There are no comments in Aspects 1 or 3

Table 7.5

Staff interviews: *'Unhelpful' factors, categorised by type of staff member and by the expanded list of HEFCE Aspects* *

Aspect Code	Academic staff and research fellows	Aspect Code	Clinical and Postgraduate demonstrators	Aspect Code	Technical and secretarial staff
Curriculum design, content and organisation 1					
		1	Students vary from year to year in their practical ability		
				1A	Very busy programme, reduces availability of staff
				1A	Students not arriving sufficiently in advance of clinics to check/learn about equipment
				1A	Insufficient gaps in time between lectures and clinics
				1A	Do not know in advance what backgrounds the students have when I help with electives
				1C	Hospital placements becoming difficult to organise
				1C	Hospitals want to know what is the benefit to them
				1C	Little time to investigate what students need
	NUMBER OF COMMENTS = 0		**NUMBER OF COMMENTS = 1**		**NUMBER OF COMMENTS = 7**
Teaching learning assessment 2					
2A	No. of students reduces personal effectiveness in practical classes			2A	Quite often academics have not thought about what they need - they live for the minute in teaching
2A	Tutorials for 45 people require different strategies to try to break into smaller discussion groups			2A	Need to communicate better in the department to help us help with practicals

* Expanded list of HEFCE Aspects is given as Appendix G

Table 7.5 continued

Aspect Code	Academic staff and research fellows	Aspect Code	Clinical and Postgraduate demonstrators	Aspect Code	Technical and secretarial staff
2A	Cannot give personal attention to all students in practicals (although postgraduates help)			2A	Only told at the last minute about students' *electives - leaves us ill-prepared to give help*
2A	After 45 in a group, lose homogeneity				
		2B	Students say they have not been taught something even though it is on the syllabus, I do not know if they have or not		
		2B	Topics can get dropped due to time pressures - *timing can be a defect in the course*		
	NUMBER OF COMMENTS = 4		**NUMBER OF COMMENTS = 2**		**NUMBER OF COMMENTS = 3**
Student Support and guidance 4					
	Students don't seem *able to cope with* pressure so much		Students do not structure their own learning	4	Many students do not read notices, or programme guides
	There may be more pressure on current students			4	Students do not read notices - and lose programme guides
	NUMBER OF COMMENTS = 2		**NUMBER OF COMMENTS = 1**		**NUMBER OF COMMENTS = 2**
Learning resources 5					
		5B	Lack of journals in the library		
5B	Something is not quite right about the library; students go to Birmingham	5B	Electronic network is slow and out of date - does not compensate for lack of journals		
5B	In theory electronic information is a good idea, in practice it is an irritant	5B	Some very low use journals are kept, plus some all optometrists and students receive		
5C	Some of the equipment is a bit "tatty" - wear and tear and not enough replacements	5C	Some equipment is ageing and temperamental - issue is finance	5C	Could do with more equipment in the labs.

Table 7.5 continued

Aspect Code	Academic staff and research fellows	Aspect Code	Clinical and Postgraduate demonstrators	Aspect Code	Technical and secretarial staff
5C	Equipment problems more evident for first years without ophthalmoscopes				
5D	Computer support not so good. Have lost data from network	5D	Central support for computers is a problem- is needed locally		
5D	Information Services staff are good but hard to get hold of	5D	Is a real nuisance not being able to access the servers from your office		
5F	Lack of technical help, compared with overseas departments				
	NUMBER OF COMMENTS = 7		**NUMBER OF COMMENTS = 6**		**NUMBER OF COMMENTS = 1**
Quality assurance and enhancement 6					
6C	Need more training for teaching, plus chance to learn form more experienced colleagues				
6C	Need more help at the beginning of teaching and better mentoring scheme				
6C	Not enough time to learn/research if other ways of might be better, e.g. use of computers in teaching				
	NUMBER OF COMMENTS = 3		**NUMBER OF COMMENTS = 0**		**NUMBER OF COMMENTS = 0**
Research 7					
	Grants come more easily if you are at Oxbridge				
	Pressure to protect junior staff from excessive teaching hours - to enable research				
	NUMBER OF COMMENTS = 2		**NUMBER OF COMMENTS = 0**		**NUMBER OF COMMENTS = 0**

Table 7.5 continued

Aspect Code	Academic staff and research fellows	Aspect Code	Clinical and Postgraduate demonstrators	Aspect Code	Technical and secretarial staff
Departmental support for colleagues					
8	Ordering system is a bit slow - partly to do with money shortage		Department has in-fighting	8	Had no guidelines to work on
8	Huge disparity between teaching and research and the pressure put on research		No-one really wants to get together	8	Did not know what was expected of me
8	Have to feed ambition yet squeeze out contributions to the programme		Inter-departmental politics	8	Was no-one to follow
8	Main hindrance to running a good undergraduate programme is RAE - concentrates the mind narrowly			8	Nothing in writing
				8	Lack of information - or too late
				8	Temporary staff need more help
				8	Everything seems a last minute rush
				8	Not enough people at certain times
				8	Not many applications for support posts advertised
				8	Covering for absence
				8	Changes not always communicated to self or students
				8	Need more, and earlier, planning with support staff involvement
				8	Not knowing where people are
				8	Need a clinic manager to deal with problems
				8	Reception desk system needs improving
				8	Lack of communication
				8	No consultation re. New tasks

Table 7.5 continued

Aspect Code	Academic staff and research fellows	Aspect Code	Clinical and Postgraduate demonstrators	Aspect Code	Technical and secretarial staff
				8	Problem with finance resolved with face-to-face meeting - communications again!
				8	Lack of communication
					Sometimes academics are too busy to tell you what help they need today
				8A	Demands from academics for instant attention reduces efficiency of working practices
	NUMBER OF COMMENTS = 4		**NUMBER OF COMMENTS = 3**		**NUMBER OF COMMENTS = 21**
Institutional Management					
9					
	Internal market structure - bureaucracy			9	Budget restrictions - non renewal of contracts - not conducive to department-wide commitment
9	Liaison with different departments				Environment is unstable - short contracts leads people frequently to be looking for new jobs
9	Need more support with grant applications				
9	Promotion exercise				
9	Paperwork and committees				
9	Promotions based on research not teaching				
9	Good teaching not recognised or rewarded				
9	Whole university is unduly geared towards research				
9	Staff do not perceive commitment to the undergraduate programme will get them far in career terms				
9	Most barriers are at university level, e.g. promotions and short term contracts				

Table 7.5 continued

Aspect Code	Academic staff and research fellows	Aspect Code	Clinical and Postgraduate demonstrators	Aspect Code	Technical and secretarial staff
9	University not flexible in personnel matters				
9	Seem to operate other rules/conditions from other universities				
9	The university's financial position				
9	Staff chosen for research profile				
9	Renewal of contracts depends on building a research profile				
	NUMBER OF COMMENTS = 15		**NUMBER OF COMMENTS = 0**		**NUMBER OF COMMENTS = 2**

There were no comments in Aspect 3

Helpful factors

Academic staff most frequently listed issues categorised within Aspect 8, and specifically 8A (*support given personally to members of staff*) as the most helpful features. The positive attitudes of departmental colleagues and the help received from them were emphasised. Twenty percent of comments were about learning resources, especially Aspects 5E and 5F (teaching and social accommodation, and technical/support staff). Comments from the clinical and postgraduate demonstrators were again few in number, but were concerned on the whole with their own PhD research rather than the BSc programme. Of the comments from the secretarial and technical staff 87% fell within Aspect 8, and echo those of the academic staff and research fellows.

Unhelpful factors

Almost half of the 'unhelpful factors' mentioned by the academic and research staff are within Aspect 9 (Institutional management). Promotion for research performance rather than teaching is expressed several times. One comment says "the whole university is unduly geared towards research". The bureaucracy is also seen by some as a hindrance. The next largest group of comments fall within Aspect 5 (Learning resources). The library and IT provision receive some criticism. Under Aspect 8, the pressure to do research is seen as having a negative impact on the undergraduate programme. Comments within Aspect 2 show concerns about teaching strategies for large groups of students.

The views of the postgraduate and clinical demonstrators run in some respects contrary to other opinions expressed, for example they have some negative comments about the sense of community in the department. They share some of the criticisms of the library and IT services.

The technical and secretarial staff have comments in all categories except 3, 6 and 7. Most of the unhelpful factors mentioned by those in this group, however, are concerned with the need for improved communications. They need to know more about what is expected of them and when. They would also like greater involvement in planning.

7.1.3 Additional quality issues

Staff were also given an opportunity to raise any more general issues of the quality of the department/programme and to comment on their level of satisfaction with it. This resulted in a large number of comments which are presented in Table 7.6. on pages 250-257.

Table 7.6

Staff interviews: *'Additional quality issues', given by each of the three categories of staff, categorised by the expanded list of HEFCE Aspects* *

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
Curriculum design, content and organisation 1					
1	Is little latitude for students to do something different - exacerbated by high numbers	1	As a clinical demonstrator I am not notified of results - have to go and look (lecturers linked to computer network?)		
1	Matching what is needed for the students to achieve what you want for them, & resources available to do it				
1	Trying to balance on the u/grad course, all the conflicting requirements of different stakeholders				
1	Academic content vs. Practical content, university vs. Employer "conflicts"				
1A	Course has been efficient and well-organised	1A	'Contact lenses' is quite good, they have a very structured environment in the third year		
1A	U/grad programme is well thought out and staff put a lot of effort into it	1A	Need to start some subjects earlier and somehow integrate them into the second year - final year is really only two terms		
1A	The course is well set out and improving	1A	I think it is quite an easy course in terms of actual coursework; essays etc. are always over the Easter or Christmas holidays		
1A	Have very good people recognised world-wide for their research - reflected in u/grad programme	1A	There is a lack of continuity in the teaching - series of lectures are given by different people		
1A	Need quality but have to get past the base line of safety				

* Expanded list of HEFCE Aspects is given as Appendix G

Table 7.6 continued

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
1C	Course is well-structured				
	TOTAL COMMENTS = 10		**TOTAL COMMENTS = 5**		**TOTAL COMMENTS = 0**
Teaching, learning, assessment 2					
2A	Heavy reliance on outside people for clinical teaching (some whole units of assessment in the exams.)	2A	Most students know you are a post grad. and that makes you more accessible than a member of staff	2A	Should be more strict on students' attendance at clinics
2A	Discontent of third years ref. shortage of "own" staff - consequences can spread to other student groups	2A	Ratio of optometrists in relation to staff/lecturers to number of students that they have to teach is high. They are under a lot of pressure	2A	Students can go to lectures with pre-prepared notes
2A	Outside assistance (staff) harder to organise	2A	I feel we are a resource that could be more effectively used		
2A	Staff/student ratios do not compare favourably with other Optometry programmes	2A	As a student, I did not see enough patients with problems. I knew the theory		
2A	Third year is clinically oriented and needs small groups, but there are not enough clinically-qualified staff	2A	In terms of making them go and find out for themselves, there is not much of that. They would start to learn for themselves, also start them on IT skills		
2A	Tension of GOC requirements for level of clinical teaching (small groups)	2A	The teaching load is relatively heavy. Even good teachers don't seem to want to teach. They want to be more involved with their research		
2A	Increase in number of students with existing staff is biggest problem - especially practicals	2A	As a post grad I do not do tutorials or marking but I am as well-qualified as the visiting lecturers. I think tutorials would be good - more interactive		
2A	Students will consume but will not participate	2A	In a tutorial you would be in a group rather than on an individual basis, as when demonstrating		

Table 7.6 continued

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
2A	Sixth Form work gives little room for initiative and does not prepare them for this	2A	I do not think they are using me enough. As a post grad you can only be a demonstrator in a laboratory		
2A	Sixth Form preparation for subjects such as maths is "dreadful"	2A	It is difficult when you have a large number of people and the practical nature of the subject to get patients for them to look at, or people to show them how		
2A	Students gasp as lecturers put up simple equations				
2B	We ought to make greater efforts to make links between courses				
2B	Could have seminars with two lecturers making the link between what they each teach			2B	Department offers amazing support to students - very detailed handouts
2C	Difficult to comply with 4:1 ratio in the final year with the numbers we have				
2C	Students who want to go into business question the relevance of the more theoretical parts of the course				
	TOTAL COMMENTS = 15		**TOTAL COMMENTS = 10**		**TOTAL COMMENTS = 3**
Student progression and achievement 3					
3	Pleased with the standard of students, who do work reasonably hard - First Years most then more absentees in Third Year.	3A	Students say they are groping in the dark a bit at the end of the year - is this true?		
3	Students coming to us from school will not take responsibility for their own actions				
	TOTAL COMMENTS = 2		**TOTAL COMMENTS = 1**		**TOTAL COMMENTS = 0**
Student support and guidance 4					
4	Need to hire more people; student contact has to be high. Losing money to weak departments	4	I think that as an undergraduate you are very aware that they are doing something other than teaching	4	Absences from clinics becoming more common

Table 7.6 continued

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
4A	Students get a lot of support within the laboratory classes				
4A	Would like to have more time with individual students; remedial work if necessary rather than plunging onwards through the timetable				
4A	Need to step back sometimes and see why some students are not doing so well				
4A	Students get a raw deal these days in terms of personal contact				
4A	Problem is that tutorials are very labour intensive, putting extra staff in is not rewarded				
4B	Motivation of some students is questionable - do they want to help patients or get the high salary?			4	Cannot give the time we would like to individual students
4B	Should we interview students to improve selection?			4	Letters from Senior Tutor does not seem to deter students from not attending clinics
4C	Is hardly anything in the way of tutorials or feedback on the work that they do	4C	No formal structure for the personal tutor system. At Bradford had a tutor and HAD to see him x times per term		
4C	Students do not get enough continuous feedback	4C	Here you ask to see students and they do not turn up		
4C	Must be very hard for students to keep motivated when they do not get feedback	4C	As a student at Bradford you used to have to go over exam results with the tutor - here results are posted up		
		4D	For the undergraduates there are some subjects which are better than others		
	TOTAL COMMENTS = 11		**TOTAL COMMENTS = 5**		**TOTAL COMMENTS = 3**

Table 7.6 continued

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
Learning resources 5					
		5	For my PhD work I'm satisfied with the facilities, but sometimes it is difficult to spend time with supervisor		
				5D	Appropriate use of technology in developing teaching programmes
				5F	Dept should address the untapped resources of the technical support staff's contribution to teaching programmes
				5F	Many technicians have significant technical skills and can teach them/be developed to teach them (to u/grads)
Aspect Code	**Academic staff/Research fellows**	**Aspect Code**	**Clinical and Postgraduate Demonstrators**	**Aspect Code**	**Technical and Secretarial staff**
	Academic staff/Research fellows		**Clinical and Postgraduate Demonstrators**		**Technical and Secretarial staff**
				5F	Teaching responsibility would be motivating for technical staff
	TOTAL COMMENTS = 0		**TOTAL COMMENTS = 1**		**TOTAL COMMENTS = 4**
Quality assurance and enhancement 6					
6	Standard the students were at was lower than expected				
6	A lot of students had very little skill in maths and physics				
6	Some students had not done A level maths and physics				

Table 7.6 continued

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
6	Student view re. theory is changing as we have better qualified students, after initial drop post health service de-regulation				
6B	First year group is very vocal through staff/ student meetings	6B	Maybe half an hour a week with students alone, not with patients		
6C	Staff amenable to change, want to do things better, to define what we are trying to do, set our goals better and how to achieve them	6B	It would mean an increase in workload but increase their feedback as they go along	6C	Some lecturers could do with improving their presentations
6C	Aston gives opportunities for career advancement, so good people leave	6B	Could be improved by more time for student feedback on the work of the clinical demonstrators	6C	Have new slide making equipment - some do not use it at all
6C	On the whole most academics see teaching as a chore	6B	Possibly need more feedback between students and lecturers		
6C	Peer group appraisal started within the department but it has not become a major feature			6C	More closely targeted central Staff Development programmes. TQM not accepted by all academics. Perceived as supplanting support staff programmes
				6F	I think the students are very pleased with the course
	TOTAL COMMENTS = 9		**TOTAL COMMENTS = 4**		**TOTAL COMMENTS = 4**
Research 7					
		7	Can see access to supervisor getting worse with staff shortages - he'll be doing more teaching		

Table 7.6 continued

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
		7	I'm not as badly off as some - if it's crucial I get an appointment, but some publications are delayed		
	TOTAL COMMENTS = 0		**TOTAL COMMENTS = 2**		**TOTAL COMMENTS = 0**
Departmental support for colleagues					
8	I think very highly of the quality of the programme and of the department as a whole	8	Staff turnover is high	8	We have very committed team, but there are literally not enough staff to do required work in the hours we are here
8	A lot of changes going on at the moment and a lot of people getting quite nervous	8	Work of technicians needs streamlining (or maybe they need more of them). Changeover of people week by week introduces chaos	8	Outside companies supplying software have been very unhelpful
8	Uncertainty about future of research because of academic staff departures	8	In some ways we (clinical demonstrators) are members of staff, in other ways not	8	We are understaffed (in all categories)
8	Department as a whole operates fairly well			8	We need more communication as to what is our expected role in the u/grad programme
8	Is a fairly close-knit community which works fairly efficiently			8	My satisfaction is quite high
8	The quality of the department is the staff			8	Are trying to put together an academic handbook detailing central services available

Table 7.6 continued

Aspect Code	Academic staff/Research fellows	Aspect Code	Clinical and Postgraduate Demonstrators	Aspect Code	Technical and Secretarial staff
8	Low morale caused by change and staff turnover but it is easy to forget the many good things about Aston. It is better than perhaps we make out at the moment			8	Some secretarial jobs could be redistributed or redesigned
8	The general quality is very good			8	The clinics are very well run but I depend on many people
				8	If have too much work, students don't turn up and don't know effects on clinics
				8	Could improve presentation of handouts if they were ready mid-August, not last minute
				8	Secretarial availability and staff/programme needs need reviewing
	TOTAL COMMENTS = 8		**TOTAL COMMENTS = 3**		**TOTAL COMMENTS = 11**
Institutional management 9					
9	University system needs to ensure teaching efforts are weighted equally with research				
9	Many people really are good teachers but system does not encourage putting effort into it				
9	We are successful, but our success is being used to underpin weaker areas in the university				
	TOTAL COMMENTS = 3		**TOTAL COMMENTS = 0**		**TOTAL COMMENTS = 0**

On the whole, comments in this section elaborate views expressed in the earlier sections, but they also offer an important, fairly detailed insight into what each group perceives the major issues to be. The academics are conscious of the conflict between the pressure to do research and to provide a high quality undergraduate programme (as shown by comments listed under Aspects 9 and 6C). Some academics clearly prefer research and are encouraged to engage in it. Comments under Aspect 1 show that academics are aware of the diverse needs of their stakeholders. Aspect 2 shows concern about student numbers and staff student ratios. There is also the view that the schools have not prepared students well for undergraduate work and that the standard is low in some subjects, notably mathematics. The motivation of students following this programme is also questioned - do they "want to help patients or to get a high salary?" There is also acknowledgment that students do not get enough personal help. This is because of staff student ratios. They are generally pleased with the "community spirit" in the department.

Many of these views are shared by the clinical and postgraduate demonstrators but some see themselves as an under-used resource, perhaps slightly on the periphery of the department (comments listed under Aspect 2 and also Aspect 8). Some technical and secretarial staff are concerned about students not attending the clinics. Some technicians also consider that their abilities and skills are under-used and that they could make a useful contribution to teaching.

7.1.4 Ways in which expectations and experience did not match

Interviewees were also asked whether, now they are in post, their initial hopes and fears had been founded. In summary, the majority of comments by staff in each category are favourable and fears were unfounded. Hopes for good working relationships within the department and for a strong research environment have been fulfilled. Comments from technical staff indicate a desire to be involved more in academic work, particularly to support research. Concerns about institutional management of staff promotion and numbers are raised by academic staff.

7.1.5 Most significant issues

Individual interviewees in the three categories of staff gave the following issues as the most important to them:

a) Academic staff and research fellows

- Employment and retention of quality academic staff
- Sufficient staff to teach and research
- Increased number of optometric staff
- The department to keep its own earnings
- Mentoring/tutoring staff new to teaching
- More help with the administration of research grant applications
- Appoint 5 optometrists and 1 neurobiologist

b) Clinical and postgraduate demonstrators

- Improve the research rating
- More recognition of worth (at university level) to encourage staff to stay
- Promotion, not just dependent on having a First Class degree, or on research record

c) Technical and secretarial staff

- Give more choice in the third year elective study - to improve innovative aspects
- More staff
- Increase the number of academic staff
- Improve the computer ordering system
- More objectivity in performance assessments and pay awards
- Need to know that the future is going to look more certain
- To be able to retain the income we earn as a department
- Retain ownership of recruitment and development of own team
- The university to move into a more stable financial position
- Recognition by the university of the department's specific financial difficulties with clinical teaching programmes.

7.2 Results of the staff questionnaire

To confirm, complement and quantify the data collected from the interviews and other data sources, a staff survey was conducted using a questionnaire. The specific purpose of the survey was to collect quantitative data on the staff's view of the quality of the educational provision: what are their expectations and perceptions of the quality of the programme. The basic analysis of data from the questionnaire comprised calculating the mean expectation scores and mean perception scores for each of the features in each of the categories, and also calculating the difference in these scores for each feature, i.e. Expectation minus Perception. The responses were classified according to the category of staff to which the respondents belonged. Total results, i.e. for all respondents, were also computed.

7.2.1 Expectations

Table 7.7 on pages 261-268 gives the mean expectation scores for the respondents in each of the staff categories, and for all categories. The results for each feature are presented in the groupings and order in which the features were included in the staff questionnaire (Appendix I).

There is not the same high level of consistency in the mean expectation scores of each of the groups of respondents as there was between the three student categories. In Section 2 of the staff survey (The environment and the culture), for example, Feature 2.4 ("Operate within a department where individual views are taken into account") shows a difference in mean scores between the three categories, with academics having a higher expectation of this than the other two categories. In Section 3 (Quality assurance and enhancement), secretarial and technical staff and clinical and postgraduate demonstrators have a higher expectation than academic staff that employers' views should be incorporated into the approval and review of the programme (Feature 3.7). There is a range of views about Feature 4.2 ("Interview prospective students"). In Section 8 (Learning Resources for staff and students, student support and guidance), technical and secretarial staff have a higher expectation than the other two groups that students' attendance at lectures, tutorials and practicals should be monitored (Feature 8.5).

Table 7.7

Staff Survey: *Mean Expectation Scores for the respondents to the questionnaire survey, classified by category of staff and all staff categories*

Section 2: The environment and the culture

		MEAN EXPECTATION SCORES			
Feature		Academic	Clinical and PG Demonstrators	Technical/ Secretarial	All
2.1	Operate within a department where staff and students have a shared sense of purpose	6.29	6.13	6	6.20
2.2	Operate in a department where individuals are given a clear view of what they are expected to achieve	6.43	6.88	6.29	6.50
2.3	Operate within a department which is well integrated into the university	5.29	5.75	5.42	5.45
2.4	Operate within a department where individual views are taken into account	6.43	6.00	5.75	6.00
2.5	Reward staff for high quality research	6.43	5.25	6.04	5.95
2.6	Reward staff for high quality work with undergraduates	6.43	5.88	6.50	6.30
2.7	Reward staff for their contribution to the department's success	6.43	5.75	6.67	6.35
2.8	Regard teaching and research equally as academic activities	5.86	5.88	6.67	6.20
2.9	Ensure that the disparate skills of all staff are used to the best advantage of students and staff	6.71	6.63	6.38	6.60
2.10	Take place in an attractive, pleasant campus	5.86	4.88	5.50	5.45
2.11	Provide suitable accommodation for administrative purposes	6.29	6.13	5.42	5.90
2.12	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	6.71	6.75	6.00	6.45

Table 7.7 continued

Section 3: Quality assurance and enhancement

		MEAN EXPECTATION SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
3.1	Regularly receive feedback on the programme from students	6.57	5.88	6.13	6.25
3.2	Ensure that feedback on the programme from students leads to improvements	6.57	6.00	6.00	6.25
3.3	Have staff who engage in research	6.43	6.13	6.13	6.26
3.4	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	6.86	7.00	6.58	6.80
3.5	Have staff with a high academic standing and reputation	6.57	5.88	6.46	6.35
3.6	Adhere to published timetables e.g. lectures not cancelled, appointments kept	6.86	6.38	6.71	6.70
3.7	Incorporate the views of employers into approval and review of the programme	4.71	5.13	6.25	5.21
3.8	Identify good practice in teaching and learning and share ideas and experience with colleagues	6.71	5.88	6.29	6.35
3.9	Provide professional and personal career development to meet my requirements	6.29	5.67	5.83	6.00
3.10	Appraise individual staff members	6.29	4.75	6.54	6.05
3.11	Encourage staff to be innovative (do things in new ways)	6.57	5.75	6.33	6.26

Table 7.7 continued

Section 4: Student recruitment

		MEAN EXPECTATION SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
4.1	Give prospective students adequate information about the programme	6.57	6.13	6.71	6.55
4.2	Interview prospective students	5.43	4.38	6.25	5.45
4.3	Recruit only students with high academic ability and entrance qualifications	6.29	5.38	5.79	5.85
4.4	Give recognition at recruitment to prior learning and/or work experience	4.57	6.00	5.67	5.45
4.5	Give recognition to students with different academic backgrounds	5.29	4.75	5.50	5.21

Table 7.7 continued

Section 5: Teaching & learning

		MEAN EXPECTATION SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
5.1	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	6.43	7.00	6.71	6.70
5.2	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	6.57	5.75	6.46	6.40
5.3	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study	6.43	5.88	6.38	6.30
5.4	Help students to make the transition school to undergraduate study	6.00	6.75	6.38	6.35
5.5	Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework	5.86	6.38	5.88	6.00
5.6	Have teachers who make substantial use of their own research in their teaching	5.71	5.88	5.83	5.80
5.7	Have teachers who set students regular work for assessment	5.57	5.13	6.00	5.47
5.8	Have teachers who provide lecture notes and reading lists which facilitate study	6.00	6.25	6.42	6.20
5.9	Have teachers who link their lectures/tutorials to other parts of the programme	5.71	6.25	6.25	6.05
5.10	Have students who are able to work on their own with little guidance from their teachers	5.71	4.38	5.08	5.20

Table 7.7 continued

Section 6 The curriculum

		MEAN EXPECTATION SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
6.1	Lead students to employment as an optometrist	5.86	5.38	6.25	5.79
6.2	Be able to lead students to employment other than as an optometrist	4.71	3.63	3.88	4.26
6.3	Facilitate students' progression to postgraduate study	6.14	5.00	4.63	5.47
6.4	Encourage students' high academic achievement above all else	6.14	3.63	5.38	4.95
6.5	Concentrate on giving students subject knowledge required by the profession	5.00	5.63	6.38	5.63
6.6	Develop students' problem-solving skills	6.14	5.75	6.13	6.16
6.7	Develop students' ability to communicate effectively (written and oral)	6.14	6.13	6.50	6.37
6.8	Provide good opportunities for student team-work	5.14	4.67	5.63	5.28
6.9	Encourage students to be innovative (do things in new ways)	5.71	5.38	5.13	5.63
6.10	Develop students' ability to use information technology	6.43	5.88	5.75	6.11
6.11	Develop students' self-management skills	5.71	6.13	5.63	5.95
6.12	Include adequate work experience for students, e.g. hospital placements	5.86	5.75	6.88	6.16
6.13	Offer students some subjects/topics as options (modules)	5.14	4.75	6.00	5.11

Table 7.7 continued

Section 7: Student assessment, progression and achievement

		MEAN EXPECTATION SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
7.1	Give students useful feedback from assessed work to help them channel their improvement efforts	6.57	6.75	6.00	6.47
7.2	Undertake student assessment in a work environment where appropriate	5.43	5.88	5.88	5.72
7.3	Base final student assessment on examination only	2.86	1.63	2.75	2.42
7.4	Base final student assessment on course work and examinations	6.29	6.50	6.13	6.37
7.5	Result in a qualification which is more highly regarded than similar qualifications from other universities	5.86	4.63	5.50	5.53

Table 7.7 continued

Section 8: Learning resources for staff and students, student support and guidance

		MEAN EXPECTATION SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
8.1	Provide for the welfare of students through a range of support services (financial counselling medical, accommodation)	6.14	5.63	6.00	6.05
8.2	Make study skills advice available to students	6.29	6.13	6.00	6.21
8.3	Have a system which provides adequate individual tuition	5.71	5.50	5.88	5.68
8.4	Timetable tutorials and practicals to give all students a consistent level of help	5.57	6.00	6.50	6.00
8.5	Monitor students' attendance at lectures, tutorials and practicals	4.00	5.38	6.63	5.21
8.6	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	5.14	5.25	5.88	5.42
8.7	Give adequate help to all students with "foundation" subjects such as mathematics and physics	5.00	5.63	5.75	5.37
8.8	Assess need for different levels of help with foundation subjects and provide it selectively to students	5.43	4.88	5.50	5.26
8.9	Give adequate help to students with practical work	6.14	6.13	6.38	6.26
8.10	Have help available to students for all course-work when required	6.14	6.38	5.75	6.16
8.11	Have sufficient and adequately equipped clinics for undergraduate learning	6.00	6.88	6.50	6.47
8.12	Have a library with adequate resources to cater for the learning demands of students	6.71	7.00	6.25	6.68
8.13	Have adequate access for all to information technology facilities (time and location)	6.43	6.63	6.13	6.42
8.14	Have adequate information technology facilities for administrative purposes (fit for purpose)	6.71	6.67	5.88	6.39
8.15	Have accessible technical and support staff to assist all information technology users	6.43	6.63	5.88	6.37
8.16	Have a library with adequate resources to meet research demands	6.86	6.63	6.38	6.63
8.17	Have adequate technical assistance and support for research	6.71	6.38	6.38	6.47

Table 7.7 continued

		MEAN EXPECTATION SCORES			
Feature		Academic	Clinical and PG Demonstrators	Technical/ Secretarial	All
8.18	Have adequate technical assistance and support in the clinics for undergraduate work	6.00	6.88	6.75	6.53
8.19	Have adequate secretarial and administrative support for all staff activities	6.71	5.92	6.25	6.39

7.2.2 Priorities

As a result of the survey it is possible to identify the features of the programme which are considered by the departmental staff to be the most important in meeting their needs. Table 7.8 on pages 269-271 gives the mean expectation scores for all respondents in ranked order, i.e. it indicates which features are the most important to the respondents overall.

Table 7.8

Staff Survey: *Mean Expectation Scores for all respondents in ranked order*

	Feature	Mean Expectation Score	Rank
3.04	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	6.80	1
3.06	Adhere to published timetables e.g. lectures not cancelled, appointments kept	6.70	2
5.01	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	6.70	2=
8.12	Have a library with adequate resources to cater for the learning demands of students	6.68	4
8.16	Have a library with adequate resources to meet research demands	6.63	
2.09	Ensure that the disparate skills of all staff are used to the best advantage of students and staff	6.60	6
4.01	Give prospective students adequate information about the programme	6.55	7
8.18	Have adequate technical assistance and support in the clinics for undergraduate work	6.52	8
2.02	Operate in a department where individuals are given a clear view of what they are expected to achieve	6.50	9
7.01	Give students useful feedback from assessed work to help them channel their improvement efforts	6.47	10
8.11	Have sufficient and adequately equipped clinics for undergraduate learning	6.47	10=
8.17	Have adequate technical assistance and support for research	6.47	10=
2.12	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	6.45	13
8.13	Have adequate access for all to information technology facilities (time and location)	6.42	14
5.02	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	6.40	15
8.14	Have adequate information technology facilities for administrative purposes (fit for purpose)	6.38	16
8.19	Have adequate secretarial and administrative support for all staff activities	6.38	16=
6.07	Develop students' ability to communicate effectively (written and oral)	6.36	18
7.04	Base final student assessment on course work and examinations	6.36	18=
8.15	Have accessible technical and support staff to assist all information technology users	6.36	18=
2.07	Reward staff for their contribution to the department's success equally as academic activities	6.35	21
3.05	Have staff with a high academic standing and reputation	6.35	21=
3.08	Identify good practice in teaching and learning and share ideas and experience with colleagues	6.35	21=
5.04	Help students to make the transition school to undergraduate study	6.35	21=
2.06	Reward staff for high quality work with undergraduates	6.30	25
5.03	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study	6.30	25=

Table 7.8 continued

	Feature	Mean Expectation Score	Rank
3.03	Have staff who engage in research	6.26	27
3.11	Encourage staff to be innovative (do things in new ways)	6.26	27=
8.09	Give adequate help to students with practical work	6.26	27=
3.01	Regularly receive feedback on the programme from students	6.25	30
3.02	Ensure that feedback on the programme from students leads to improvements	6.25	30=
8.02	Make study skills advice available to students	6.21	32
2.01	Operate within a department where staff and students have a shared sense of purpose	6.20	33
2.08	Regard teaching and research equally as academic activities	6.20	34
5.08	Have teachers who provide lecture notes and reading lists which facilitate study	6.20	34=
6.06	Develop students' problem-solving skills	6.15	36
6.12	Include adequate work experience for students, e.g. hospital placements	6.15	36=
8.10	Have help available to students for all course-work when required	6.15	36=
6.10	Develop students' ability to use information technology	6.10	39
8.01	Provide for the welfare of students through a range of support services (financial counselling medical, accommodation)	6.05	40
3.10	Appraise individual staff members	6.05	41
5.09	Have teachers who link their lectures/tutorials to other parts of the programme	6.05	41=
2.04	Operate within a department where individual views are taken into account	6.00	43
3.09	Provide professional and personal career development to meet my requirements	6.00	43=
5.05	Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework	6.00	43=
8.04	Timetable tutorials and practicals to give all students a consistent level of help	6.00	43=
2.05	Reward staff for high quality research	5.95	47
6.11	Develop students' self-management skills	5.94	48
2.11	Provide suitable accommodation for administrative purposes	5.90	49
4.03	Recruit only students with high academic ability and entrance qualifications	5.85	50
5.06	Have teachers who make substantial use of their own research in their teaching	5.80	51
6.01	Lead students to employment as an optometrist	5.78	52
7.02	Undertake student assessment in a work environment where appropriate	5.72	53
8.03	Have a system which provides adequate individual tuition	5.68	54
6.05	Concentrate on giving students subject knowledge required by the profession	5.63	55
6.09	Encourage students to be innovative (do things in new ways)	5.63	55=
7.05	Result in a qualification which is more highly regarded than similar qualifications from other universities	5.52	57
5.07	Have teachers who set students regular work for assessment	5.47	58
6.03	Facilitate students' progression to postgraduate study	5.47	58=
2.03	Operate within a department which is well integrated into the university	5.45	60
2.10	Take place in an attractive, pleasant campus	5.45	60=

Table 7.8 continued

	Feature	Mean Expectation Score	Rank
4.02	Interview prospective students	5.45	60=
4.04	Give recognition at recruitment to prior learning and/or work experience	5.45	60=
8.06	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	5.42	64
8.07	Give adequate help to all students with "foundation" subjects such as mathematics and physics	5.36	65
6.08	Provide good opportunities for student team-work	5.27	66
8.08	Assess need for different levels of help with foundation subjects and provide it selectively to students	5.26	67
3.07	Incorporate the views of employers into approval and review of the programme	5.21	68
4.05	Give recognition to students with different academic backgrounds	5.21	68=
8.05	Monitor students' attendance at lectures, tutorials and practicals	5.21	68=
5.10	Have students who are able to work on their own with little guidance from their teachers	5.20	71
6.13	Offer students some subjects/topics as options (modules)	5.10	72
6.04	Encourage students' high academic achievement above all else	4.94	73
6.02	Be able to lead students to employment other than as an optometrist	4.26	74
7.03	Base final student assessment on examination only	2.42	75

Table 7.9 on pages 272-274 gives, for the respondents in each of the three categories, the 10 features which come at the top and the 10 features which come at the bottom of the lists of ranked expectations classified separately by category of staff.

Table 7.9

Staff survey: ***Features ranked by Mean Expectation Score for each of the three staff categories. The 10 features which came at the top and the 10 features which came at the bottom of the lists of ranked Expectation Scores***

a) Academic staff

	Feature	Mean Expectation Score	Rank
3.04	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	6.86	1=
3.06	Adhere to published timetables e.g. lectures not cancelled, appointments kept	6.86	1=
8.16	Have a library with adequate resources to meet research demands	6.86	2=
2.09	Ensure that the disparate skills of all staff are used to the best advantage of students and staff	6.71	2=
2.12	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	6.71	2=
3.08	Identify good practice in teaching and learning and share ideas and experience with colleagues	6.71	2=
8.12	Have a library with adequate resources to cater for the learning demands of students	6.71	2=
8.14	Have adequate information technology facilities for administrative purposes (fit for purpose)	6.71	2=
8.17	Have adequate technical assistance and support for research	6.71	2=
8.19	Have adequate secretarial and administrative support for all staff activities	6.71	2=
6.08	Provide good opportunities for student team-work	5.14	66
6.13	Offer students some subjects/topics as options (modules)	5.14	66=
8.06	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	5.14	68
6.05	Concentrate on giving students subject knowledge required by the profession	5.00	69
8.07	Give adequate help to all students with "foundation" subjects such as mathematics and physics	5.00	69
3.07	Incorporate the views of employers into approval and review of the programme	4.71	71
6.02	Be able to lead students to employment other than as an optometrist	4.71	71=
4.04	Give recognition at recruitment to prior learning and/or work experience	4.57	73
8.05	Monitor students' attendance at lectures, tutorials and practicals	4.00	74
7.03	Base final student assessment on examination only	2.86	75

Table 7.9 continued

b) Clinical and postgraduate demonstrators

	Feature	Mean Expectation Score	Rank
3.04	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	7.00	1
5.01	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	7.00	1=
8.12	Have a library with adequate resources to cater for the learning demands of students	7.00	1=
2.02	Operate in a department where individuals are given a clear view of what they are expected to achieve	6.88	4
8.11	Have sufficient and adequately equipped clinics for undergraduate learning	6.88	4=
8.18	Have adequate technical assistance and support in the clinics for undergraduate work	6.88	4=
2.12	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	6.75	7
5.04	Help students to make the transition from school to undergraduate study	6.75	7=
7.01	Give students useful feedback from assessed work to help them channel their improvement efforts	6.75	7=
8.14	Have adequate information technology facilities for administrative purposes (fit for purpose)	6.67	10
3.10	Appraise individual staff members	4.75	66
4.05	Give recognition to students with different academic backgrounds	4.75	66=
6.13	Offer students some subjects/topics as options (modules)	4.75	66=
6.08	Provide good opportunities for student team-work	4.67	69
7.05	Result in a qualification which is more highly regarded than similar qualifications from other universities	4.63	70
4.02	Interview prospective students	4.38	71
5.10	Have students who are able to work on their own with little guidance from their teachers	4.38	71=
6.02	Be able to lead students to employment other than as an optometrist	3.63	73
6.04	Encourage students' high academic achievement above all else	3.63	73=
7.03	Base final student assessment on examination only	1.63	75

Table 7.9 *continued*

c) Technical and secretarial staff

	Feature	Mean Expectation Score	Rank
6.12	Include adequate work experience for students, e.g. hospital placements	6.88	1
8.18	Have adequate technical assistance and support in the clinics for undergraduate work	6.75	2
3.06	Adhere to published timetables e.g. lectures not cancelled, appointments kept	6.71	3
4.01	Give prospective students adequate information about the programme	6.71	3=
5.01	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	6.71	3=
2.07	Reward staff for their contribution to the department's success	6.67	6
2.08	Regard teaching and research equally as academic activities	6.67	6=
8.05	Monitor students' attendance at lectures, tutorials and practicals	6.63	8
3.04	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	6.58	9
3.10	Appraise individual staff members	6.54	10
7.05	Result in a qualification which is more highly regarded than similar qualifications from other universities	5.50	66
8.08	Assess need for different levels of help with foundation subjects and provide it selectively to students	5.50	66=
2.03	Operate within a department which is well integrated into the university	5.42	68
2.11	Provide suitable accommodation for administrative purposes	5.42	68=
6.04	Encourage students' high academic achievement above all else	5.38	70
6.09	Encourage students to be innovative (do things in new ways)	5.13	71
5.10	Have students who are able to work on their own with little guidance from their teachers	5.08	72
6.03	Facilitate students' progression to postgraduate study	4.63	73
6.02	Be able to lead students to employment other than as an optometrist	3.88	74
7.03	Base final student assessment on examination only	2.75	75

In contrast to the results of the student survey, there is not agreement on the most important features. Feature 3.4 ("Have within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements") comes top of the overall list, and at the top of the lists both for the academics and the postgraduate and clinical demonstrators (in the latter case it has the highest possible mean expectation score of 7). The technical and secretarial staff, however, rank it 9th (although the mean score is still a high 6.58).

In the 'top 10' features for academic staff, three are to do with the balance and development of staff skills, three are to do with administration, two are to do

with research, one is to do with the library provision for students and another is concerned with the physical environment. The 'bottom 10' are all concerned in some way with the undergraduate programme, including Feature 3.7 ("Incorporate the views of employers into approval and review of the programme"), and Feature 8.7 ("Give adequate help to all students with "foundation" subjects such as mathematics and physics").

The 'top 10' features of the clinical and postgraduate demonstrators include a greater number which are directly about undergraduate studies than the 'top 10' of the academic staff. Feature 5.1 ("Encourage students to be actively involved in the learning process") has a Mean Expectation score of 7, as does Feature 3.4 ("Have within the staff team, the range of knowledge, expertise and interests to match departmental requirements"), and Feature 8.12 ("Have a library with adequate resources to cater for the learning demands of students"). The support and equipment provided for students in the clinic (Features 8.11 and 8.18) are also included in the 'top 10' features, as is Feature 7.1 ("Give students useful feedback from assessed work to help them channel their improvement efforts"). The bottom ten features are similar to those of the academic staff, although Features 3.7 and 8.7 are not included.

The 'top ten' features for technical and secretarial staff are fairly well balanced between those which are directly to do with the undergraduate programme and those which are to do with the department and, particularly, the recognition of the contribution of staff to its success (e.g. Feature 2.7, "Reward staff for their contribution to the department's success"). Feature 8.5 ("Monitor students' attendance at lectures, tutorials and practicals") is included in the 'top 10' for this category of staff, whereas it appears in the 'bottom 10' features of the academic staff, and not at all in either of the lists for the clinical and postgraduate demonstrators. The technical and secretarial staff also have Feature 3.10 ("Appraise individual staff members") in their 'top 10' and the clinical and postgraduate demonstrators have it in their 'bottom 10'.

7.2.3 Satisfaction with the programme in as far as it is perceived to meet or not meet expectations

Table 7.10 on pages 277-284 gives the result of the calculation of the mean score for expectation minus the mean score for perception of respondents in the separate staff categories, and of the combined (all) staff categories. As described in Chapter 6, this may be termed "the gap" and its size may be used as an indicator of satisfaction or dissatisfaction with the provision of a product or a service. The greater the gap, the greater the dissatisfaction. The sections and features are presented in the same order as in the staff questionnaire (Appendix I).

Table 7.10

Staff survey: ***Perception/Expectation differences, based on the calculation of the mean score for expectation minus the mean score for perception for respondents to the questionnaire survey classified by the separate staff categories, and all categories combined***

Section 2: The environment and the culture

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		Academic	Clinical and PG Demonstrators	Technical/ Secretarial	All
2.01	Operate within a department where staff and students have a shared sense of purpose	2.72	1.88	1.33	1.95
2.02	Operate in a department where individuals are given a clear view of what they are expected to achieve	2.57	2.38	0.66	1.80
2.03	Operate within a department which is well integrated into the university	2	1.87	1.13	1.61
2.04	Operate within a department where individual views are taken into account	2.14	1.5	1.25	1.47
2.05	Reward staff for high quality research	2.14	2.12	1.79	1.78
2.06	Reward staff for high quality work with undergraduates	3.86	3.38	2.87	3.06
2.07	Reward staff for their contribution to the department's success	3.43	3.58	2.5	2.91
2.08	Regard teaching and research equally as academic activities	3.43	3.13	2.17	2.94
2.09	Ensure that the disparate skills of all staff are used to the best advantage of students and staff	2.42	2.63	1.92	2.16
2.10	Take place in an attractive, pleasant campus	-0.14	-0.62	-0.38	-0.40
2.11	Provide suitable accommodation for administrative purposes	0.43	1.63	0.34	0.64
2.12	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	0.85	2	0.87	1.08

Table 7.10 continued

Section 3: Quality assurance and enhancement

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		Academic	Clinical and PG Demonstrators	Technical/ Secretarial	All
3.01	Regularly receive feedback on the programme from students	2.14	1.63	1.88	2.01
3.02	Ensure that feedback on the programme from students leads to improvements	2.4	2.25	1.62	2.31
3.03	Have staff who engage in research	0.72	1	1.5	1.04
3.04	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	2.57	2.37	1.91	2.38
3.05	Have staff with a high academic standing and reputation	0.71	0.5	0.04	0.45
3.06	Adhere to published timetables e.g. lectures not cancelled, appointments kept	1.57	2.13	0.75	1.23
3.07	Incorporate the views of employers into approval and review of the programme	0.28	2	-0.13	0.68
3.08	Identify good practice in teaching and learning and share ideas and experience with colleagues	2.85	2.13	1.29	1.96
3.09	Provide professional and personal career development to meet my requirements	3.15	1.67	2.25	2.47
3.10	Appraise individual staff members	2.86	0.87	0.79	1.65
3.11	Encourage staff to be innovative (do things in new ways)	2.43	2.37	1	1.70

Table 7.10 continued

Section 4: Student recruitment

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
4.01	Give prospective students adequate information about the programme	0.57	1	0.38	0.49
4.02	Interview prospective students	1.43	0.71	0.87	0.95
4.03	Recruit only students with high academic ability and entrance qualifications	0.29	1.38	0.04	0.22
4.04	Give recognition at recruitment to prior learning and/or work experience	-0.72	1.75	0.17	-0.02
4.05	Give recognition to students with different academic backgrounds	1.15	-0.5	0.37	0.28

Table 7.10 continued

Section 5: Teaching & learning

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
5.01	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	2.14	3.75	0.58	1.94
5.02	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	3	1.25	0.96	1.99
5.03	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study	0.86	0.63	1.25	0.74
5.04	Help students to make the transition from,school to undergraduate study	3.14	3.5	1.38	2.35
5.05	Have teachers who exp ain what students will be expected to have learned/know as a result of each lecture and item of coursework	1.29	3.63	1.88	1.65
5 06	Have teachers who make substantial use of their own research in the r teaching	1.28	0.88	0	0.86
5.07	Have teachers who set students regular work for assessment	2	0.13	0.67	0.97
5 08	Have teachers who provide ecture notes and read ng ists which fac itate study	0.86	1	0.42	0.76
5.09	Have teachers who l nk the r lectures/tutorials to other parts of the programme	0.85	2.12	0.37	1.11
5 10	Have students who are ab e to work on their own with little gu dance from the r teachers	2.14	0.63	0.25	1.14

Table 7.10 continued

Section 6 The curriculum

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		Academic	Clinical and PG Demonstrators	Technical/ Secretarial	All
6.01	Lead students to employment as an optometrist	-0.85	-1.12	-0.5	-0.74
6.02	Be able to lead students to employment other than as an optometrist	0.14	0.96	0	-0.01
6.03	Facilitate students' progression to postgraduate study	1.71	-0.25	0.75	0.76
6.04	Encourage students' high academic achievement above all else	1.57	0.13	-0.75	0.20
6.05	Concentrate on giving students subject knowledge required by the profession	-0.57	1.38	-0.25	-0.18
6.06	Develop students' problem-solving skills	2.28	2.5	0.8	2.04
6.07	Develop students' ability to communicate effectively (written and oral)	3.28	2.38	1.33	2.61
6.08	Provide good opportunities for student team-work	1.57	1.34	0.63	1.09
6.09	Encourage students to be innovative (do things in new ways)	2.71	2.88	-0.25	1.92
6.10	Develop students' ability to use information technology	2.43	1.5	0.12	1.39
6.11	Develop students' self-management skills	2.28	2.63	0.88	1.82
6.12	Include adequate work experience for students, e.g. hospital placements	-0.85	0.37	0.13	-0.06
6.13	Offer students some subjects/topics as options (modules)	2.71	3.25	0.62	1.93

Table 7.10 continued

Section 7: Student assessment, progression and achievement

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		Academic	Clinical and PG Demonstrators	Technical/ Secretarial	All
7.01	Give students useful feedback from assessed work to help them channel their improvement efforts	2.43	3.25	1	2.19
7.02	Undertake student assessment in a work environment where appropriate	0.29	0.75	0.38	0.41
7.03	Base final student assessment on examination only	0.15	0	-0.88	-0.11
7.04	Base final student assessment on course work and examinations	0.15	0.37	0.63	0.18
7.05	Result in a qualification which is more highly regarded than similar qualifications from other universities	1.15	0.5	-1	0.53

Table 7.10 continued

Section 8: Learning resources for staff and students, student support and guidance

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
8.01	Provide for the welfare of students through a range of support services (financial counselling medical, accommodation)	1.57	0.13	1.5	1.05
8.02	Make study skills advice available to students	2.43	0.8	1.62	1.83
8.03	Have a system which provides adequate individual tuition	3.42	2.62	0	2.18
8.04	Timetable tutorials and practicals to give all students a consistent level of help	1.57	2	1.33	1.27
8.05	Monitor students' attendance at lectures, tutorials and practicals	1.5	3.25	1.88	2.33
8.06	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	1.81	2.12	2.13	1.86
8.07	Give adequate help to all students with "foundation" subjects such as mathematics and physics	1.71	2.75	1.62	1.87
8.08	Assess need for different levels of help with foundation subjects and provide it selectively to students	2.93	2.63	1.67	2.57
8.09	Give adequate help to students with practical work	0.85	1.25	0.88	1.09
8.10	Have help available to students for all course-work when required	1.57	1.88	1.5	1.40
8.11	Have sufficient and adequately equipped clinics for undergraduate learning	0.43	2.75	0.5	1.03
8.12	Have a library with adequate resources to cater for the learning demands of students	2.14	1.62	0.25	1.46
8.13	Have adequate access for all to information technology facilities (time and location)	2.14	1.63	0.63	1.64

Table 7.10 continued

		EXPECTATION minus PERCEPTION MEAN SCORES			
Feature		**Academic**	**Clinical and PG Demonstrators**	**Technical/ Secretarial**	**All**
8.14	Have adequate information technology facilities for administrative purposes (fit for purpose)	1.28	2.17	1	1.26
8.15	Have accessible technical and support staff to assist all *information technology users*	3.14	4.25	1.75	3.02
8.16	Have a library with adequate resources to meet research demands	2.72	2.25	0.38	1.80
8.17	Have adequate technical assistance and support for research	3.71	4	0.75	3.08
8.18	Have adequate technical assistance and support in the clinics for undergraduate work	1.57	1.75	0.62	1.53
8.19	Have adequate secretarial and administrative support for all staff activities	2.04	2.42	1	1.58

Table 7.10 shows some difference of opinion between the staff categories. For example, in Section 2 (The environment and the culture), the 'scores' for Features 2.1 to 2.6 show that the academic staff have greater dissatisfaction than the clinical and postgraduate demonstrators, who have greater dissatisfaction than the technical and secretarial staff, about issues concerned with shared purpose, a clear view of what is expected, and about how performance is recognised and rewarded. This is consistent with the views expressed in the interviews which indicated that the dissatisfaction was with the institutional rather than the departmental management. The former would have a greater impact on academic staff.

In Section 3 (Quality assurance and enhancement) the trends are similar. There are no significant patterns in Section 4 on student recruitment, but there are some diverse opinions, notably between the academic staff and the clinical and postgraduate demonstrators. This also applies to Section 5 on teaching and learning. Overall, this section indicates that the clinical and postgraduate demonstrators are less satisfied with the educational provision than are the academic staff. Feature 5.5 ("Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework"), for example, has a gap of 3.63 for the clinical demonstrators and

a gap of 1.29 for the academic staff. On the other hand, Feature 5.7 ("Have teachers who set students regular work for assessment") has a gap of 2 for academic staff and 0.13 for the clinical and postgraduate demonstrators.

In Section 6 (The Curriculum), there are some negative 'scores' in one or more categories for features of the programme which focus on the development of optometrists rather than scientists. For example, Feature 6.1 ("Lead to employment as an optometrist") and Feature 6.5 ("Concentrate on giving students subject knowledge required by the profession"). The perceptions indicated in Section 8 (Learning resources for staff and students, student support and guidance) are also diverse, with no definite patterns, probably because the topics covered in this section are rather varied.

Table 7.11 on pages 286-288 gives the difference between mean expectation and mean perception scores for all respondents in ranked order.

Table 7.11

Staff Survey: *Perception/Expectation differences based on the calculation of the mean score for expectation minus the mean score for perception, in ranked order*

Feature		Expectation minus perception (mean scores)	Rank
8.17	Have adequate technical assistance and support for research	3.08	1
2.06	Reward staff for high quality work with undergraduates	3.06	2
8.15	Have accessible technical and support staff to assist all information technology users	3.01	3
2.08	Regard teaching and research equally as academic activities	2.93	4
2.07	Reward staff for their contribution to the department's success	2.90	5
6.07	Develop students' ability to communicate effectively (written and oral)	2.60	6
8.08	Assess need for different levels of help with foundation subjects and provide it selectively to students	2.57	7
3.09	Provide professional and personal career development to meet my requirements	2.47	8
3.04	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	2.37	9
5.04	Help students to make the transition from school to undergraduate study	2.35	10
8.05	Monitor students' attendance at lectures, tutorials and practicals	2.33	11
3.02	Ensure that feedback on the programme from students leads to improvements	2.31	12
7.01	Give students useful feedback from assessed work to help them channel their improvement efforts	2.19	13
8.03	Have a system which provides adequate individual tuition	2.18	14
2.09	Ensure that the disparate skills of all staff are used to the best advantage of students and staff	2.15	15
6.06	Develop students' problem-solving skills	2.04	16
3.01	Regularly receive feedback on the programme from students	2.01	17
5.02	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	1.98	18
3.08	Identify good practice in teaching and learning and share ideas and experience with colleagues	1.96	19
2.01	Operate within a department where staff and students have a shared sense of purpose	1.95	20
5.01	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	1.93	21
6.13	Offer students some subjects/topics as options (modules)	1.92	22
6.09	Encourage students to be innovative (do things in new ways)	1.92	23

Table 7.11 continued

Feature		Expectation minus perception (mean scores)	Rank
8.07	Give adequate help to all students with "foundation" subjects such as mathematics and physics	1.86	24
8.06	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	1.85	25
8.02	Make study skills advice available to students	1.83	26
6.11	Develop students' self-management skills	1.81	27
2.02	Operate in a department where individuals are given a clear view of what they are expected to achieve	1.80	28
8.16	Have a library with adequate resources to meet research demands	1.79	29
2.05	Reward staff for high quality research	1.78	30
3.11	Encourage staff to be innovative (do things in new ways)	1.70	31
3.10	Appraise individual staff members	1.65	32
5.05	Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework	1.64	33
8.13	Have adequate access for all to information technology facilities (time and location)	1.64	34
2.03	Operate within a department which is well integrated into the university	1.60	35
8.19	Have adequate secretarial and administrative support for all staff activities	1.57	36
8.18	Have adequate technical assistance and support in the clinics for undergraduate work	1.52	37
2.04	Operate within a department where individual views are taken into account	1.47	38
8.12	Have a library with adequate resources to cater for the learning demands of students	1.46	39
8.10	Have help available to students for all course-work when required	1.39	40
6.10	Develop students' ability to use information technology	1.38	41
8.04	Timetable tutorials and practicals to give all students a consistent level of help	1.26	42
8.14	Have adequate information technology facilities for administrative purposes (fit for purpose)	1.25	43
3.06	Adhere to published timetables e.g. lectures not cancelled, appointments kept	1.22	44
5.10	Have students who are able to work on their own with little guidance from their teachers	1.13	45
5.09	Have teachers who link their lectures/tutorials to other parts of the programme	1.10	46
8.09	Give adequate help to students with practical work	1.09	47
6.08	Provide good opportunities for student team-work	1.09	48
2.12	Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.)	1.08	49
8.01	Provide for the welfare of students through a range of support services (financial counselling medical, accommodation)	1.05	50

Table 7.11 continued

Feature		Expectation minus perception (mean scores)	Rank
3.03	Have staff who engage in research	1.04	51
8.11	Have sufficient and adequately equipped clinics for undergraduate learning	1.03	52
5.07	Have teachers who set students regular work for assessment	0.97	53
4.02	Interview prospective students	0.95	54
5.06	Have teachers who make substantial use of their own research in their teaching	0.85	55
6.03	Facilitate students' progression to postgraduate study	0.76	56
5.08	Have teachers who provide lecture notes and reading lists which facilitate study	0.75	57
5.03	Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study	0.74	58
3.07	Incorporate the views of employers into approval and review of the programme	0.68	59
2.11	Provide suitable accommodation for administrative purposes	0.63	60
7.05	Result in a qualification which is more highly regarded than similar qualifications from other universities	0.52	61
4.01	Give prospective students adequate information about the programme	0.49	62
3.05	Have staff with a high academic standing and reputation	0.45	63
7.02	Undertake student assessment in a work environment where appropriate	0.41	64
4.05	Give recognition to students with different academic backgrounds	0.27	65
4.03	Recruit only students with high academic ability and entrance qualifications	0.22	66
6.04	Encourage students' high academic achievement above all else	0.19	67
7.04	Base final student assessment on course work and examinations	0.18	68
6.02	Be able to lead students to employment other than as an optometrist	-0.01	69
4.04	Give recognition at recruitment to prior learning and/or work experience	-0.01	69=
6.12	Include adequate work experience for students, e.g. hospital placements	-0.06	71
7.03	Base final student assessment on examination only	-0.10	72
6.05	Concentrate on giving students subject knowledge required by the profession	-0.18	73
2.10	Take place in an attractive, pleasant campus	-0.40	74
6.01	Lead students to employment as an optometrist	-0.74	75

Table 7.12 on pages 290-292 gives the 10 features which, for each of the three staff categories, come at the top, and the 10 features which come at the bottom of the ranked lists of "gaps" between mean expectation and mean perception scores.

Table 7.12

Staff survey: *The 10 features which, for each of the staff categories, come at the top, and the 10 features which come at the bottom of the ranked list of the "gaps" between Mean Expectation and Mean Perception Scores*

a) Academic staff

Feature		Expectation minus Perception (mean scores)	Rank
2.06	Reward staff for high quality work with undergraduates	3.86	1
8.17	Have adequate technical assistance and support for research	3.71	2
2.07	Reward staff for their contribution to the department's success	3.43	3
2.08	Regard teaching and research equally as academic activities	3.43	3=
8.03	Have a system which provides adequate individual tuition	3.42	5
6.07	Develop students' ability to communicate effectively (written and oral)	3.28	6
3.09	Provide professional and personal career development to meet my requirements	3.15	7
5.04	Help students to make the transition from school to undergraduate study	3.14	8
8.15	Have accessible technical and support staff to assist all information technology users	3.14	8=
5.02	Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning	3	10
7.02	Undertake student assessment in a work environment where appropriate	0.29	66
3.07	Incorporate the views of employers into approval and review of the programme	0.28	67
7.03	Base final student assessment on examination only	0.15	68
7.04	Base final student assessment on course work and examinations	0.15	68=
6.02	Be able to lead students to employment other than as an optometrist	0.14	70
2.10	Take place in an attractive, pleasant campus	-0.14	71
6.05	Concentrate on giving students subject knowledge required by the profession	-0.57	72
4.04	Give recognition at recruitment to prior learning and/or work experience	-0.72	73
6.12	Include adequate work experience for students, e.g. hospital placements	-0.85	74
6.01	Lead students to employment as an optometrist	-0.85	74=

Table 7.12 continued

b) clinical and postgraduate demonstrators

Feature		Expectation minus Perception (mean scores)	Rank
8.15	Have accessible technical and support staff to assist all information technology users	4.25	
8.17	Have adequate technical assistance and support for research	4	2
5.01	Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge	3.75	3
5.05	Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework	3.63	3=
2.07	Reward staff for their contribution to the department's success	3.58	5
5.04	Help students to make the transition from school to undergraduate study	3.5	6
2.06	Reward staff for high quality work with undergraduates	3.38	7
6.13	Offer students some subjects/topics as options (modules)	3.25	8
7.01	Give students useful feedback from assessed work to help them channel their improvement efforts	3.25	8=
8.05	Monitor students' attendance at lectures, tutorials and practicals	3.25	10
6.12	Include adequate work experience for students, e.g. hospital placements	0.37	66
7.04	Base final student assessment on course work and examinations	0.37	67
5.07	Have teachers who set students regular work for assessment	0.13	68
6.04	Encourage students' high academic achievement above all else	0.13	68=
8.01	Provide for the welfare of students through a range of support services (financial counselling medical, accommodation)	0.13	70
7.03	Base final student assessment on examination only	0	71
6.03	Facilitate students' progression to postgraduate study	-0.25	72
4.05	Give recognition to students with different academic backgrounds	-0.50	73
2.10	Take place in an attractive, pleasant campus	-0.62	74
6.01	Lead students to employment as an optometrist	-1.12	75

Table 7.12 continued

c) Technical and secretarial staff

Feature		Expectation minus Perception (mean scores)	Rank
2.06	Reward staff for high quality work with undergraduates	2.87	1
2.07	Reward staff for their contribution to the department's success	2.5	2
3.09	Provide professional and personal career development to meet my requirements	2.25	3
2.08	Regard teaching and research equally as academic activities	2.17	4
8.06	Have staff who discuss attendance at lectures, tutorials and practicals with individual students	2.13	5
2.09	Ensure that the disparate skills of all staff are used to the best advantage of students and staff	1.92	6
3.04	Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements	1.91	7
3.01	Regularly receive feedback on the programme from students	1.88	8
5.05	Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework	1.88	8=
8.05	Monitor students' attendance at lectures, tutorials and practicals	1.88	8=
6.02	Be able to lead students to employment other than as an optometrist	0	66
8.03	Have a system which provides adequate individual tuition	0	66=
3.07	Incorporate the views of employers into approval and review of the programme	-0.13	68
6.09	Encourage students to be innovative (do things in new ways)	-0.25	69
6.05	Concentrate on giving students subject knowledge required by the profession	-0.25	69=
2.10	Take place in an attractive, pleasant campus	-0.38	72
6.01	Lead students to employment as an optometrist	-0.50	72
6.04	Encourage students' high academic achievement above all else	-0.75	73
7.03	Base final student assessment on examination only	-0.88	74
7.05	Result in a qualification which is more highly regarded than similar qualifications from other universities	-1	75

These tables show that although, between the three categories of staff, there is not unanimity in the choice of the individual features which cause the most dissatisfaction, the majority of the dissatisfaction in all cases arises from issues which are controlled at the institutional rather than the departmental level. Commonly occurring features at the top of the list, for example, are features about promotion and reward policies, such as Feature 2.6 ("Reward staff for high quality work with undergraduates"). Other features are to do with actual or perceived staff shortages and high staff student ratios. For example, academic staff and the clinical and postgraduate demonstrators have Feature 8.15 ("Have accessible technical and support staff to assist all information technology users") in their 'top 10'. The technical and secretarial staff have Feature 3.4 ("Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements"). Academic, technical and secretarial staff also indicate dissatisfaction with the provision for career and personal development as Feature 3.9 ("Provide professional and career development to meet my requirements") is included in the 'top 10' of these categories of staff.

The academic staff indicate dissatisfaction with the level of help provided for students (Features 8.3, ("Have a system which provides adequate individual tuition") has a 'gap' of 3.42), but also included in the 'top 10' features leading to dissatisfaction is Feature 5.2 ("Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning"). Academic staff and clinical and postgraduate demonstrators perceive a large gap between expectations and experience in Feature 5.4 ("Help students to make the transition from school to undergraduate study"). The clinical and postgraduate demonstrators also have a large gap (3.75) for Feature 5.1 ("Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge"). All these features (5.1, 5.2, 5.4 and 8.3) are concerned with the level and nature of personal help which should be provided for undergraduates. The gaps and the concerns they indicate can be set against the issues raised in the interviews which indicated a need to help students against a background of rising numbers, actual or perceived staff shortages, and also a need or wish to help students become more independent in their approach to learning than they may have been at school.

The 'bottom 10', as discussed in Chapter 6, can indicate features which may fall into 3 categories:

1. Important features with which respondents are highly satisfied
2. Features where the expectation is not high and the perception of the provision is not high, and there is satisfaction in this sense
3. Features which have negative 'scores', indicating areas of dissatisfaction because the perception is that the presence of this feature is too strong; respondents think they are being given too much of something, or being given something too often, or to a higher standard than they perceive they need.

In the context of the third category listed above, Feature 6.1 ("Be able to lead to employment as an optometrist") is significant, as all categories of respondents have a negative 'score' for it, indicating that perhaps the programme too often leads to this specific employment. Feature 3.7 ("incorporate employers' views into approval and review of the programme") fits into category 2 of the list above for academics (the expectation is not high and the provision is not high, therefore there is satisfaction), but it fits into the third category for technical and secretarial staff who have a relatively high expectation (6.25, as shown in Table 7.7 but have a negative 'score' (-0.13) in Table 7.12, indicating some dissatisfaction with the provision in respect to this feature.

7.3 Conclusions on the Voice of the Departmental Staff

As in Chapter 6, Section 6.4, where conclusions were drawn about the Voice of the Student, conclusions must be made from the results of the fieldwork on the Voice of the Departmental Staff.

As described in Chapter 6, the TQM approach requires that a conclusion is reached on:

- purpose
- what the customers want, or believe they need, to achieve that purpose
- how far they perceive that their needs are being met.

Purpose

The results of the fieldwork indicate that departmental staff understand the purpose of the BSc Optometry programme to be the one published, as described in Chapter 5, that is, "to offer an integrated professional and scientific education and training". By the time they graduate, the education and training offered will have provided students with the knowledge and understanding which will enable them to pursue a 'graduate level' career. This could be a general career which requires graduate abilities, or they could choose more specific careers as scientists. There is also a need for some graduates to pursue postgraduate research in Vision Science and become the next generation of researchers and academics.

Within the BSc optometry programme, however, there is a component of education and training in the practical skills of the optometrist. As described in Chapter 5, graduates are deemed to be, in terms of their knowledge, up to the standard required to pass Part 1 of the Professional Qualifying Examinations (PQEs) which are controlled by the College of Optometrists. They cannot be registered as legally practising optometrists until they have passed Part 2. Responsibility for raising knowledge and skills to this level is outside the scope of the BSc Optometry programme.

As described in Section 7.2.3, all categories of staff have a negative 'score' for the gap between expectations and perceptions of Feature 6.1 ("Be able to lead to employment as an optometrist"). This indicates a view that in terms of the outcome, i.e the use to which the students put their education and training, the balance is seen by staff as too much in favour of optometry as a career. Table 7.12 also shows that Academic staff have a negative 'score' for Feature 6.5 ("Concentrate on giving students subject knowledge required by the profession"). Interviewees referred to tensions between the academic content and the practical content (Table 7.6).

What they perceive they need to achieve this purpose

To achieve the purpose of the programme as they see it, the academic staff choose high grade 'input' as a key factor, that is they require students to have

demonstrated high academic ability by the fact that they have achieved A Level results, or equivalent qualifications, that are higher than the national average and which, in some cases, are as high as those required to study medicine.

To provide the education and training, a curriculum has been designed which includes subjects such as mathematics and physics that form the basis of a general scientific knowledge and education. During the first year the aim is to bring all students to the required level in these subjects whether or not they have previously studied them to A Level or above. The scientific education and training continues throughout the three years and includes scientific and clinical theory appropriate to the aim of the programme. At various stages in the programme, the students' knowledge and understanding is assessed either through examinations or completing assessed work. The process for helping students to acquire the knowledge and understanding of the theoretical and practical subjects included in the curriculum is to provide a system of lectures, tutorials and sessions of practical, clinical training.

Academic staff, therefore need to have between them a set of knowledge, skills and tasks to enable them to work within the process, i.e. to design the curriculum, deliver lectures, hold tutorials, give practical instruction in the clinics, set and mark course work and examination papers. There also needs to be a high level of managerial and administrative support for all these activities, including the recruitment of students. To retain the high standards of the programme and to continue to be able to attract students with high academic standards, the staff also have to be leaders in their own specialist fields. They therefore need to be active members of the relevant research and professional communities.

The high entry qualifications of the students and some of the comments made by interviewees also indicate that, to an extent, staff believe they need to have students who will quickly adapt to the university's education process and not require a high level of help with the transition from school to university, and who will be able to keep up with the progress of the programme. Little in the way of remedial help is built into the process. Table 7.7 shows that Academic staff have a quite high survey mean score of 6.57 for Feature 5.2 ("Encourage students to be independent learners; to identify their own strengths and

weaknesses and to be responsible for their own learning"). Clinical and postgraduate demonstrators put less emphasis than academics on the need for high academic entry qualifications (Feature 4.3), and also less than the academic staff on Feature 5.1 ("Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge").

The clinics add another dimension to the programme as there is a need for staff who have all the necessary professional and administrative skills needed to run a busy public health clinic. The clinic has to meet the requirements of the GOC if the programme is to continue to receive its accreditation. Staff also believe it should be well-equipped. Postgraduate and clinical demonstrators and technical and secretarial staff also state a need for students' attendance at the clinics to be monitored. This view is not shared by academic staff (Table 7.7. pages 261-268, Feature 8.5).

Interviewees frequently stated the resource and personal development needs which had to be satisfied if they were to make an effective contribution to the achievement of the programme's purpose. By category of staff, these were as follows:

Academic staff

Most academic staff considered that they needed additional resources (finance and staff) to cope with the increased student numbers. They believed they were unable to give the students the help they would like because of staff shortages.

Clinical and postgraduate demonstrators

The clinical and postgraduate demonstrators teach students, but do not usually have training or experience in teaching. They therefore considered that they needed help with personal and career development in these areas. They also have a research purpose in the department but they saw their greatest need in this respect as being for physical resources such as access to libraries.

Technical and secretarial staff

The needs of this category of staff were expressed largely in terms of help to do their job better. This was seen as being through training, greater involvement and better communication. Some staff also believed that their skills were under-used and in the interviews they indicated that they could make a more direct contribution to the BSc programme as well as to research (Table 7.6).

How far they perceive that their needs are being met

Academic staff perceive a large gap (3.0) between their expectation and perceptions in relation to Feature 5.2 of the survey ("Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning"). The interviews and survey also suggested that the schools were not providing suitable preparation for university study. This included specific subjects such as mathematics but also preparation in terms of being more independent learners. The clinical and postgraduate demonstrators perceived a large gap (3.75) between expectations and perceptions of Feature 5.1 ("Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge"), and also in Feature 5.5 ("Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework") which had a 'gap' of 3.63.

The university's staff recruitment and promotion policies were a source of dissatisfaction in the department. One interviewee (Table 7.5) said "the whole university is unduly geared towards research", another commented that the pressures of RAE had a negative impact on the undergraduate provision. There was also a view that despite their own need for resources, the department's earnings were being used to support less successful departments and that this was unfair.

Overall, there is a sense that the department believes that it is being driven by the purpose, and thus the policy, of the wider university which either they do not share and/or is considered to be detrimental to the Department of Vision Sciences and thus to the quality of the BSc Optometry programme.

Chapter 8

The Voice of other Stakeholders

This chapter continues the presentation of the results of the investigation into the "Voice of the Customer" which began in Chapters 6 and 7. This chapter presents the results of the fieldwork carried out to collect the "Voice of Other Stakeholders", i.e. the stakeholders in addition to the students and departmental staff. These were identified in Chapter 5 as being:

- Aston University management
- The General Optical Council (GOC)
- The College of Optometrists
- HEFCE
- Employers
- Patients who attend the clinics.

The data was collected according to the data collection methods described in Chapter 5, Section 5.4.3. The primary method was one-to-one structured interviews but employers were additionally asked to complete Section 6 of the staff questionnaire (the Curriculum). The data on patients' views was collected by means of a structured interview. For the purpose of analysis, the comments were categorised according to the 'Expanded list of HEFCE Aspects' (Appendix G). The exception to this are the patients' data which, as explained in Chapter 5, Section 5.4.3.3, has its own classification scheme.

It should be noted that some respondents included in this category of 'other stakeholders' did not wish to speak specifically of the Aston BSc Optometry programme and based their comments on the set of similar programmes which are offered in the UK.

8.1 Aston University management

8.1.1 Hopes and fears

Table 8.1 on page 301 gives the expectations of Aston University managers of the BSc Optometry programme, expressed as 'hopes' and 'fears'. All comments fall within Aspect 6 (Quality assurance and enhancement) and Aspect 9 (Institutional management). In summary, university management would like to see the BSc Optometry programme become a market leader and help to meet the university's aim to expand student numbers. The fear is that with only limited resources from HEFCE, more students without additional resources would threaten not only standards but also the accreditation of the GOC which requires a 4:1 staff student ratio for clinical supervision. There is a hope that the expansion might be brought about by offering programmes in related areas such as dispensing. Also the student expansion might be paid for through charging "top up" fees.

Table 8.1
Interviews with University Management: *Expectations expressed as 'Hopes' and 'Fears'*

Aspect Code	HOPES	Aspect Code	FEARS
Quality assurance and enhancement 6			
6	To be a Centre of Excellence through a range of programmes from undergraduate to continuing education	6	Increasing resource pressures and the tightening of the (external) screw will make it difficult for the department to maintain its standards whilst maintaining student numbers
6	May become the UK Centre of Excellence in teaching and research	6	We must not let standards decline in the transitional phase before alternative sources of funding are found, e.g. from student top-up fees
	NUMBER OF COMMENTS = 2		**NUMBER OF COMMENTS = 2**
Institutional management 9			
9	Expand the programme very significantly	9	Would lose our shirts, financially, through expansion
9	There is a demand	9	Reduction in numbers
9	We can get high-quality students		HEFCE must become more realistic in terms of the fees they pay (no sign of this: the clinical element must be recognised
9	Expansion may be through non-clinical programmes such as dispensing	9	Funding problems are exacerbated by the GOC and the clinical element requiring a very favourable staff/student ratio in the final year
9	Expansion in non-clinical areas could lead to optometry expansion	9	We have at the moment 4 staff vacancies and are finding it hard to recruit people of the standard that we have been able to achieve before, putting a lot of pressure on the other staff
9	That the programme will be a market leader		
9	I think students would pay a premium for this course, rather than for, say, a general arts programme		
	NUMBER OF COMMENTS = 7		**NUMBER OF COMMENTS = 5**

8.1.2 Helpful and unhelpful aspects

Table 8.2 on page 303 gives the comments about the aspects of the programme which Aston University managers found helpful and unhelpful to them in fulfilling their own role within the university. The management practice in the department which led to the ready availability of management information and the ability to cope better with resource problems is seen as helpful, as is the development by the department of programmes of Continuing Professional Development (CPD). The unhelpful aspects include the linear design of the programme which makes it less amenable to modularisation and integration with other university programmes.

Table 8.2

Interviews with University Management: *'Helpful' and 'Unhelpful' Factors*

Aspect Code	HELPFUL FACTORS	Aspect Code	UNHELPFUL FACTORS
Teaching, Learning, Assessment 2			
2B	Developed techniques and models to accommodate a high level of contact hours and a heavy teaching load to help cope with resource problems	2B	The programme has been designed in a linear way (but may be able to re-use modules in other programmes)
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 1**
Quality assurance and enhancement 6			
6B	Information on class contact hours and class size is readily available in the department		
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 0**
Institutional management 9			
9	The very successful continuing development (CPD) programme, on the back of the undergraduate programme - is a model for others	9	In the move to a modular degree structure (breaking down many of the departmental boundaries), the BSc Optometry programme is substantially standalone)
9	Optometrists have the advantage that CPD is compulsory for practitioners		
	NUMBER OF COMMENTS = 2		**NUMBER OF COMMENTS = 1**

There were no comments under Aspects 1,3,4,5,7 or 8

Table 8.3

Interviews with University Management: *Additional Quality Issues*

Aspect	Aspect Code	ADDITIONAL QUALITY ISSUES
Curriculum design, content and organisation 1		
	1C	The practice of optometry is not a subject that is rich in research
	1C	Psycho-physics, neuro-physics, colour perception and some other medical aspects are rich in research
		NUMBER OF COMMENTS = 2
Teaching, Learning, Assessment 2		
	2	Tend to have people who are basically niche researchers in the field, not practising optometrists teaching on the programme
	2	Is a practitioner' programme taught substantially by scientists, not optometrists, feel this is not the optimum way
		NUMBER OF COMMENTS = 2
Institutional management 9		
	9	New staff were appointed, generally, on the basis of their research records
	9	Would like to have more optometrists - need to address this through the recruitment and appointments policy
	9	Relative to the return that we get from our effort on other programmes, it is financially inefficient
	9	It is one of the best organised, best run programmes in the university - arguably, the best
		NUMBER OF COMMENTS = 4

There were no comments under Aspects 3, 4, 5, 6, 7 or 8

8.1.3 Additional quality issues

Concern is expressed that optometry is not rich in research and there is a discrepancy between the type of people needed to carry out research in the department and the kind of people needed to help educate and train future optometrists. One respondent said "it is essentially a practitioners' programme taught substantially by scientists, not optometrists". Despite its success, the programme was viewed as being financially inefficient for the university. It is expensive compared with other programmes.

8.1.4 Most important aspects

Respondents gave the following as the aspects of the programme (helpful or unhelpful) which were most important to them. These were:

- Need more horizontal integration
- Need to increase the resources and maintain the standards.

8.2 The General Optical Council

8.2.1 Hopes and fears

The 'hopes' and 'fears' of the General Optical Council (GOC) are given in Table 8.4 on pages 306-307.

Table 8.4

Interviews with the General Optical Council: *Expectations expressed as 'Hopes' and 'Fears'*

Aspect Code	HOPES	Aspect Code	FEARS
Curriculum Design, content and organisation 1			
		1A	That the course will not come up to our expectations (it is rare that a course does), for 2 reasons: universities are bedevilled by finding problems and cannot sometimes meet our needs in the way we would like, e.g. the level of supervision in clinics. (1 member of staff to 4 students)
		1B	In its proper pursuit of excellence, a university may seek to provide a graduate of a very high standard. This can have 2 repercussions: not enough graduates qualifying, or high flyers who may be excellent Vision Scientists but disinclined to spend their day in the routine of a High Street practice
		1C	Quality in practice may suffer because of the commercial pressures optometrists are under to see a certain number of patients. Their salaries are high and have to be earned. A sight test should take around 20 minutes. Is there any diminution in the quality of service?
		1C	It does not necessarily follow that a course that produces an excellent graduate produces an excellent clinician. The PQE tests how they are putting the knowledge they have into use and practice. The results might bear some scrutiny.
	NUMBER OF COMMENTS = 0		**NUMBER OF COMMENTS = 4**
Teaching, Learning, Assessment 2			
2B	That the standard of education and training during the degree course is of a satisfactory standard to provide a successful PQE Part 2 candidate a year later (PQE is mainly practical)		
2B	That we are satisfied with the academic element and the practical, clinical experience during the degree course		
	NUMBER OF COMMENTS = 2		**NUMBER OF COMMENTS = 0**

Table 8.4 continued

Aspect Code	HOPES	Aspect Code	FEARS
Quality assurance and enhancement			
6			
		6	The most important factor is our statutory duty - to be satisfied with adequacy i.e. somebody who is trained to an extent that they are safe to practise as an eye tester
		6	HEFCE and HEQC monitoring and assessment is motivated by different principles to ours. This can raise 2 problems; whether there is real duplication that can be avoided, and how to resolve conflicting issues such as if we require something to be done in the interest of safety which HEFCE will not fund and universities therefore cannot afford
	NUMBER OF COMMENTS = 0		**NUMBER OF COMMENTS = 2**

There were no comments under Aspects 3, 4, 5, 7, 8, or 9.

Table 8.5

Interviews with the General Optical Council: *Additional Quality Issues*

Aspect Code	ADDITIONAL QUALITY ISSUES
Curriculum design, content and organisation 1	
1	The relevance of the course in all its aspects
1	We must still address what we are producing as the end result of the degree programme - a Vision Scientist or an Optometrist? This is most important.
	NUMBER OF COMMENTS = 2
Teaching, Learning, Assessment 2	
2A	There is a very large clinical element in optometry which needs a heavy degree of supervision. The universities have to increase numbers to fit within the funding frame, but we believe they should then also increase the level of supervision. We want 1 to 4 and if you find a clinic with 100 people, where are you going to find 25 people?
	NUMBER OF COMMENTS = 1
Quality assurance and enhancement 6	
	There is a difference between quality and standard, and we need to be aware of this in the context of our remit
	The degree system is very good and I would not seek any fundamental change. I would rather make changes in the profession itself and its regulation and control
	NUMBER OF COMMENTS = 2

There were no comments under Aspects 3, 4, 5, 7, 8 or 9.

The 'hopes' are that the education provided will eventually lead to a successful PQE candidate. The 'fears' are that the academic education provided may not necessarily turn out the competent practitioners the GOC requires. Also, will academic "high flyers" be able to tolerate the routine of a high street practice? There is a further fear that HEFCE and HEQC monitoring is motivated by different principles to the GOC's. The priority of the GOC is to ensure that qualified people are safe to practise as eye testers. HEFCE may not be so interested in the public safety and may be unwilling to fund aspects of the programme which are concerned with this. Also there can be duplication of effort in monitoring by the different agencies.

8.2.2 Helpful and unhelpful aspects

No specific comments were listed under these headings.

8.2.3 Additional quality issues

Additional quality issues are given in Table 8.5 on page 308.

The programme, and similar ones, are praised as being very good and not in need of fundamental change but there is clear concern about the level of supervision provided in the clinics. The GOC requires a staff student ratio of 4:1. Emphasis is put on the GOC's concern with standards as opposed to quality.

8.2.4 Most important aspects

The single most important aspect of the programme ('helpful' or 'unhelpful') from the point of view of the GOC was given as:

- To address what we are producing as the end result of the degree programme - a Vision Scientist or an Optometrist?

8.3 The College of Optometrists

8.3.1 Hopes and fears

Table 8.6 on pages 310-311 gives the expectations of the College of Optometrists, expressed as 'hopes' and 'fears'.

Table 8.6

Interview with College of Optometrists: *Expectations expressed as 'Hopes' and 'Fears'*

Aspect Code	HOPES	Aspect Code	FEARS
Curriculum design, content and organisation 1			
1C	That the universities turn out graduates who, with further practical training, are able to qualify at the qualifying examination		
1C	That the general skills, and communication is one very important one, are addressed at the university level. Although they are skills that can only be honed on real people in real-life situations, the basic understanding needs to be put in place as part of the undergraduate programme		
1C	The universities should become far more involved in the continuing education and training programmes for optometrists. Some of those who qualified years ago, for example, are not trained to the standard required for Shared Care		
	NUMBER OF COMMENTS = 3		**NUMBER OF COMMENTS = 0**
Student support and guidance 4			
4B	High quality candidates. With the universities we put out career brochures about their university and optometry so there is partnership in terms of recruitment and standards		
4B	To recruit high calibre people into the university programme, particularly against the background of future significant change in terms of scope of practice of a primary led healthcare service. Optometry will become a much more clinical profession. The optometrist will, in future, be seen as the person who can diagnose and treat, where appropriate, routine eye conditions and only refer on where appropriate. There will be some change in emphasis in the curriculum, to accommodate this. I would expect, for example, optometrists in the future to be using some therapeutic drugs.		
	NUMBER OF COMMENTS = 2		**NUMBER OF COMMENTS = 0**

Table 8.6 continued

Aspect Code	HOPES	Aspect Code	FEARS
Quality assurance and enhancement 6			
6	A higher level of funding for optometric students. Being funded within "professions allied to medicine" is inadequate for a relatively high equipment cost and high "hands on" experience profession such as optometry. We have made representations to the Funding Councils in support of the universities.	6	Government policy affecting educational standards. We are concerned that the commercial pressures being put on the universities ("stack 'em high, sell 'em cheap") may lead to a reduction in standards. Some departments are recruiting double the number of undergraduates that they were two or three years ago. They have not got extra facilities or staff; the pressures are always upon the universities now, particularly through the "quality" and assessment pressures, to pass graduates and not fail them because failure is seen as a failure of the system. By having the PQE system at the end, independent of the universities, we are able to control standards of professional entry. Universities whose graduates are remarkably unsuccessful at PQE will eventually go under.
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 1**
Institutional management 9			
		9	For the university optometric departments not to be forced to recruit ever-increasing numbers to subsidise other disciplines and subjects that are not successful in attracting recruits
	NUMBER OF COMMENTS = 0		**NUMBER OF COMMENTS = 1**

There were no comments under Aspects 2, 3, 5, 7, or 8.

Table 8.7

Interview with College of Optometrists: *Additional Quality Issues*

Aspect Code	ADDITIONAL QUALITY ISSUES
Curriculum design, content and organisation 1	
1C	The universities turn out broadly the right sort of skills. The difficulty is in knowing how much of graduates' success or failure is as a result of their core course, or how much is as a result of perhaps poor supervision, guidance and training in that very important on-the-job training year (about 30% of candidates pass PQEs first time).
1C	Optometrists are not very good at communicating, which is vital for a healthcare profession. Much of the public ignorance about the value of the eyes of the nation, about the healthcare aspects of optometry is due to the fact that optometrists are not up to telling them. There is also ignorance about what an optometrist does and can do. Research shows that people by and large are very negligent about eye healthcare, e.g. drivers who cannot see properly.
	NUMBER OF COMMENTS = 2
Quality assurance and enhancement 6	
6	There is a view that the university course ought to be registerable with the divisional registry and that higher standards would ensue. The problem with registerable degrees is that it takes away from the profession the right of setting entry standards and gives it to academic bodies. Academic bodies are specialists at teaching people new skills and new knowledge but they are not necessarily qualified to set entry standards for any individual profession because that is not their role, that is not what they are there to do. While there is an attraction for a university to be funded for a four-year programme, it would threaten the profession's independence vis-à-vis the government.
	NUMBER OF COMMENTS = 1

There were no comments under Aspects 2, 3, 4, 5, 7, 8, or 9.

The 'hopes' are within Aspects 1, 4 and 6, i.e. they are concerned with the curriculum design, content and organisation, student support and guidance and quality assurance and enhancement. In terms of the curriculum, the College expresses concern that the graduates should be prepared for competent professional practice, including the development of general skills, such as communication. Changes in optometry are predicted and the programme may have to change to accommodate a greater clinical role in primary health care. Another 'hope' is for increased funding to take account of the clinical component of the education and training.

The main 'fears' are in connection with the higher education policy to expand student numbers without a proportionate increase in *per capita* student funding. There is concern that standards will deteriorate and that, because of the pressures of quality assessment, students may qualify although they have not achieved the required standard.

8.3.2 Helpful and unhelpful factors

No separate issues were raised under these headings.

8.3.3 Additional quality issues

Table 8.7 gives additional quality issues raised by the College. The College controls the standard of entry into the profession through the Professional Qualifying Examinations (PQEs). This control, in the view of the College, cannot be relinquished to the universities because of the potentially conflicting pressures the universities are under to educate more students for less money in real terms. There is also concern about performance in the PQEs but the root cause of this is unknown. Communicating the importance of eye care, particularly to the government, is also very important and at present, in the opinion of the College, it is not done well.

8.3.4 Most important aspects

The following were stated as being of greatest importance to the College in respect to university optometry programmes:

- A higher level of funding is needed to take account of the clinical element of optometry programmes
- The university departments should not be forced to recruit more students to subsidise other programmes which might be less successful in this respect.

8.4 HEFCE

8.4.1 Hopes and fears

The expectations of HEFCE, expressed as 'hopes' and 'fears' are given in Table 8.8 on pages 314-315.

Table 8.8

Interview with HEFCE: *Expectations expressed as 'Hopes' and 'Fears'*

Aspect Code	HOPES	Aspect Code	FEARS
Quality assurance and enhancement 6			
6	That the subject provider is able to articulate both for us and for their students, and for all other stakeholders, what they are trying to achieve for their students and what their students can reasonably be able to achieve as a result of being successful graduates of this programme.	6	That the positive value that this programme can give to institutions simply gets lost in the general political argument
6	In the course of articulating aims and objectives, and as a result of it, subject providers should be able to look at the major aspects of curriculum development, teaching, learning and assessment, the student support and guidance, the range of learning resources that are provided and their own quality assurance mechanisms, to be self-critical about the way in which they operate.		
6	That subject providers will interact with a group of external peers and try to explain to them and demonstrate to them the degree to which they deliver to their own aims and objectives.		
6C	That the process of assessment will be constructive for subject providers and that they will learn something from the external peer interaction.		
6C	That the external peers will learn something from going into this department so that they will take away something of value to them as well. In the process of evaluating how clearly they think a subject provider is achieving its aims and objectives, assessors are probably learning a fair amount about a different point of view with respect to optometry or vision sciences than you might have in your own department.		

Table 8.8 continued

Aspect Code	HOPES	Aspect Code	FEARS
6C	That each assessor will do six assessment visits over two years. They then ought to be able to go back and look at their own departments with different eyes. It is a staff development function, riding along the wave of accountability.		
	NUMBER OF COMMENTS = 6		NUMBER OF COMMENTS = 1

There are no comments under Aspects 1, 2, 3, 4, 5, 7, 8 or 9

All comments fall within Aspect 6 ("Quality assurance and enhancement"). The 'hopes' are that subject providers will be able to articulate "for us and for all other stakeholders, what they are trying to achieve for their students and what their students can reasonably be able to achieve as a result of being successful graduates of this programme". The HEFCE assessment process should be developmental for all concerned and should result in improved practice, and the sharing of knowledge about good practice. They also hope that subject providers will be self-critical. The fear is that "the positive value that this programme [i.e. HEFCE assessment] can give to institutions simply gets lost in the general political argument".

8.4.2 Helpful and unhelpful aspects

Helpful and unhelpful factors for HEFCE, as stated during the interviews, are given in Table 8.9 on page 316.

Table 8.9

Interviews with HEFCE: *'Helpful' and 'Unhelpful' Factors*

Aspect Code	HELPFUL FACTORS	Aspect Code	UNHELPFUL FACTORS
Quality assurance and enhancement 6			
6	The degree to which departments, whether it is Vision Sciences or anything else, do have their own processes of reflection and critical evaluation and it is part of their culture to do that	6	Lack of sympathy with the assessment programme, and feeling that it is an imposition that they could well do without and glad to avoid as opposed to being something that is part of an academic's current function and current method of teaching
6	The degree to which, in their teaching and learning programmes, they are both constructively and sensitively critical of each other and develop the programme as a result.		
6	Departments that allow our processes to hook in comfortably on processes that already run so they do not feel intimidated by them, or have new worries generated because it is the first time they have ever thought of doing anything like this.		
6	If it becomes a natural extension of things they do themselves		
	NUMBER OF COMMENTS = 4		NUMBER OF COMMENTS = 1

There are no comments under Aspects 1, 2, 3, 4, 5, 7, 8 or 9.

8.4.3 Additional quality issues

No additional quality issues were raised. Helpful factors are the subject providers' willingness to be self-critical and to absorb self-assessment into 'normal' work practice. Unhelpful factors are the extent to which assessment is seen as an extra burden imposed from outside.

8.4.4 Most important aspects

No aspect was stated to be of higher importance than any other.

8.5 Employers

As described in Chapter 5, Section 5.4.3.2, qualitative data was collected through the semi-structured interviews used also for the interviews with staff

and other stakeholders (Appendix F). At the time of the interview, employers were asked additionally to complete Section 6 of the questionnaire used for staff in the Department of Vision Sciences (Appendix i).

8.5.1 Results of the interviews

8.5.1.1 Hopes and fears

Table 8.10 on pages 318-321 gives the expectations of employers, expressed as 'hopes' and 'fears'.

Table 8.10

Interviews with Employers: *Expressed as 'Hopes' and 'Fears'*

Aspect Code	HOPES	Aspect Code	FEARS
Curriculum design, content and organisation 1			
		1A	As a College (PQE) examiner I do not see standards improving. I do not know whether the undergraduate teaching or the pre.reg. year is to blame.
1B	Need the theoretical background knowledge to develop clinical skills within the hospital.		
1B	Graduates with a sufficient base of theoretical knowledge on which they can build up their clinical skills in the pre-reg. year.		
1B	Theoretical knowledge has to be sound and to a very high standard.		
1B	In the third year clinical levels should have been worked on intensively so that they can apply them in a the working environment.		
1B	Clinical competence and confidence, the two do not necessarily go together		
1B	Able to perform the basic refraction, albeit slowly.		
1C	Because we are a company that provides services to the public, my hope is to get people who will want to practise in that manner. We are not looking for people who want to be academics or hospital opticians and we want them to have a practical approach to the service of the public.	1C	Arrogance: thinking they are the same as doctors and behaving inappropriately - talking down to patients or talking about them to colleagues without including them in the conversation.. Although, correctly, emphasis is put on recognising abnormality, only 5% of those going to optometrists exhibit this.
1C	That recruits have the ability to show that the optometrist cares for the customer. We can develop technical competencies and address technical deficiencies relatively easily as shown in our PQE pass rates - when we are developing technical competencies.	1C	That their communications skills will be poor and they cannot speak comfortably to patients.
1C	That we can encourage the universities to keep developing the technical side, harness more of the technology and the real world environment - the biggest aspect of which is raising the awareness of the need to be able to get on with people, and to have skills to communicate well with patients, and making the most of that opportunity, rather than being at arm's length and a technical expert.	1C	Not knowing how to handle a crisis, and to grade "severities" (not to over-react to relatively minor complaints that might mean a patient has to be referred to a hospital for the first time), and having "the wrong" body language that can frighten a patient.

Table 8.10 continued

Aspect Code	HOPES	Aspect Code	FEARS
1C	I take the academic side for granted and look for personality. It is no good being an outstanding clinician if you do not inspire the confidence of the patient who has come in for advice.	1C	We will have students who never actually become good with patients, they just do not have interpersonal skills. They may become very good research people and that is fine if that is what they go on to do, but I think the main function of the undergraduate programme is to produce people who are going to be useful in a practice.
1C	We want people who are genuinely interested in people and who will think about them as an individual and come up with solutions to their particular optical problems.		
1C	Warmth is another thing, and has a hard commercial overtone as patients treated well, not just technically, are more likely to return to purchase products from us.		
1C	We have a lot of competition on the high street, patients have a lot of choice. In the real world of optometry it is not like a hospital where people might just have to take the doctor's advice. Optometrists have to give people confidence, be able to react to fears and concerns. Without this, even if you are academically top notch, you will not be totally successful as an optometrist.		
1C	The universities will produce optometrists who are, yes, academic, but also good with people.		
1C	That they will come out of university, and they do not, as useful members of my organisation. in the pre-reg. year we convert them from the academic to the real world.		
1C	A reasonably well-rounded clinician, able to fit into the pre-reg. year quite quickly, this is probably more difficult in a hospital than in a general optometric practice; some of the work in hospitals is difficult.		
1C	At the end of the pre-reg.. year they will be able to work without me.		
1C	That they leave university with a full set of notes for future revision purposes.		
	NUMBER OF COMMENTS = 18		**NUMBER OF COMMENTS = 5**

Table 8.10 continued

Aspect Code	HOPES	Aspect Code	FEARS
Teaching, Learning, Assessment 2			
		2A	With increasing numbers of undergraduates, clinical "hands-on" training will suffer. I know the universities are suffering in terms of the clinical teachers they are able to recruit.
	NUMBER OF COMMENTS = 0		**NUMBER OF COMMENTS = 1**
Student support and guidance 4			
		4B	We have in this country either a shortage of optometrists, or alternatively we have far too many practices. Whatever it is there is a shortage of optometrists: none are unemployed. This leads to unrealistic salaries being offered (it is probably the first or second highest paid profession at graduation).
4B	I wish there were some mechanism from the outset to screen for interpersonal skills. It is a pity that the universities' selection processes do not screen for anything except intellectual capability which is primarily gauged on A Levels. You can have the interpersonal skills of a porcupine in a balloon factory but still do optometry, provided you have good A Levels.	4B	As students recognise the job prospects, the standards that can be determined by the universities in A Level terms has started to creep back again. We are going to get people who have over-ambition for the job they have to do.
		4B	The worry as an employer is, are we going to get to a stage where there are too many graduates. Are there enough jobs?
		4B	I worry that the A Level entry standard is so high (virtually as high as for medicine) and it makes you wonder whether this is the best gauge.
4F	Recruits have to be geographically mobile - to go where the jobs are, in common with most professions.	4F	Disillusionment can set in because, once in, salaries may not rise much even after five years, and careers may not seem to progress. Companies like ours cannot afford to take people out of the consulting room and bring them into management or other areas.

Table 8.10 continued

Aspect Code	HOPES	Aspect Code	FEARS
4F	To have more students who are prepared to develop a career path, with lower early expectations. This would allow proper training, which is costly.	4F	As optometry continues to raise its standards, it also raises aspirations of individuals and they can get disappointed when they get on to the routine of optometry in the consulting room. Obviously training has to prepare for the exceptions but only 3-4% of eyes are "sick".
	NUMBER OF COMMENTS = 3		**NUMBER OF COMMENTS = 6**
Institutional management 9			
	If Aston produced another 30 students a year I would be delighted.	9	Unless the funding for universities can be sorted out quickly, and investment can be made in training in clinical disciplines, the universities will be training people on materials and equipment which may be out-of-date in the working environment.
		9	Optometry is essentially a clinical course, mixed in with an academic course but there is a 'misperception' in the university of what it should involve. Stepping up numbers and not providing proportionate increases in funding is a serious problem which will manifest itself in the next two to three years.
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 2**

There are no comments under Aspects 3, 5, 7 or 8.

All the 'hopes' fall either within Aspect 1 (Curriculum design, content and organisation) or Aspect 4 (Student support and guidance). The majority (82%) fall within Aspect 1. The 'fears' are spread between Aspects 1, 4 and 2 (Teaching, learning and assessment) and 9 (Institutional management). The expectations of good interpersonal skills and the ability to relate to the public with warmth feature strongly in the comments. Although the theoretical background has to be strong, academic skills alone will not make a successful optometrist. The effectiveness of the screening mechanism and the appropriateness of the entry qualifications of those accepted on to the programme is questioned. One interviewee said "you can have the interpersonal skills of a porcupine in a balloon factory and still do optometry [at university], provided you have good A Levels". Another interviewee said that the main function of the undergraduate programme is "to produce people who are going to be useful in practice". There is a fear that the university is producing people who might make good researchers but who, because of lack of interpersonal skills, or because of over-ambition, would never be good, or settle, as optometrists in general practice. Optometrists,

according to some, were in short supply (there are no unemployed optometrists). One interviewee said another 30 students a year were needed from the programme, but another feared there would be too many graduates for the jobs available. Additional 'fears' are that the universities are not funding the programme to an adequate level, particularly the clinical aspects. There is a fear also that standards are already declining.

8.5.1.2 Helpful and unhelpful aspects

Table 8.11 on pages 323-325 gives the interviewees' comments on what aspects of the programme they find helpful and unhelpful to them in carrying out their own role.

Table 8.11

Interviews with employers: *'Helpful' and 'Unhelpful' factors*

Aspect Code	HELPFUL FACTORS	Aspect Code	UNHELPFUL FACTORS
Curriculum design, content and organisation 1			
1	Pre-reg. Students up-date you. You can become stale in routine practice		
1	Preparing pre-reg. Students for vivas refreshes your memory and invigorates you		
1	Their freshness and enthusiasm - they think it's going to be great!		
1A	Core university training is essential	1A	Many have very poor interviewing skills on entering the hospital and do not know how to take patient histories. It is a skill that never seems to be taught.
		1A	An understanding of the relevance of some parts of the course often only comes with experience in practice.
		1A	Another weak area is what I would call presentation skills, or presenting a case about a patient. With medical students this is drilled into them by year three. When you do a ward round the consultant asks you about the patient and there is a set pattern of how to do it. This is totally lacking in optometry students. I think it is important for clinical people, with an increasing role in Shared Care, for example.
		1A	I worry about unexpected gaps that appear in the basic clinical knowledge of new people starting.
		1A	Only 30% of all students get through PQE first time, even with the further training. I always think this is an indictment of the gap between the graduate and the PQE. I believe we should be moving towards registerable degrees.
		1A	Some of the leaders of our universities want to raise optometry into something much close to ophthalmology and that does not met the practical needs of the profession that has to provide the service to the customer/patient.
		1A	Some aspects of the curriculum are interesting subjects but I question their relevance to being an optometrist.

Table 8.11 continued

Aspect Code	HELPFUL FACTORS	Aspect Code	UNHELPFUL FACTORS
1C	The majority of people coming into optometry seem to be pleasant, without delusions of grandeur	1C	In a hospital you have to work as part of a team and perhaps interact more than in other practices.
1C	Always impressed by the high calibre of individuals, but they do lack the interpersonal skills to deal with the public		
1C	Some programmes incorporate people management skills, e.g. how to be a team leader and member, also interviewing		
	NUMBER OF COMMENTS = 7		**NUMBER OF COMMENTS = 8**
Teaching, Learning, Assessment 2			
		2A	Lots [of pre-reg. students] come with little understanding of what they are actually going to have to go through in the pre-reg. year, from the point of view of exams. etc. They have poor understanding and little experience of oral exams, and the PQEs are oral. Some universities have mock PQEs as part of their final exams. but not all.
		2A	Candidates (for PQE) have not been taught how to perform at a viva: this should be part of the undergraduate programme.
		2A	I am aware that universities can only do so much practical work, because of lack of patients to work with.
		2A	I have reservations about reducing the time spent on hospital placements to one week. Is it enough to learn anything useful? (but I do understand the financial constraints)
		2A	When I get a pre-reg. student they usually have not married the academic knowledge with the clinical skills, there is a detachment of the two.
		2A	The standard of PQE is not going up, neither are success rates. Are all practice schemes up to scratch?
		2C	Optometrists are poor dispensers
		2C	New recruits are not good at contact lenses
	NUMBER OF COMMENTS = 0		**NUMBER OF COMMENTS = 8**

Table 8.11 continued

Aspect Code	HELPFUL FACTORS	Aspect Code	UNHELPFUL FACTORS
Student support and guidance 4			
		4B	Interviewing prospective students could be helpful, but it is very time-consuming and I am not sure if universities would be looking for the same qualities as employers, and of whom there are different types with different needs.
4F	That I help in the student clinics; I get to know the students and this helps our recruitment.	4F	There is also a lack of understanding of what the practice is really about and what the work involves. Some go into jobs in the wrong sort of environment, e.g. into a multiple practice when they might do better in a different sort of practice.
	NUMBER OF COMMENTS = 1		**NUMBER OF COMMENTS = 2**
Learning resources 5			
		5C	New graduates do not have the experience of modern equipment that I would like.
	NUMBER OF COMMENTS = 0		**NUMBER OF COMMENTS = 1**

There are no comments under Aspects 3, 6, 7, 8 or 9.

All but one of the comments about 'helpful' features fall within Aspect 1 (Curriculum design, content and organisation). The calibre of the new graduates is praised, and the fact that helping them also refreshes their own knowledge was found to be helpful. Unhelpful factors are evenly divided between Aspects 1 and 2 (Curriculum design, content and organisation, and Teaching, learning and assessment), with one or two comments in Aspect 4 (Student support and guidance), and Aspect 5 (Learning resources). Interviewees comment on gaps in clinical knowledge and on the low first time pass rate in PQEs (30%). Issues to do with the level and the purpose of the programme are raised again. One interviewee said "Some of the leaders of our universities want to raise optometry into something much closer to ophthalmology and that does not meet the practical needs of the profession that has to provide the service to the customer/patient." Another interviewee comments that the universities may be looking for different qualities in candidates for the programme than employers are looking for in recruits. The effectiveness of career advice in the universities is also questioned. The lack of experience of modern equipment is also unhelpful.

8.5.1.3 Additional quality issues

Additional quality issues provided by employers during the interviews are presented in Table 8.12 below.

Table 8.12

Interviews with employers: *Additional Quality Issues*

Aspect Code	ADDITIONAL QUALITY ISSUES
Curriculum design, content and organisation 1	
1A	I do not think the general public know the difference between dispensing opticians and optometrists. Two levels of course would not be helpful unless the public was educated in the difference.
1A	I would like to see alternative routes into the present level of competency and examinations that would bring us back to some of the more practical levels of the profession, and not continuing to lift up certain aspects of the training.
1A	I would like to see fast-track courses, modular courses which allow people from different disciplines to move in. The College is very protective. Academics have very heavy input into both the GOC and the College. There are not many from multiple practices on the councils - and we employ the vast majority of pre-reg. opticians coming out of the universities.
1A	I believe there will be a small proportion of the profession who will want to go on and do such things as drug therapy, shared care. This is going to be a very slow-moving thing because the medical profession will only move slowly.
1A	There is talk of a four year course. The cost would be horrendous and I do not see any gain. if anything, we are getting further back from a registerable degree as there is less practical experience on offer.
1A	It has always been a problem, if you like, of an undergraduate course, you are taught so much, there is so much information but ultimately to do a basic eye examination you use a relatively small proportion of those skills you have been taught in theory and in practice.
1A	I do not know if employers should have more input to the curriculum. Requirements from employees will vary. How would the Managing Director of a multiple, for example, respond?
1B	I would like to see more emphasis on the service to the patient, because at the end of the day that is where all our income comes from, whether it be the universities indirectly, the companies, or the individual optometrist.
1B	Undergraduates are probably taught little about changing economic factors in the profession, balancing quality and quantity and so forth. There are many aspects of clinical and business practice that optometrists need to know. It is as important in hospitals as in general practice.
1B	I spend quite a bit of time with my pre-reg. students discussing tax and other financial matters, perhaps there should just one or two lectures at university to explain business and financial practices.
1B	The majority of students coming out of university are ultimately going to be going into a business and they really are quite blinkered in this area. They do not seem to see the connection between the profitability of the business and how they get paid.
1B	Business studies would be a useful addition to the programme, it would seem especially appropriate for programmes run in universities where there is also a Business School.
1C	Communication skills are very important, more so than class of degree.
1C	New graduates are arrogant and think they know everything.
1C	I think the students should be encouraged to go for vacation work, preferably at an opticians, but failing that in a job where they have to deal with the public.
1C	I think things are getting better, and have done so in the last four or five years. In the clinics, I see that the students do consider the patient more as a real person. They are getting better at talking to them, at getting descriptions of symptoms. I am not sure what part of the programme is helping them to do that.
1C	When I interview for new staff I look for very basic things like presentation and communication skills and the ability to cope with pressure at the interview. I would not say that technical knowledge is unimportant but I would not say it is the most important thing.

Table 8.12 continued

Aspect Code	ADDITIONAL QUALITY ISSUES
1C	In hospitals patients can be quite difficult to manage; children, elderly people losing their sight etc. I think the skills you need are probably somewhat different from community practice optometrists.
1C	Although I am told programmes are getting better in terms of academic content, I am not sure whether the "end product" (and I have recruited graduates for many years) is getting better.
1C	I am looking for students who are highly motivated about their degree and their career as well as having a personable, friendly character.
1C	There are gaps in the communications skills area, but there are time constraints in the university programme, and a lot can only be learned from experience.
	NUMBER OF COMMENTS = 21
Teaching, Learning, Assessment 2	
2A	Because of the pressures of the expanding scope of optometry, and financing, there appears to be less opportunity for hands-on experience.
2A	The amount of hands-on practical experience seems to have diminished as the student intake has increased. Undergraduates coming to us have sometimes carried out few eye tests and fitted fewer contact lenses. We are having to start further back in our own training programmes.
2A	The courses do not develop clinical skills as much as the employer would like, but I know there have been problems with employing clinical tutors and also with the number of patients available.
2A	Many academic staff have not dealt with a patient for years. You can get out of touch. Perhaps more experience clinicians should be brought in to do more teaching, but they would need some stability in their contracts.
2A	I would like to see students developing a portfolio of their skills and performance in different clinical procedures, which follows them through their three years and can be given to someone like me at the end to work on in a supportive environment. Students should be closely examined and reviewed when they are in front of a patient and clinicians should sign their work.
2A	I would like new recruits to know more about contact lenses, although I accept that to become confident you have to see lots of patients and this is not feasible within the undergraduate programme. At the end of the pre-reg. year (and beyond) they can still be relatively inexperienced. The problem can become compounded as, as they are nervous of this area, one is disinclined to give them contact lens work and the longer it is left the harder it can become.
2C	Degree classification is an important factor: one can argue that it represents their knowledge base.
	NUMBER OF COMMENTS = 7
Student support and guidance 4	
4B	This year our PQE pass rate was reduced. The reason could be that in the year many of these candidates entered university, lower grades of A levels were accepted.
4B	Unlike other degrees where graduates go into a range of careers, optometry is quite narrow and is vocational training. We should recognise this and channel those who want to be a good optometrist and look after people.
4B	Getting three grade As at A Level (or 3Ds!) does not mean you are going to be the best optometrist at the end of the day. Nor are those, necessarily with first class degrees. The universities should be taking on those with interpersonal skills.
4B	Just as in medicine, those with high academic standards are not always the best practitioners.
4F	Students come wanting everyone to have some disease. In real life they do not have lots of pathology to look at and real life can sometimes disappoint, at least at first. Our own training helps them soon to catch on to real life.
4F	A lot of undergraduates are disappointed when they get into real life and try to retreat back into academia, but there are not always enough places for them and they get disillusioned all round.

Table 8.12 continued

Aspect Code	ADDITIONAL QUALITY ISSUES
4F	I feel that with the increasing A Level entry standards, graduates want some career structure at the end.
4F	The large companies, I think, rely very much on young graduates. I cannot imagine a 50 year old experienced optometrist being very comfortable in that environment. I am not sure what happens to them; maybe they set up on their own.
4F	The younger people work faster and produce the goods quicker, but I wonder what they will be doing in 20 years time. There are a lot of part-timers. Men can do quite well financially, even part-time, but the salaries don't come from nowhere, they have to be generated.
	NUMBER OF COMMENTS = 9
Quality assurance and enhancement 6	
6E	I would like to see one or two universities out-perform others in PQEs, but I am not seeing that - they are all much of a muchness.
	NUMBER OF COMMENTS = 1

There are no comments under Aspects 3, 5 7, 8 or 9.

Of all comments, 55% fall within Aspect 1 (divided almost equally between 1A, 1B and 1C), 24% fall within Aspect 4 and 18% in Aspect 2. There are no comments in Aspects 3, 5, 7, 8 or 9. Comments are largely expansions of the topics already raised. Clinical, interpersonal and also business skills are all required by employers but are thought to be lacking in optometry graduates. The move of optometry into primary health care is not thought by at least one interviewee to be imminent. The diverse needs of employers is acknowledged and doubt is cast in one case about the usefulness of input by employers into what the university curriculum should be. There is a general view that the funding restrictions in the universities is resulting in the students receiving less clinical instruction and that this is detrimental to employers. There are different views about the importance of degree classification; some think it is important (one said "degree classification is an important factor; one can argue that it represents the knowledge base"). The majority suggested that they take the academic side for granted when recruiting graduates and look for other qualities. One respondent said "Getting 3 grade As at A Level (or 3Ds!) does not mean you are going to be the best optometrist at the end of the day. Nor are those, necessarily, with first class degrees. The universities should be taking on those with interpersonal skills". The career structure, or lack of it, for optometrists is a problem area. In terms of quality assurance, one interviewee said "I would like to see one or two universities out-perform the others in PQEs, but I am not seeing that - they are all much of a muchness".

8.5.1.4 Ways in which expectations and reality did not match

Interviewees gave the following ways in which their expectations had not been matched by the reality:

- Students are not as literate as they should be. Documentation and record-keeping is very important.
- I would like graduates to leave the university running so that they do not have to take three or four months before they actually "get into" the pre-reg. year.
- We are looking for people who are robust clinically and able to deal with difficult patients. It is very individual and maybe does not reflect on the universities.
- Optometrists who come out of university with quite a basic qualification are happy to remain with that. I sometimes fear there is a need to engender a responsibility for self-learning. It is easier to instil ideas of lifelong learning while people are still undergraduates. To develop skills in the best interests of patients must improve the quality of care.
- I am disappointed that the driver for entry into the profession is often finance rather than a calling for optometry.
- I am disappointed that some of the third year students are talking about high salaries, rather than their career development.

8.5.1.5 Most important aspects

The following were identified by individual respondents as the most important aspect for them:

- Sound clinical skills
- Clinical attitudes
- Developing interpersonal skills
- Communication skills
- Numbers of graduates - do not see that there are enough [graduates] in the profession to meet demands in the next ten years.

8.5.2 Results of the survey

8.5.2.1 Expectations and priorities

Table 8.13 below gives the mean scores for expectation in ranked order, indicating the features which the employers consider to be of greatest and least importance to them.

Table 8.13

Employers survey: *The Curriculum (Section 6 of the staff survey) Mean Expectation Scores, in ranked order*

	Features	Mean Expectation Score	Rank
6.07	Develop students' ability to communicate effectively (written and oral	6.769	1
6.01	Lead students to employment as an optometrist	6.462	2
6.11	Develop students' self-management skills	6.385	3
6.06	Develop students' problem-solving skills	6.154	4
6.05	Concentrate on giving students subject knowledge required by the profession	6.154	4=
6.08	Provide good opportunities for student teamwork	5.462	6
6.09	Encourage students to be innovative (do things in new ways)	5.231	7
6.12	Include adequate work experience for students e.g. hospital placements	5.154	8
6.10	Develop students' ability to use information technology	5.077	9
6.13	Offer students some subjects/topics as options (modules)	4.923	10
6.03	Facilitate students' progression to postgraduate study	4.077	11
6.04	Encourage students' high academic achievement above all else	3.462	12
6.02	Be able to lead students to employment other than as an optometrist	2.154	13

Consistent with the strong views expressed during the interviews, Feature 6.7 ("Develop students' ability to communicate effectively (oral and written)") comes at the top of the list, followed by Feature 6.1 ("Lead students to employment as an optometrist"). At the bottom of the list are Features 6.2 ("Be able to lead students to employment other than as an optometrist") and 6.4 ("Encourage students' high academic achievement above all else").

8.5.2.2 Satisfaction with the programme in as far as it is perceived to meet or not meet expectations

Table 8.14 below presents the difference between the mean scores for expectations and for perceptions.

Table 8.14

Employers Survey: ***The Curriculum (Section 6 of Staff Survey). Perception/Expectation differences based on the calculation of the mean score for expectation minus the mean score for perception, in ranked order***

	Features	Difference between expectation and perception mean scores	Rank
6.07	Develop students' ability to communicate effectively (written and oral	3.462	1
6.11	Develop students' self-management skills	2.846	2
6.06	Develop students' problem-solving skills	2.308	3
6.05	Concentrate on giving students subject knowledge required by the profession	1.769	4
6.01	Lead students to employment as an optometrist	1.212	5
6.08	Provide good opportunities for student teamwork	1.154	6
6.09	Encourage students to be innovative (do things in new ways)	0.692	7
6.12	Include adequate work experience for students e.g. hospital placements	0.385	8
6.13	Offer students some subjects/topics as options (modules)	0.385	9
6.10	Develop students' ability to use information technology	0.154	10
6.03	Facilitate students' progression to postgraduate study	-0.538	11
6.02	Be able to lead students to employment other than as an optometrist	-0.769	12
6.04	Encourage students' high academic achievement above all else	-1.923	13

It indicates, again consistent with the views expressed during the interviews, that Feature 6.7, which is about communication skills, caused most dissatisfaction. The three Features at the bottom of the list (6.3, 6.2 and 6.4) have negative 'scores' indicating that, in the views of the employers, the BSc Optometry programme (and others similar to it) put too much emphasis on encouraging high academic achievement and preparing students for careers in professions other than optometry, and for progression to postgraduate study.

8.6 Patients who attend the clinics

As described in Chapter 5, Section 5.4.3.3, the method for collecting data from the patients, and for subsequently analysing it, was different from that used for other stakeholders in that a structured questionnaire was used and the classification using the 'HEFCE expanded list' was replaced by the following classification scheme:

1 Skills and knowledge
2 Currency/up-to-dateness
3 Attitude/patient care
4 Administration/environment
5 Value for money
6 Reputation/recommendation
7 Other.

8.6.1 The results of the interviews

Table 8.15 on pages 333-337 gives the results of each of the questions included in the interviews with patients.

Table 8.15

Patient Interviews: *Responses to the questions*:

a) Could you tell me your main reason(s) for *originally* choosing to come here rather than to any other optician?

Code	Response
Skills and Knowledge	
1	Because it is supervised you get a second opinion.
1	I feel as though I get better service than from a shop.
1	Heard about it on the television (the driver's project) and thought it would be a more comprehensive test than given elsewhere.
1	I had some difficulties with my eyes using the glasses I have. I heard about the driving test comments and that this test could be more thorough so I thought I would come and see what it is like.
	TOTAL COMMENTS = 4
Currency/up-to dateness	
2	Up-to-date diagnosis as it is a teaching clinic.
	TOTAL COMMENTS = 1
Attitude/Care	
3	Attracted by what I heard of the thoroughness, at the time I was considering contact lenses which were quite a new development then.
	TOTAL COMMENTS = 1
Administration/Environment	
4	Convenience of location for me
	TOTAL COMMENTS = 1
Value for money	
5	
	TOTAL COMMENTS = 0
Reputation/Recommendation	
6	Personal contact with a friend.
6	Recommended by a lady whose glasses I admired and whose daughter is a student here.
6	Connection with the School for the Blind (now closed)
6	Dissatisfaction with the service I was getting from private opticians and concern that the fact that I had a difficult prescription, that they had got wrong, was dissuading them from re-prescribing. On recommendation I had the impression that here they would prescribe the right glasses even if they had to keep changing them.
6	Recommended as being very thorough.
6	Talking to friends at the bowling club about how expensive glasses have become led to a recommendation from a delighted friend whose wife had been a patient here; this clinic had diagnosed a growth which had been missed by other opticians.
6	My wife heard about it first and when she had been she said how brilliant it was.
6	My previous optician retired. I have a difficult prescription and a friend recommended here.
6	Recommended as a place where they spend a lot of time with you and it is very thorough.
6	Recommendation from another patient
6	Recommended by a friend (a doctor) who had been here.
6	Recommended as being very good for varilux lenses.
	TOTAL COMMENTS = 12

Table 8.15 continued

Code	Response
Other	
7	I am a student here, on this course.
7	Husband was a lecturer here in Vision Sciences.
7	I feel as though I am being of assistance, the students need to practice
7	My husband came here as he thought he was not getting a good service from other opticians, and records were not being kept and transferred from optician to optician.
	TOTAL COMMENTS = 4

b) What have you found to be particularly helpful about the service you have received here?

Code	Response
Skills and knowledge	
1	A very thorough test.
1	I feel you are getting a good examination.
1	It is thorough - students explain more to the patients, they have to justify themselves more to the public.
1	Knowing that everything the students do is verified by a supervisor gives confidence.
1	The dispenser is obviously well-qualified
1	I was very impressed that they got my varifocals right first time; the private optician I had used previously had used the complications associated with them as a reason for not prescribing them, also others' experiences with varifocals made me think they would be difficult.
1	The fact that the students are supervised gives confidence.
1	You get a more thorough test than by going to a private optician.
1	I like knowing what they are doing - the students talk you through the process, also you hear their conversations with the supervisors.
1	They enquire about your general health - they want to get your background in position before they perform on you, this is a good thing as you might have a complaint to do with your eyes, as I have.
1	The thoroughness of the testing.
1	It is very thorough.
1	It is particularly thorough - especially in dealing with problems, cataract, haemorrhage etc.
	TOTAL COMMENTS = 13
Currency/up-to-dateness	
2	Being a teaching university means they are up-to-date with the technology.
	TOTAL COMMENTS = 1
Attitude/care	
3	A very understanding and caring atmosphere.
3	Students are always very keen, and it is pleasant dealing with people who are keen.
3	The dispenser is very professional
3	Everyone is generally very friendly
3	Both times I have been here the students could not be faulted.
3	The students are very patient.
3	I liked the fact that the student was able to tell me what was happening and what she could see during the eye examination.
3	Everyone is helpful, pleasant, thoughtful.
3	They listen, this is very important.
3	They do not rush you.
3	They are very patient with me.
3	People have time for you.
3	The testers have an excellent attitude - they care for you.

Table 8.15 continued

Code	Response
3	The professionalism of the supervisors.
3	The students are very polite.
3	The service was very good, plenty of time was taken, it was unhurried and thorough.
3	Everyone was helpful.
	TOTAL COMMENTS = 17
Administration/environment	
4	I got through quickly to book the appointment.
4	The receptionists are very good.
4	I was not kept waiting
4	The appointment was on time.
	TOTAL COMMENTS = 4
Value for money	
5	Good value for money - lenses and spectacles.
5	Gives good value for money, e.g. cost of varifocals.
	TOTAL COMMENTS = 2
Reputation/recommendation	
6	
	TOTAL COMMENTS = 0
Other	
7	The contact with young people.
7	There is a good selection of frames.
7	It is useful to know that my department here in the university will pay as I am a VDU user.
7	I would not go anywhere else.
7	I am content to support the students - although they are nervous!
7	It is a help to the students - especially if there is a particular eye condition.
7	Very acceptable.
	TOTAL COMMENTS = 7

c) What have you found to be particularly unhelpful about the service you have received here?

Code	Response
Skills and knowledge	
1	Students unsure of apparatus, but not a major issue because of the back-up of the tutors.
1	The first time I came here they gave me the wrong prescription, but they did rectify it as soon as I came back.
	TOTAL COMMENTS = 2
Currency/up-to-dateness	
2	
	TOTAL COMMENTS = 0
Attitude/care	
3	
	TOTAL COMMENTS = 0
Administration/environment	
4	If any of the lenses have to be changed it takes a long time, this is especially a factor because I travel a long distance.
4	An awkward location.

Table 8.15 continued

4	The long time you have to wait for glasses - compared with "over the counter" services, this side has not kept pace with modern technology.
4	The discontinuity between the eye test and the dispensing service. It is very bureaucratic to see the dispenser - you have to go to the clinic twice or more, and have to make an appointment to see the dispenser even for minor repairs.
4	The receptionists did not come over as very professional/experienced.
4	The seats in reception are a bit low for the elderly.
4	You sometimes have to wait.
4	Could do with a small buffet.
4	I would like to be able to go from the test to order new glasses, it's inconvenient to keep coming back.
4	The drinks machine is not working.
4	It was cold in the clinic the last time I came.
4	They did have a good restaurant in the Vauxhall Centre, but now it is closed.
Value for money	
5	
	TOTAL COMMENTS = 0
Reputation/recommendation	
6	**TOTAL COMMENTS = 0**
Other	
7	Test is slow, but I accept that this is because they are students.
7	Students should tie back long hair.
7	Take too long in the eye test.
7	It takes a long time, but this is fair enough.
7	The range of frames in the dispensers is limited, but I continue to go because I prefer to go to the clinic for the test.
	TOTAL COMMENTS = 5

d) What aspect of the service differed from your expectations?

Code	Response
Skills/knowledge	
1	The confidence that they would go through all the tests as a procedure, e.g. glaucoma, previously my optician had to be prompted to do this.
1	The dispensers are very good.
1	This was a much more thorough test than I have had before.
1	The depth of examination is far superior to what you get from other opticians.
1	I did not really know what to expect but tests which are not done at other opticians are routine here.
	TOTAL COMMENTS = 5
Currency/up -to -dateness	
2	
	TOTAL COMMENTS = 0
Attitude/care	
3	It was more pleasant than I expected.
3	Everyone is helpful.
	TOTAL COMMENTS = 2
Administration/environment	
4	The reception area was more pleasant.
4	The range and number of cubicles - you could get lost!
4	The wait for "goods".
	TOTAL COMMENTS = 3

Table 8.15 continued

Value for money	
5	Charges (prices of frames etc.) are lower.
5	Prices are higher for lenses and spectacles - compared with, for example, outside "two-for-one" offers.
	TOTAL COMMENTS = 2
Reputation/recommendation	
6	
	TOTAL COMMENTS = 0
Other	
7	I have been pleasantly surprised.
7	The time it takes, although you are warned that it takes approximately two hours.
7	Exceeded expectations - they have done more than I thought.
	TOTAL COMMENTS = 3

In summary, the majority of patients interviewed went to the clinic originally because of a personal recommendation. Where specific reasons for the recommendation are given, they are most often stated in terms of the "thoroughness" of the service received. This is particularly the case when there are concerns that an eye condition may have complications which, in the perception of the patient, will be dealt with better in a university than in a general optometric practice. "Thoroughness" is also frequently given as a response to the question about what aspect of the service had been found to be particularly helpful. The high level of care, patience and friendliness of students and their supervisors is praised. Efficient administration is also appreciated. Not many unhelpful factors are raised, and of those that are, most relate to the physical environment and to the length of time it takes from having the eye test to receiving spectacles. Some mention the length of time it takes to complete an eye test as an 'unhelpful' factor, but usually this is mitigated by an understanding that the test is thorough and that the student is still learning.

8.7 Conclusions on the Voice of other stakeholders

This section draws conclusions on the voice of other stakeholders (i.e. other than students and departmental staff) in the BSc Optometry programme and considers, as in the corresponding sections of Chapters 6 and 7:

- purpose
- what the customers want, or believe they need, to achieve that purpose
- how far they perceive that their needs are being met.

8.7.1 Aston University management

Purpose

The interviewees give no direct comment on what they believe to be the purpose of the BSc programme. However, one comment was "[it] is a practitioners' programme taught substantially by scientists, not optometrists ... feel this is not the optimum way". This suggests that managers at the university rather than the departmental level share a view of the programme's purpose with the students, rather than with the members of the department. They do, however, share the view that a further purpose is to provide high standards and high quality.

What they perceive they need to achieve this purpose

The university managers want the BSc Optometry programme to help them to achieve the university's goal of expanding student numbers and containing costs. They believe that the BSc Optometry programme can help to achieve this because of its good reputation. They therefore require that the programme continues to improve its standards and quality to become a "Centre of Exellence". It differs from the students' view of purpose, however, in that the managers strongly support the need for research. The university also requires the programme to have a modular stucture which will enable a contribution to other programmes offered by the university.

How far they perceive that their needs are being met

Concern is expressed that optometry is not rich in research and that there is a discrepancy between the type of people needed to carry out research and the kind of people needed to help educate and train future optometrists. The programme was also seen as expensive compared with others offered by the university, primarily because the expensive clinical element is not funded by HEFCE as the programme is classified as "a subject allied to medicine".

8.7.2 The General Optical Council

Purpose

The GOC interview indicated strongly that in as far as the BSc Optometry programme is contributing to the training of future optometrists, its purpose must be to ensure that optometrists are trained to a standard which will ensure that they are safe to practise. It was also very direct in acknowledging that confusion exists about the purpose of the programme (and others like it). The interviewee stated that those who offered the programmes must address what it is they are trying to produce - a Vision Scientist or an optometrist, i.e. is the purpose to educate future academics and researchers, or is it to educate and train those who would pursue a career as an "eye tester".

Needs

In the interests of ensuring the future safety of the public, the GOC needed the programme to have a 4:1 staff student ratio for clinical instruction. This implies that, unless there is significant additional funding, there should be no further expansion in student numbers.

How far the needs are perceived to be met

The implication was that there is concern that the universities might over-emphasise the academic aspects of the programme and expand student numbers at the expense of ensuring the vital need to protect the public.

8.7.3 The College of Optometrists

Purpose

From the perspective of the College of Optometrists the purpose of the programme, as it concerns them, is to educate and train students who will become high calibre practitioners with a very high standard of knowledge, ability and competence. They see the universities training students to a level which will allow them to play a future role in primary healthcare, including drug therapy, i.e. a higher level of clinical practice than is currently required.

Needs

The College requires the universities to uphold the standards agreed by the profession and to "turn out graduates who, with further practical training, are able to qualify at the qualifying examinations". They also need the universities to develop the interpersonal skills required by professional optometrists. Communication skills were seen to be of particular importance. This was to enable them to provide a better service to patients but also to communicate the importance and the needs of optometrists to government and other influential bodies. The lack of sufficient recognition of the significance of the work of optometrists to the health and safety of the nation was thought to be at least in part due to poor communication skills within the profession. The need for more HEFCE funding was supported.

How far the needs are perceived to be met

There was broad satisfaction with the programme.

8.7.4 HEFCE

Purpose

The fact that HEFCE categorises the BSc Optometry programme, for funding purposes, as a "subject allied to medicine" suggests something about what HEFCE does **not** see as a purpose of the programme, i.e. it does not see it as providing clinical training to the same level as programmes designed to educate and train future doctors. Optometry is not subject to any national resource planning in the same way that some other health care services are. The numbers are influenced by the funding mechanisms which are applied to all university programmes which are in receipt of public money as described in Chapter 2. The interview with HEFCE did not provide any comment on the perceived purpose of this particular programme.

Needs

Consistent with the approach adopted by the HEFCE method of assessing the quality of educational provision, the interviewee stated the HEFCE need, from the point of view of the quality assessment exercise, as being that subject providers will be able to articulate "for us and for all other

stakeholders, what they are trying to achieve for their students and what their students can reasonably be able to achieve as a result of being successful graduates of this programme". They also needed providers to be self-critical and to share good practice with others in the system.

How far needs are perceived to be met

No aspects giving rise to dissatisfaction were mentioned.

8.7.5 Employers

Purpose

There is a clear indication from the interviews and from the responses to the survey that, from the perspective of the employers, the purpose of the BSc Optometry programme is to produce a supply of employable optometrists. The survey response resulted in a negative 'score' for "the gap" between expectations and perceptions of Feature 6.2 ("Be able to lead students to employment other than as an optometrist") and of Feature 6.3 ("Facilitate students' progression to postgraduate study").

Needs

Employers need the programme to supply them with graduates who have the knowledge, understanding and skills, including interpersonal skills, required of optometrists. Great emphasis was put on the importance of interpersonal skills relative to academic ability. The employers also wanted graduates to come to them with some work experience and they wanted them to demonstrate business acumen.

How far needs are perceived to be met

Feature 6.7 ("Develop students' ability to communicate effectively (written and oral)") had the largest difference between mean expectation and mean perception scores. The poor interpersonal skills of new recruits was similarly emphasised in the interviews. There was also a need for less emphasis on academic ability when students were recruited to the programme. They needed more emphasis to be put on personality and suitability for a profession that would bring them into everyday contact with people, including

the frail, the elderly and children who may not be able to express themselves well and who therefore needed particularly skilful attention.

There was a suggestion that the standard of clinical skills demonstrated by students was declining. There was a need for more resources to be put into the clinical element of the programme. There was some disagreement about whether there was a need for more or fewer graduates each year.

8.7.6 Patients

Purpose

The patients who come to the clinics to an extent share the view of the College of Optometrists in that their comments suggest that they see the programme's purpose as being to provide eye care which is of a higher order than they would receive from a general optician.

Needs

The most significant needs of the patients are indicated to be high level skills and knowledge and a caring, professional attitude.

How far needs are perceived to be met

There is a high level of satisfaction with the service received. Any dissatisfaction noted is concerned with what might be considered to be the commercial or administrative aspects of the service, for example, the delay between the eye test and receiving the spectacles from the dispenser.

8.7.7 Overall commentary from 'other' stakeholders

Not surprisingly there were some differences of emphasis expressed by 'other' stakeholders, concerning the purpose of the BSc Optometry programme. Overall, however, a surprisingly consistent theme of 'relevance' emerges. This aligns more closely with the students' perception of the programme as a stepping stone to a job, than with the departmental staff's view of providing a science-based general education with some components of professional training.

8.8 Comparison of the research findings described in Chapters 6, 7 & 8

Table 8.16 on pages 345-352 draws on the research described in this chapter, and also in Chapters 6 and 7, to bring together a comparison, in summary form, of the features which each of the major sets of stakeholders considered to be important in meeting their needs. The table also indicates the areas where stakeholders indicated dissatisfaction. Dissatisfaction was expressed in terms of concern that either a particular feature was not emphasised enough in the programme or that it was, in the view of certain stakeholders, over-emphasised.

Features which were considered by each stakeholder set to be particularly important are identified in the table by a bullet point (•). Areas which were considered to be over-emphasised are indicated by the symbol x+. Areas which were considered to be under-emphasised are indicated by the symbol x-. An empty cell denotes that a feature was not identified as being amongst those which were considered to be of greatest importance by the stakeholder set concerned. It does not necessarily mean that the stakeholders considered it to be unimportant or irrelevant.

It is also important to note that the data relates to the results of the combined subsets of students (all years) and of the combined subsets of staff (all categories). In some instances, therefore, differences between the subsets may be hidden. It is important that this summary table is not taken out of context and should be viewed in relation to the detailed analyses provided earlier.

The table does, however, clearly show that although the programme's published aim, as described in Chapter 5, is "to offer an integrated professional and scientific education and training", the programme features which are considered to be of most importance to most stakeholders are those which relate specifically to the professional education and training of an optometrist, rather than those which relate to learning *per se* (for example, the feature "Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge" which is included in section d - Teaching and Learning) .

The features which are of great importance to four or more sets of stakeholders are :

- "Lead students to employment as an optometrist"
- "Develop high standards of patient care"
  (from section e - The curriculum)

- "Have sufficient and adequately equipped clinics for undergraduate teaching"
- "Have adequate technical assistance and support in the clinics for undergraduate work".
- "Give adequate help to students with practical work".
  (from section d - Teaching and learning)

The areas of dissatisfaction are more scattered throughout the table, but features which 3 or more sets of stakeholders express dissatisfaction with are:

- "Recruit only students with high academic ability and entrance qualifications" (from section c - Student recruitment)
- "Develop students' ability to communicate effectively (written and oral)" (from section e - the Curriculum)

Stakeholders expressing dissatisfaction with these features considered that the first is emphasised too much and that the second is emphasised too little. The dissatisfaction with these features are further reflections of the needs of some stakeholders which are focused on the practical rather than the academic content of courses. The departmental staff are in a minority in their view of the need for equilibrium between the areas of professional and general scientific education.

These views and their relationship to the different perspectives on the purpose of the programme, as they have been discussed in this and the two previous chapters, are further explored in Chapter 9 which relates the findings to the research hypothesis.

Table 8.16

Comparison, in summary form, of the research findings described in Chapters 6,7 and 8; features of most importance to the stakeholder groups, and the major areas of dissatisfaction

a)The environment and the culture

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Operate within a department where staff and students have a shared sense of purpose				•				
Operate in a department where individuals are given a clear view of what they are expected to achieve		•						
Operate within a department which is well integrated into the university								
Operate within a department where individual views are taken into account								
Reward staff for high quality research								
Reward staff for high quality work with undergraduates		x-						
Reward staff for their contribution to the department's success		x-						
Regard teaching and research equally as academic activities		x-						
Ensure that the disparate skills of all staff are used to the best advantage of students and staff		•	•					
Take place in an attractive, pleasant campus		x+						
Provide suitable accommodation for administrative purposes								
Have teaching rooms which provide an environment conducive to learning (i.e. they are comfortably furnished, not overcrowded etc.								

b) Quality assurance and enhancement

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Regularly receive feedback on the programme						•		
Ensure that feedback on the programme leads to improvements	x-					•		
Have staff who engage in research			•					
Have, within the staff team, the range and correct balance of knowledge, expertise and interests to match departmental requirements		• x-						
Have staff with a high academic standing and reputation			•					
Adhere to published timetables e.g. lectures not cancelled, appointments kept		•						
Incorporate the views of employers into approval and review of the programme								
Identify good practice in teaching and learning and share ideas and experience with colleagues						•		
Provide professional and personal career development to meet requirements		x-				•		
Appraise individual staff members								
Encourage staff to be innovative (do things in new ways)								

c) Student recruitment

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Employers	Patients
Give prospective students adequate information about the programme	•	•				•		
Interview prospective students							•	
Recruit only students with high academic ability and entrance qualifications	X+		•	X+	•		X+	
Give recognition at recruitment to prior learning and/or work experience								
Give recognition to students with different academic backgrounds								

d) Teaching and learning

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Encourage students to be actively involved in the learning process rather than be passive recipients of knowledge		•						
Encourage students to be independent learners: to identify their own strengths and weaknesses and to be responsible for their own learning								
Offer students a variety of learning experiences (balance between lectures, seminars, practicals, self-study)								
Help students to make the transition from school to undergraduate study		X-						
Have teachers who explain what students will be expected to have learned/know as a result of each lecture and item of coursework	X-							
Have teachers who make substantial use of their own research in their teaching								
Have teachers who set students regular work for assessment								
Have teachers who provide lecture notes and reading lists which facilitate study								
Have teachers who link their lectures/tutorials to other parts of the programme								
Have teachers who know how to help students to learn	• X-							
Have teachers who show comprehensive knowledge of their subjects	•							
Have students who are able to work on their own with little guidance from their teachers	X+							

e) The curriculum

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Lead students to employment as an optometrist	•	X+		•	•		• X-	•
Be able to lead to employment other than as an optometrist							• X+	
Facilitate students' progression to postgraduate study							• X+	
Encourage students' high academic achievement above all else	X+						• X+	
Concentrate on giving students subject knowledge required by the profession		X+					• X-	
Develop high standards of patient care	•			•	•		•	•
Develop students' problem-solving skills								
Develop students' ability to communicate effectively (written and oral)		X-			• X-		• X-	•
Provide good opportunities for student team work								
Encourage students to be innovative (do things in new ways)								
Develop students' ability to use information technology								
Develop students' self-management skills							•	
Include adequate work experience for students, e.g. hospital placements		X+						
Offer students some subjects/topics as modules	X-							

f) Student assessment, progression and achievement

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Give students useful feedback from assessed work to help them channel their improvement efforts	• X-	•						
Undertake student assessment in a work environment where appropriate								
Base final student assessment on examination only	X+	X+						
Result in a qualification which is more highly regarded than similar qualifications from other universities								

g) Learning resources for staff and students, student support and guidance

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Provide for the welfare of students through a range of support services (financial,counselling, medical, accommodation)								
Make study skills advice available to students								
Have a system which provides adequate individual tuition	x-			• x-				
Timetable tutorials and practicals to give all students a consistent level of help								
Monitor students' attendance at lectures, tutorials and practicals								
Have staff who discuss attendance at lectures, tutorials and practicals with individual students								
Have staff who are approachable and friendly	•							
Prepare students adequately for examinations	x-							
Give adequate help to all students with "foundation" subjects such as mathematics and physics	x-							
Assess need for different levels of help with foundation subjects and provide it selectively to students	x-	x-						
Give adequate help to students with practical work				•	•		•	•
Have help available to students for all coursework when required								
Have sufficient and adequately equipped clinics for undergraduate learning	•	•		•			•	•
Have a library with adequate resources to cater for the learning demands of students	•	•						
Have adequate access for all information technology facilities (time and location)								
Have adequate information technology facilities for administrative purposes (fit for purpose)								
Have accessible technical and support staff to assist all information technology users	x-	x-						

g) Learning resources for staff and students, support and guidance - continued

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Have a library with adequate resources to meet research demands		•						
Have adequate technical assistance and support for research		• X-						
Have adequate technical assistance and support in the clinics for undergraduate work		•		•	•		•	•
Have adequate secretarial and administrative support for all staff activities								

h) Institutional management

	Students (all)	Staff (all)	Aston Mgmt.	GOC	College of Optom.	HEFCE	Emplo-yers	Patients
Expand student numbers			•	X+	X+			
Expand only in proportion to additional resources				•	•			

Chapter 9

Conclusions on the applicability of TQM to the English higher education system and implications for the development of TQM theory

9.1 Introduction

This thesis began by describing the English higher education "quality debate" which has continued without resolution for over a decade. The debate has focused on the meaning of quality in higher education and the means by which it can be assessed and improved. It has been suggested that a major obstacle to reaching agreement on these points has been the fact that any attempt to determine the quality of a product or service is dependent on an explicit statement of purpose. Barnett referred to the quality debate as a "power struggle where the use of terms reflects a jockeying for position in an attempt to impose own definitions of higher education" (Barnett, 1992, p.6). He also wrote of it being "less a debate about quality than a babel of voices" (ibid, p.3). Poor communication resulting in part from the lack of a common understanding and use of terminology such as "quality" and "standards" seems to have exacerbated the difficulties.

Within the universities there is evidence of the recognition of the need to improve managerial and educational practices and to accommodate the government's policy to increase the number of students benefiting from higher education. Academic staff wish, however, to change in a way which is self-directed and which embraces their own culture rather than to have a method imposed on them which they consider to be more suited to profit-driven organisations. While there may be agreement on the need for accountability, HEFCE's method of assessing the quality of educational provision is not considered to be entirely satisfactory; there is a view within the universities that it is burdensome and some see it as a threat to institutional autonomy.

It is considered likely that the government's interest in quality in higher education has been influenced by the way in which industry has tackled quality improvement. There is nothing in the literature, however, to suggest that the government is encouraging universities specifically to adopt TQM. Successful applications of TQM to education have been claimed, but there is

still disagreement, even amongst TQM advocates, about how far the methodology is relevant and applicable to education. Nevertheless, some of the key concepts in TQM do appear relevant to the issues which form a prominent part of the English higher education quality debate.

Against this background, this research has been designed to test the hypothesis that:

an understanding of quality in higher education, in the TQM sense, that is, set in the context of 'fitness for purpose' and 'meeting the needs of customers', would provide:

- a means of addressing and reconciling the needs of higher education stakeholders
- the basis of a shared understanding of quality in higher education and how it can be measured, assessed and improved
- a method to bring about improvements in educational and managerial practice.

Chapters 6, 7 and 8 provided the results of the detailed fieldwork which took the form of an in-depth "Voice of the Customer" (VOTC) investigation of the BSc Optometry programme offered by the Department of Vision Sciences at Aston University. This chapter further considers the research findings and whether there is support for the hypothesis. The chapter is in two parts. Part 1 considers, on the basis of the research findings, the applicability of TQM to the English higher education system. Part 2 considers whether lessons gained from the application of TQM to higher education have implications for the further development of TQM theory and practice in general.

PART 1

9.2 The applicability of TQM to the English higher education system

9.2.1 A means of addressing and reconciling the needs of higher education stakeholders

The empirical research used the TQM approach to quality, specifically VOTC analysis, to investigate the BSc Optometry programme. Its starting point

was the stated purpose of the programme "to offer an integrated professional and scientific education and training". It then considered who the customers (stakeholders) of this programme are and a decision was made to include the following in the investigation:

- Students
- Staff of the department
- Aston University management
- The General Optical Council (GOC)
- The College of Optometrists
- HEFCE
- Employers
- Patients who attend the clinics.

A method of collecting VOTC data to gain insight into customers' attitudes, perceptions and opinions regarding the quality of the programme was designed as a step in testing whether TQM could provide a means of addressing and reconciling the needs of higher education stakeholders.

9.2.1.1 Mental models

The debate about the purpose of higher education in general was described in Chapter 2. The investigation of the BSc Optometry programme provides detailed evidence that there are diverse views on purpose even in relation to a single university degree programme. The various stakeholders' perceptions of the purpose of the programme are governed by their own objectives and needs. The views on the quality of aspects of the programme are therefore equally diverse.

The objective of most students following the BSc Optometry programme, as shown in Chapter 6, is to become an optometrist. To achieve this they need to pass the examinations. While they are at university they tend to focus on this need and to judge the quality of the programme by the level and type of help they are given in achieving this personal goal. This can be in terms of 'features' (such as a library), or, more often, in terms of process (teaching/learning strategy). The majority of the issues raised by the students fell within the HEFCE Aspects 2 and 4 (Teaching, learning and assessment, and Student support and guidance), i.e. the Aspects which are

to do with the processes that help them to learn. Ultimately, however, it is the output of the process, seen as the qualification, which concerns them most. In a fairly simplistic way, students are subconsciously applying a conventional, 'manufacturing process' model of quality within which they are the 'raw material' to be transformed via the programme process into 'output' fit for the purpose of being an optometrist. In general, they see the process as being applied to themselves, and take little responsibility for proactive involvement in it.

The employers' objective is to recruit well-trained staff, and so, like the students, they are concerned with the output of the programme. They see the purpose of the programme as being to provide a supply of new recruits to the profession of optometry and they therefore need a pool of graduates with the knowledge and practical skills to enable them to become fully qualified optometrists, able to operate within the existing system of eye care as quickly as possible. The majority of issues raised by the employers fall within Aspect 1 (Curriculum design, content and organisation) and, more specifically, within Aspect 1A which is to do with the content of the course, and Aspect 1C, which covers the opportunity for the development of skills which facilitate progression to employment, notably generic, transferable skills. In other words, they are concerned that the programme should contain the 'ingredients', or the input, which they think will ensure the standard and quality of 'output' they require. Unlike the students, they are not very concerned with the nature of the 'transformation' process itself.

Like those of the employers, the issues raised by the College of Optometrists fall mainly within Aspect 1, i.e. the College is concerned that the curriculum should provide students with the skills and knowledge which will, at the end of the educational process, result in a supply of graduates who have the skills and knowledge which the College considers necessary for entry to the profession in its current state of development, and who will be capable of taking it into the future. The College thus differs from the employers in that it sees the purpose of the university programme as being to educate and train what might be thought of as the next generation of optometrists who they believe will play a future role in primary health care. The employers therefore do not share the College's view of the purpose of the programme and the consequent need to raise output standards. On the contrary, concern was expressed by the employers that the universities

might already be producing graduates to a higher standard than is required. The employers believe that this could be harmful to the profession as a supply of 'over-qualified' graduates would lead to dissatisfaction with optometry as a career.

The patients who come to the clinic have a view of the purpose of the programme which is similar to that of the College of Optometrists in that they consider that the programme's purpose is to provide eye care which is of a higher order than that which they would receive in a general optometric practice. For these two categories of stakeholders, therefore, the output of the process is very important, but they are also concerned about the quality of the process itself and, for the College in particular, its ability for progressive improvement. In a sense they apply a more service-like model of quality, whereby the experience of the transformation process is, in itself, a measure of quality.

The GOC needs to ensure that the standard of optometry training guarantees that students and qualified practitioners are fit for the purpose of safely testing the eyes of the public. To be sure of this, it requires the BSc Optometry programme to meet the GOC standard of staff student ratios of 1:4 for the supervision of clinical studies, and to have stringent output control standards. The issues raised during the interview emphasise these requirements, falling largely within Aspect 1 (Curriculum design, content and organisation) and Aspect 6 (Quality assurance and enhancement).

The issues raised by the senior management of Aston University fall largely within Aspect 9 (Institutional management), reflecting the university managers' view of the programme as serving a pupose within the wider plan of the university. This includes building on the programme's reputation in order to bring about expansion in student numbers but, in line with HEFCE policy, without a proportionate increase in *per capita* student funding. This is clearly at odds with the GOC's view of the purpose of the programme and its requirement for stringent staff student ratios to accommodate the need to uphold standards of public safety in optometric practice.

The staff of the Department of Vision Sciences support the stated aim of the programme which is to "provide an integrated scientific and professional training". At the end of the programme graduates should have received a

level of education which would enable them to take up careers as researchers or general scientists, or to go to an employer who will complete their education and training in optometry. Any suggestion that the programme is "vocational" would be disputed by staff. The concerns of the departmental staff fall into a wider spread of categories than those of any of the other stakeholders, although there is a strong emphasis on Aspects 2 and 4 (Teaching, learning and assessment, and Student support and guidance). The departmental staff's view of the role of the student in the educational process differs from that of most of the students in that they believe that students should take more responsibility for their own learning. This group of stakeholders also clearly regards the process itself (rather than the end result) as being of paramount importance, and is concerned primarily about maintaining the quality and integrity of the process. Furthermore, in as far as they expect the students as customers and consumers to play an active part in the process itself, they are applying what might be described as an advanced service-oriented model of quality. This is different markedly different from the 'manufacturing' model of quality which the students seem to apply.

The fieldwork clearly illustrates the different models of thinking which are being applied by the different stakeholders. A crucial question is whether the differences are reconcilable within a TQM framework.

9.2.1.2 TQM theory, systems and higher education

Deming defined a system as a "network of interdependent components that work together to try to accomplish the aim of the system" (Deming, 1993, p.98). He also wrote that a system must have an aim - "without an aim there is no system" (Deming, 1993, p.51). Once the aim has been defined, the process, or processes, by which it can be achieved can be designed and implemented. The system must also be managed and, as described in Chapter 3, this must include optimisation which is a key management process designed to orchestrate the efforts of all the components of the system towards achievement of the aim.

If all aspects of systems are not actively managed, they tend to disintegrate. Disputes occur between the different parties within the system or, worse still, they go their separate ways and develop their own aims which may be in

conflict with the overall aim of the system. TQM theory further holds that the bigger the system, the better will be the chance for greater gain for everyone but also, clearly, the task of management in holding it together becomes more challenging. The purpose, or statement of aim, therefore is important because it unites, or reconciles, the people who work within the system or process as they work together to achieve the common purpose.

The purpose statement is also of key importance because the quality of the result - the end product or service - will be judged by its fitness for that purpose; in other words, has the system achieved what it set out to do?

The adoption of the TQM definitions of quality in the context of 'fitness for purpose' has deep implications for higher education because it suggests that whether or not quality is being delivered can only be determined if the purpose to which effort is being directed is clearly defined.

The diverse opinions on the purpose of the BSc optometry programme suggest that the stakeholders are not naturally part of a coherent system in Deming's TQM sense. The VOTC data suggests that the current perception of the staff of the Department of Vision Sciences is that the system is the department itself. Academic staff, for example, do not necessarily see the value of bringing employers more closely into the system. They also consider that the university, which in TQM terms should be part of the same system, has aims which are not in the interests of the department, for example the aim to expand student numbers without additional funding, and the discrepancies between the recognition given to research activities and to work with undergraduates. In a TQM culture these features would signal the danger of suboptimisation and its harmful consequences to the system as a whole.

TQM would require the BSc optometry programme stakeholders to have identified roles as internal and external customers, suppliers and 'processors' in the manner of Juran's triple role, as described in Chapter 3. A common purpose would have to be agreed and this would have to be translated into measurable outcomes. These could be learning outcomes as described by Otter (1991) and discussed in Chapter 2, and as used at Alverno College where academic staff came to the ideas of TQM empirically, as described in Chapter 4. Stating the purpose in a very specific way would

also fulfil HEFCE's need, as stated in Chapter 8, for subject providers to be able "to articulate both for us and for their students, and for all other stakeholders, what they are trying to achieve for their students and what their students can reasonably be able to achieve as result of being successful graduates of this programme" (Table 8.8, pages 314-315).

TQM experience in other sectors has shown that when stakeholders are brought into the system, there are often conflicts of interest, particularly in the short term. The task of the leaders of the system is to ensure that the differences are discussed and brought out into the open because it is when they are unrecognised, or ignored, that the differences can destroy the system or subvert its aim, leading to suboptimisation. The leaders of the system have to recognise the complexities of Juran's 'triple role' and understand the needs of customers and find mutually acceptable ways of meeting them. Although the means and the results may not immediately meet every requirement, there must be an agreed plan of continuous improvement centred on the achievement of the common purpose. This is how TQM works to reconcile the needs of system stakeholders.

The BSc Optometry programme and the Department of Vision Sciences may also be seen to be mirroring, although on a much smaller scale, the issues described in Chapter 2. Barnett's description of the 'quality debate' as being less of a debate and more a babel of voices (Barnett, 1992), suggests that although people are talking and expressing their ideas, there is no higher education system, in the TQM sense, to bring them together constructively to try to understand and manage the issues, which, as in the Department of Vision Sciences, tend to focus on purpose and needs.

Thus, an analysis of the situation in higher education using 'TQM thinking' suggests the need for the development of a Deming-type system of education. However, it would require leadership to bring it about. It would also raise the question of how large the system could practically be. In theory the ideal system would be one which extended to all formalised education with, for example, schools being seen as one of the suppliers to the universities. Customer-supplier relations would ensure that there was a common understanding and agreement on the level of knowledge, skills and abilities a school leaver would have on entering the university. This would be based both on what the customer (in this case the university) required

and what the supplier (in this case the school) could reasonably be expected to achieve with a pupil or set of pupils. Such a system would help to resolve the issue flagged in the investigation of the BSc Optometry programme where academic staff believed that Year 1 students coming from school were in many ways ill-equipped for university study. (Table 7.6, pp. 250-257).

Where needs are so diverse that they cannot be met by one product or service, the system may have to be designed so that it can produce diverse products or services. This is not considered to be a problem so long as the system purpose remains constant and the purposes of the processes are agreed and communicated to all who need to know. A higher education system, for example, may have the purpose of assisting intellectual development and the advancement of knowledge. The education of undergraduates and research may be two important processes within this system. The system as a whole has to be led and managed to avoid sub-optimisation. In the existing system, the introduction of RAE may be considered as sub-optimisation due to government "tampering" with the system, i.e. it has introduced a "solution" to one problem which has had a negative impact on other parts of the system. The repercussions are being experienced at the level of the individual degree programme, as evidenced by the results of this research. The staff of the department of Vision Sciences perceived research and helping undergraduates to be incompatible processes within the existing system (Table 7.5, pp. 243-248). Students largely viewed research activity as a threat to their own success as they believed it reduced the amount of staff time available to help them (Table 6.4, pp. 200-201).

Overall, the research supports the first part of the hypothesis that TQM, properly applied, could provide "a means of addressing and reconciling the needs of higher education stakeholders", a need which is very clearly evident in the casework. The TQM definition of a 'customer' as anyone who is impacted by the product, service or process, can lead, as shown in this study, to the definition of a higher education 'cast of characters' or set of customers or stakeholders. The method used in this investigation provides a means of collecting detailed data on needs through the TQM technique known as "The Voice of the Customer". Analysis of the data provides insight into what is happening in the system and can indicate what needs to be done to bring about improvements. Once the needs are known, TQM

provides concepts and techniques which can, if there is appropriate leadership, be used to manage a system with a common purpose which can lead to the reconciliation of the needs of stakeholders.

9.2.2 The basis of a shared understanding of quality in higher education and how it can be measured, assessed and improved.

9.2.2.1 A shared understanding of quality

As described in Chapter 3, TQM has its own technical vocabulary, the adoption of which is considered by TQM theorists and practitioners to play an important role in building a quality culture. Within higher education there has been some progress towards understanding and using some common concepts. The adoption of "fitness for purpose" (used by QAA for Academic Audit), for example, as a working definition of "quality"; and also QAA's work on "graduateness" which has helped to draw the distinction between "quality" and "standards".

In the TQM vocabulary, "standard" is related to a design specification. A specification is the document that prescribes the requirements with which a product or service has to conform. When it has conformed, it is said to be built to a defined **standard. Quality** requires that a product or service meets the specification. Failure to do so automatically excludes any claim to quality. Quality, however, has another dimension which is to do with the perception of the customers. When delivered, the product or service must fulfil the expectations of the customers in terms of their total experience of it.

In the educational context, standards and quality are associated with the total student experience. In order to help a student to achieve a specified educational level (standard), defined in terms of learning outcomes (what the student can expect to know, understand and be able to do as a result of following a degree programme), the educator designs a programme (a specification). The specification, therefore, will detail the programme, course structure, curriculum and teaching strategies to be employed to enable the learning to occur. To fail to deliver a service which matches the specification equates with "low-quality". Meeting it does not alone equate with "high-quality" as quality will be judged by its customers in terms of how far it meets their needs and their expectations.

The technical vocabulary of TQM also introduces the term "grade" which can serve a further purpose in the task of breaking through the confusion about quality in higher education. Grade is a management choice of competitive strategy and the customer choice of that grade determines its success. A number of products can be designed to serve the same functional use, or purpose. For example there are many different motor cars, each appealing to customers with requirements which are over and above the basic need to be able to transport themselves from A to B. Some potential customers may be looking for status and 'luxury' features, others may be looking for speed, or ease of parking in town, or a low cost of ownership. Each of these cars is built to a specification prepared by the manufacturer who judges that the **grade** of car subsequently built (i.e. a car with a defined set of features) will appeal to enough customers to ensure a sufficient number of purchasers to keep the business going.

The product still has to conform to the published standard and achieve customer satisfaction to be judged "high-quality", but the manufacturer has made a conscious decision to sell to a particular market segment which is judged to have a certain set of requirements. Accordingly these requirements (features or characteristics) have been incorporated into the design specification. Naturally a basic threshold standard has to be met in order for the final product to serve the required purpose, i.e. to allow individuals to transport themselves on the public highways in a manner that conforms with legislation and safety requirements.

Many "grades" of car can meet the threshold standard (serve the basic purpose). If they meet the market needs, and the manufacturer correctly judges the market size, likely market share and acceptable price, they will sell sufficient numbers to stay in business. All grades of vehicle can be judged to be high-quality if they are delivered according to the specification and meet, or preferably exceed, customers' expectations. A judgement of high-quality is likely to result in continued business.

Similar concepts are already being addressed within higher education, as described in Chapter 2. The definition of a 'threshold standard' for a degree programme, (i.e. the grade below which no degree programme should fall, but above which most would be expected to rise), is already being

investigated by the QAA (Wright, 1996). The government wants to know if there is a 'gold standard' (i.e. a single, presumably "high", grade of product with similar outcomes). Once the purpose of a degree programme and the choice of 'gold' or 'threshold' has been decided, TQM concepts and methods could be adopted by providers to address specification and design issues. For example the VOTC exercises carried out for the BSc Optometry programme resulted in information about what a range of stakeholders regarded as desirable product features and what leads to dissatisfaction. Some features would be basic, or threshold, others could put a programme in the 'luxury class'. Creative thinking on the part of the providers, based on the improved knowledge of what students and other stakeholders think about existing programmes, could lead to "excitement features" as they are described in the Kano model (Chapter 3, Section 3.4.8).

TQM could, therefore, provide the terminology which could improve communication within the quality debate by ensuring that everyone had the same understanding of what was meant by terms such as 'quality' and 'standards'. The adoption of the concepts and techniques could also help to ensure that any university could be judged to provide high-quality programmes, i.e. programmes that were fit for purpose and met, or preferably, exceeded the expectations of their customers.

9.2.2.2 Quality: how it can be measured, assessed and improved

Assessment (evaluation), measurement and improvement are at the heart of TQM. As described in Chapter 3, TQM grew from the need in manufacturing to improve quality and reduce waste, a need which resulted in the development of measuring processes which enabled the control of these factors. Over time, the approaches and methods have become increasingly sophisticated and integrated into the core business. Garvin writes:

> As a concept, quality has been with us for millennia. Only recently has it emerged as a formal management function. The discipline is still evolving. In its original form, it was reactive and inspection-oriented; today, quality-related activities have broadened and are seen as essential for strategic success. Once the exclusive province of manufacturing and operations departments, quality now embraces functions as diverse as purchasing, engineering, and market research, and commands the attention of chief executive officers.

> How have these changes come about? Most modern approaches to quality have emerged gradually, arriving through steady evolution rather than dramatic breakthroughs. They are the product of series of discoveries stretching back over a century. In the United States, these discoveries can be organised into four distinct "quality eras": inspection, statistical control, quality assurance, and strategic quality management. (Garvin, 1988, p.27).

There is an interesting similarity in the history of "quality" as described by Garvin and the history of "quality" in universities, as described in earlier chapters of this thesis. In the age when manufacturing was performed by artisans and skilled craftsmen, quality control was not a significant issue and was thus largely non-existent. The age of mass production brought the concept of inspection at the end of the line to stop defective products reaching the market. It was done this way because there was no better method at the time. The cost of inspection and the obvious drawback, i.e. the end of the line was too late to rectify the error, as Garvin describes, led to the development of techniques which were more efficient and also more economical, and have resulted in the latest stage of development - TQM ("strategic quality management").

Higher education in England has now moved from an elite to a mass system. This could be considered the equivalent of manufacturing's move from the age of the master craftsperson to one of mass production. Higher education's early attempts at quality assessment and control, as described in Chapter 2, have involved what is essentially inspection at the end of the line. There is now enough experience of this in the universities for the complaints about the costs and the doubts about the efficacy of such techniques to have started, just as they did in industry.

The Vice-Chancellors have expressed a desire to be judged according to data such as Performance Indicators (PIs) which are already available in the system, rather than having to make special preparations for assessment submissions and visits by assessors. This suggests that assessment as it is currently performed is seen as an externally imposed, sporadic event rather than as an on-going internal process which is required to ensure continuous improvement. Furthermore, as described in Chapter 2, section 2.1.7.5, the Dearing Report (Dearing, 1997) has pointed out that the current system is likely to become ineffective as universities "learn" how to achieve high ratings.

The use of PIs alone is likely to have the same result. Wheeler (1993) explains that unless PIs are aligned with a well-defined and understood process, they become merely target values. He agrees with Deming's theory about the harmful effects of arbitrary targets (Deming, 1982); i.e. when people are pressured to meet a target value there are three ways they can proceed:

1. They can work to improve the system
2. They can distort the system
3. They can distort the data

Ways 2 and 3 are commonly adopted, thus diverting effort which might otherwise be used to improve the system. The designers of the system further tamper with the process to try and prevent the distortion. While this goes on, the process becomes less and less able to serve its purpose. An example of 'tampering' in higher education is RAE, as described in Chapter 2 Section 2.1.7.1. The number of publications was initially a PI, with the inevitable consequence that the method had to be changed to something more likely to indicate "quality" than quantity.

The history of TQM suggests that PIs are unlikely to be a substitute for process analysis and measurement as a means of helping to assess quality. Their use in isolation from process analysis would mean that the judgement of "quality" would be based largely on inputs (for example qualifications of staff), or outputs (for example, qualifications attained). It would tell little about the efficiency of the processes which convert the inputs to outputs.

A proper application of TQM would lead to universities being judged by an independent review/evaluation of quality performance. As defined by Juran (1988), to be 'independent' the reviewer should have no close responsibility for the adequacy of the performance. The purpose of the exercise is to provide unbiased information not only to those within the organisation but also to others who have a need to know. The performance evaluation would be based on evidence (factual, quantitative and qualitative data) and take into account:

- statement of purpose

- quality goals, aligned with the purpose
- process design in relation to the mission and goals - are the goals appropriate and adequate?
- Quality control, i.e. the process for evaluating actual performance:
    - what are the process and the results measures?
    - how does actual performance compare with goals?
    - what action is being taken on the difference?
    - what are the results:-
        - have the goals been met?
        - where and how will improvements be made?

The process and results measures which are built in at all stages of the TQM system provide evidence of achievements in relation to the organisation's stated purpose and also show what opportunities there are for improvement. As described in Chapter 3, Section 3.4.5.2, result and process measurements need to encompass effectiveness, efficiency and adaptability and the overall quality of a process is determined by these three characteristics. These are also the characteristics which interest the government, as described in Chapter 2.

Process and results measures would have to be agreed in order to understand and monitor process improvement. If collection of this data was routine practice, it would always be visible to all who needed to know, including external assessors, and could meet the government's need for accountability. Furthermore, it would counter the objection that external assessment imposes a burden of additional work. If a number of universities followed TQM practice it could also allow some comparison of measurements. Such comparisons, known as benchmarking, are found to be helpful in other sectors as a vehicle for learning and providing motivation for improvement.

On the evidence of the research into Aston University's BSc Optometry programme, one can conclude that it should be theoretically possible to establish agreed parameters, making use of VOTC techniques, to allow a 'TQM assessment' of quality to be applied to the English higher education system. One must also conclude, however, that such an assessment system would be significantly different from that which currently exists and could look much more like the assessment processes used to judge

applications for the Baldridge Award in the USA and the European Foundation for Quality Management Awards in Europe.

9.2.3 A method to bring about improvements in managerial and educational practice

9.2.3.1 Managerial practice

Chapter 2 described the universities' concern that the government may be seeking to control them through "hard managerialism" and furthermore is trying to make them adopt styles of management which are not compatible with their traditional values and culture. It also described the universities' recognition of the need to improve managerial and educational practices, taking into account the move from an élite to a mass system of higher education and the disparate aims and backgrounds of students.

As discussed in Chapter 3, a basic tenet of TQM is that all work can be described as a process, therefore improving processes is the key to business improvement. Process improvement tools alone, however, may not work in organisations that are managed through "command and control" techniques. The existence of a particular organisational culture, based on an understanding of human behaviour and psychology and a commitment to continuous learning, is an integral part of TQM.

From the 1930s and onwards there were several streams of progressive, humanistic thinking that converged and were advocated in a number of fields, and particularly in education and management. The educational theories of Bruner, Dewey, and later, Kolb, struck much the same chords as the management thinking of Herzberg, McGregor, Deming and others. All are rooted in a similar philosophical conception of the nature of human beings. All are convinced of the power of rational enquiry and the importance of the scientific method as a basis for evaluating learning. TQM development has absorbed this convergence and built on it. In the context of this thesis this convergence is important because it runs counter to the argument that TQM is appropriate only as an industrial model, and that it is inappropriate to the universities. Because of the compatibility with educational theory and because of its philosophy, TQM is highly relevant and potentially highly applicable to higher education management.

Handy (1989) adds weight to this view. He sees evidence of convergence between business practice, TQM, general management theory and the traditions and values upheld by the universities. This, in his view, is influenced by TQM and is largely due to a fundamental change in the common view of the purpose of an organisation - profit is increasingly recognised as a means and not an end in itself. Handy describes the changing bases for wealth; first from the land, then from the capacity to make things. Increasingly he believes wealth is based on knowledge and the ability to use that knowledge. Organisations recognising this and wanting to benefit from it will have to organise themselves differently. He suggests that:

> they [organisations] must look instead to some of the places where knowledge has always been key ... increasingly ... corporations will come to resemble universities. (Handy, 1989, p.113).

Although Handy explains that he exaggerates this point, and that universities clearly could also benefit from adopting some practices from business, his description of the organisation of the future has clear resonance with TQM. It may also reflect the organisational ideals of the universities, i.e. an organisation that recognises that:

> intelligent individuals can only be governed by consent, and not by command, that obedience cannot be demanded, and that a collegiate culture of colleagues and a shared understanding is the only way to make things happen. (Handy, 1989, p.113).

The investigation of the BSc Optometry programme indicated that the Department of Vision Sciences is run on collegiate lines, although as already described (Section 9.2.1.2), the collegiality does not seem to extend beyond the department.

Tribus has written;

> The philosophy of quality management is basically a humane philosophy. Unlike earlier philosophies of management, quality management postulates most people are valuable, educable, want to do a good job and are willing to work. (Tribus, 1996, p.5).

In this sense TQM corresponds with McGregor's Theory Y, as described in Chapter 4, and also with Trow's view, described in Chapter 2, that academics work through intrinsic motivation and so will not respond well to "hard managerialism" (Trow, 1994). The results reported in Chapter 7 support this view in that they suggest that reward *per se* is not of the utmost importance to departmental staff, and is not as important as the need for resources which support the activities of research and teaching. (Table 7.8, pages.269-271 and Table 7.9, pages 272-274). Staff were clearly affected by the pressures caused by shortage of resources combined with additional student numbers, but there was little evidence to suggest that this had led to any diminution in the motivation to help students. Staff spoke in the interviews, for example, of a difficulty in "matching what is needed for the students to achieve what you want for them, and the resources available to do it" (Table 7.6, pages 250-257).

9.2.3.2 Educational practice

Chapter 2 describes how the Vice-Chancellors have responded to government higher education policy by reviewing teaching and learning and their management. Seminars supported by the Vice-Chancellors have described how change might be facilitated by adopting a new model of university management, termed "new collegial", that might replace the current collegial and hierarchical models. A key feature of this new model includes the involvement of all staff and students in "the enterprise of learning" (Elton, 1994). Laurillard has said that the ideal situation is for students to take responsibility for their own learning, as part of a:

> community of scholars pursuing their own course towards knowledge and enlightenment, inspired but not directed by their teachers (Laurillard, 1993, p.2).

She also says that learning should be monitored by the "goal-action-feedback-revise action cycle" which should be evident at every point in the organisational process. These ideas are totally compatible with the TQM culture, the TQM view of a system, and with the PDSA cycle.

The ideas of Deming, Juran and others align with the cognitive field theory of learning and the ideas of educationists such as Dewey and, more recently, Kolb, who believe that knowledge and understanding arise from a holistic

view of issues, as described in Chapter 4, Section 4.5. The principles of PDSA advocated for use in a working environment are the same as Dewey's Model of Experiential Learning which was developed in a more specifically educational context but which can have more universal applicability. Kolb wrote:

> Learning is *the* major process of human adaptation. This concept of learning is considerably broader than that commonly associated with the school classroom. It occurs in all human settings, from schools to the workplace, from the research laboratory to the management board room, in personal relationships and the aisles of the local grocery. It encompasses all life stages, from childhood to adolescence, to middle and old age. ...The cyclic description of the experiential learning process is mirrored in many of the specialised models of the adaptive process. The common theme in all these models is that all forms of human adaptation approximate scientific inquiry. ... Dewey, Lewin and Piaget in one way or another seem to take the scientific method as their model for the learning process; or to put it another way, they see in the scientific method the highest philosophical and technological refinement of the basic processes of adaptation. The scientific method, thus, provides a means for describing the holistic integration of all human functions. ...
>
> When learning is conceived as a holistic adaptive process, it provides conceptual bridges across life situations such as school and work, portraying learning as a continuous, lifelong process.
>
> ... similarly, this perspective highlights the similarities among adaptive/learning activities that are commonly called specialised names - learning, creativity, problem-solving, decision-making, and scientific research. (Kolb, 1984, p.p. 32,33 and 34).

Kolb's view of learning could help to address some of the concerns of the higher education stakeholders expressed in Chapter 2 in that this approach to learning, providing a "conceptual bridge" between formal education and work, could help to reconcile the differing views on the purpose of higher education and the concerns that a university education may not be providing graduates with the generic skills and abilities needed by employers.

The views also coincide with the views of academic staff expressed through the Vice-Chancellors' seminars on teaching and learning and reported in Chapter 2. Entwistle (1993) strongly contends that the focus in the universities should move from teaching to learning and to the views of Rogers (1969) who, as cited in Chapter 2, wrote:

> the goal of education ... is the facilitation of change and learning ... the only person who is educated is the person who has learned how to learn ... a reliance on process rather than upon static knowledge is the only thing that makes any sense as a goal for education in the modern world. (p. 104).

In summary, the ideals and methods of TQM are directly compatible with the ideals and methods of progressive educationists and with views expressed by university staff about effective educational processes. To this extent, the staff views revealed by this research support the hypothesis that an understanding of TQM would provide "a method to bring about improvements in educational practice". The application of TQM to educational practice, however, would result in change which would be so fundamental that it might be thought of as a paradigm shift, incorporating improvements such as those suggested by Cleary (1996) and described in Chapter 4, i.e. the characteristics frequently retained in the current classroom environment such as:

- The teacher lectures and students listen
- Students generally work alone
- The purpose is unclear or unknown by students
- Students have a passive attitude toward learning
- Evaluation is done through the teacher's grading
- Students' participation is passive
- Students prefer taking the safest route
- Students feel disconnected from the task and its meaning
- The teacher feels responsible for the outcome

would change, assisted by the application of TQM, to incorporate:

- Lively interaction with others
- A sense of teamwork
- An understanding of purpose
- A passion for learning
- Immediate feedback
- Active participation
- Encouragement of risk taking
- A sense of "connectedness" with the task and its meaning
- A feeling of responsibility for the outcome.

The investigation into the BSc Optometry programme provides evidence of many of the characteristics contained in Cleary's first list. The programme is largely centred on lectures, the purpose of the programme is not always understood by students (Table, 6.8, pages 217-219, Features 3.01 and 8.04) and the attitude may in some respects be regarded as "passive", as demonstrated by the views about independent learning (Table 6.5, Feature 3.03, pages 205-208).

It is difficult to generalise, however, and Bigge's comment, although it is written about schools, has some resonance:

> Typically a new theory of learning is not translated into school practice until 25 to 75 years have elapsed. Then, as a new theory eventually comes to affect school policy, it usually does not displace its predecessors; it merely competes with them. Thus, as the new theories have been introduced, they have been added to the old and the educational scene has become more and more muddled. Probably most teachers, from time to time, have adopted conflicting features from a variety of learning theories without realising that they are basically contradictory in nature and cannot harmonise with each other. (Bigge, 1964, p.3).

In the section of the questionnaire provided for free form comments, several students wrote of the difficulty of generalising about lectures and lecturers as they are all so different. For example, one student wrote "Some lecturers are good. However, others offer no help so when you ask them a question, they confuse you more with the answer", and "each lecturer is so different it is hard to give an accurate answer to all the questions" (Appendix M).

In attempting to define a "good lecturer", one respondent also wrote "it is vital that lecturers are enthusiastic and knowledgeable - they should be capable of explaining a subject fully and ensure everyone understands. They should also ensure that all students have the basic knowledge of the subject that they will need in a future exam." This provides some further evidence that the prevailing "paradigm" is that of the Friere's "banking system" as described in Chapter 4, i.e. students want to be taught the things which will get them through the examination, resulting in "surface" rather than "deep" learning, as discussed in Chapter 2. This goes back to the view that students' opinions on what constitutes a "good teacher" will depend on

several factors, including their own purpose, which may be to pass an examination with the minimum of effort, and possibly on their pre-conceptions of what university life will be like, i.e. there is an expectation of a particular way of working which is centred around the lecture.

The students' views and possible pre-conceptions serve as a reminder of the importance of the holistic approach of TQM. The use of tools and techniques before fundamental principles and concepts have been thought through could serve to reinforce old paradigms rather than bring about improvements. The complexities of higher education could open up a particular set of 'elephant traps' for the would-be TQM practitioner. As a supplier, in TQM terms, the teacher may have to deliver something which is not immediately desired or valued by the customer (for example, independent learning). The student may reject the teacher's vision of needs if it goes beyond the existing university paradigm. It may be argued that new products and services have always emerged through paradigm shifts. Kano's model for "attractive quality" requires the supplier to find the products or service features for which the customer had not yet recognised a need but which, once provided, would lead to "delight". The difficulty for the teacher in shifting the paradigm is not just that of finding these features, but of then convincing the student that he or she will benefit from the additional effort it may require to bring it about. If ultimate delight is a First Class honours degree, what is the value of "joy in learning" *per se* if the end result is a Third Class Pass? TQM alone cannot resolve these professional and specialist issues, but the lesson from the fieldwork is clearly that it can serve as a diagnostic tool and can provide insight into what could be done to bring about improvements both in managerial and educational practice.

PART 2

9.3 Implications for the development of TQM theory: suppliers, processes and customers

Chapters 3 and 4 described the history of TQM. Its roots are in quality control in manufacturing but it has developed over a period of almost 50 years to become an holistic approach to quality improvement which, in theory, may be applied to any business or public service to bring about organisational transformation. Despite the theory, however, the approach is still more prevalent in the manufacturing sector (although by no means has it been universally adopted even there). There have been successful applications of TQM to the service sector, as described in Chapter 4, but there are still relatively few examples within education. The difficulties arising because of the complexities of higher education have been described in Part 1 of this chapter. Part 2 considers whether the application of TQM to a sector as complex as higher education would lead to the further development of TQM theory.

The fundamental concepts of TQM are, on the face of it, straightforward, providing a methodical approach to achieving and improving quality based on:

- defining who are the customers
- a clear statement of aim, shared with all who are part of the system
- an understanding of customer needs
- defining, analysing and improving the processes which have been put in place to achieve the purpose.

As described in Chapter 3, most TQM projects start with the question - who are the customers? The answer is comprehensive when:

a) the TQM definition is applied, i.e. "all those who are impacted by the product or service"; and
b) the concepts of internal and external customers are considered.

The customer, in the TQM sense, is not only the person who purchases or directly uses the finished product, or the service of an organisation, but includes others who are recipients, beneficiaries or "funders" of the product

or service. Juran (1992, p.54) calls the final list of customers "the cast of characters". Good working relations have to be built with all those included in the "cast". Deming suggests they should be treated as part of the system.

Chapter 3 also described how the TQM approach considers all work to be a process. The way to improve work performance, therefore, is to analyse and improve the process. This involves:

- understanding the process and its purpose
- understanding the variation within the process and its inputs
- working to reduce variation.

TQM provides a set of statistical tools and techniques to assist the analysis and understanding. Like the concept of 'customer', the concept of 'process' in a manufacturing environment is relatively easy to comprehend. This is less the case in relation to services and less so again in the case of higher education.

TQM models

Juran produced the concept of the "Triple Role" as described in Chapter 3. The Triple Role model was devised to show that within an organisation, each process has three parts:

- the input
- an activity which works on that input
- the output from the activity

At least one person is responsible for each of these process parts and every process therefore has:

- a supplier of the input
- a "processor", or worker, i.e. the person who performs the activity
- a customer, i.e. the recipient or beneficiary of the process.

Within any organisation there are likely to be very many processes that are interrelated and may be seen as chains of dependency. As work progresses through an organisation, the same person at different times in the day can be the customer of one process, the worker (processor) in another and the

supplier to yet another process. A system of determining and fulfilling the needs of those working along the chain, in changing roles, has to be in place for the system to work efficiently and effectively.

The suppliers and customers of each of the processes must work together to negotiate what each needs from the other, and how the need will be met, in order to ensure that the required output is produced satisfactorily. The customer-supplier relationships must exist throughout the chains of dependency within an organisation. The organisation can only be as strong as the weakest link in this chain. Failure to meet the needs of the internal customer will result in expensive and disruptive "rework".

The manufacturing model

The supplier to processor to customer relationship is relatively easy to understand and apply in the context of manufacturing or certain service industries such as insurance which is largely dependent on processing documents. The chain of people is often a simple model, portrayed as in Figure 9.1:

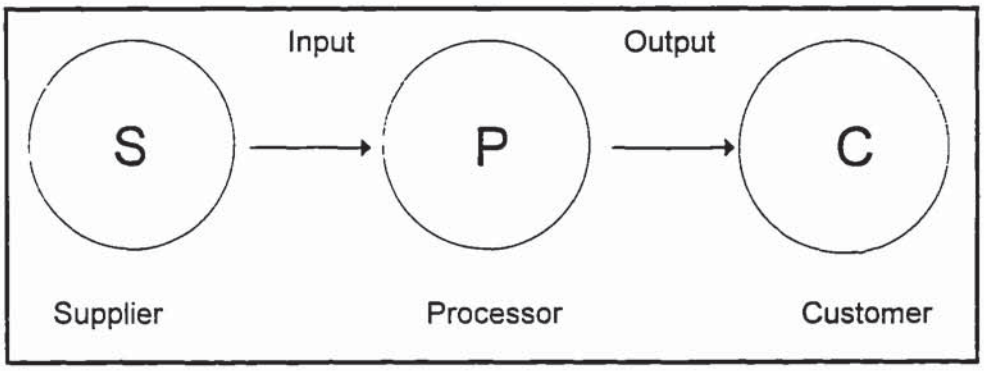

Fig. 9.1: The Manufacturing Model: the Supplier provides input to the Processor who provides output to the Customer

Figure 9.1 can represent a chain which leads to an internal, or an external customer. In the latter case, it represents the simple "consumer model". The three roles are often carried out by different people, but this does not have to be the case. Someone baking a cake for his or her own consumption, for example, could fulfil all three roles, although the supplier

might be someone different. Juran (1992) gives another example - that of a traditional craftsman - a cooper who cuts his own wood to make barrels. In this case he alone is the supplier and processor, and he may also be the customer if he makes the barrels for his own use. However, taking Juran's example further, he may also have external customers, possibly with different needs which he needs to agree with them to ensure their satisfaction. As an expert in wood and barrel-making he may sometimes have to advise clients that something they are asking for is wrong, in terms of meeting their own needs. For example they may ask for a particular design which the cooper knows will lead to water leakage. The cooper and his external clients must then re-negotiate the requirement and how it will be met. The understanding of what is required and what will be provided must be clear to both parties from the outset.

The basic service model

Juran's Triple Role model and the model shown in Figure 9.1, although simple in concept, can become more difficult to understand and apply in certain service areas. As described in Chapter 4, "intangibility" and "inseparability" are significant characteristics of services. The supplier and the customer, in Juran's terms, both take part in the "processing", for example, in the case of a meal supplied in a restaurant, the activities of the supplier (cooking, waiter service etc.) are part of the process, as are the activities of the customer (eating). The overall process is satisfying the customer's feeding requirements and may be represented as in:

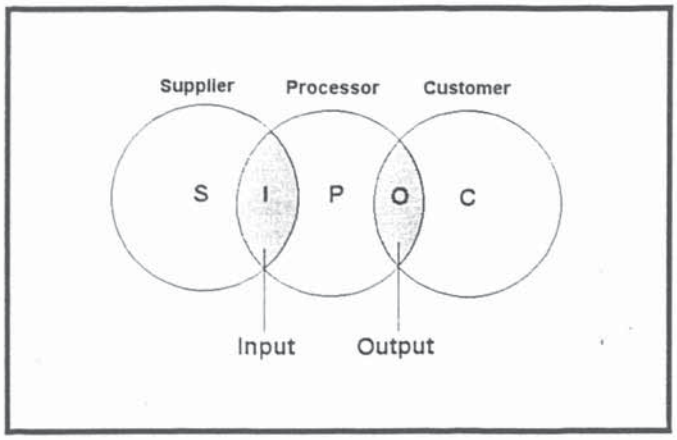

Figure 9.2: The Basic Service Model (the Supplier and the Customer both take part in the "Processing")

The professional service model

As described in Chapter 4, the traditional professional service supplier is a further subdivision of the basic service model, in which the supplier takes a greater responsibility for defining and meeting the requirements. This may especially be the case in areas such as medicine and education where, traditionally, attitudes have been that "the doctor, or teacher, knows best". The relationship has largely involved the professional telling the client what will be best for him or her, with the expectation that there will be little discussion or negotiation about what will be provided. This model may be represented as in Figure 9.3.

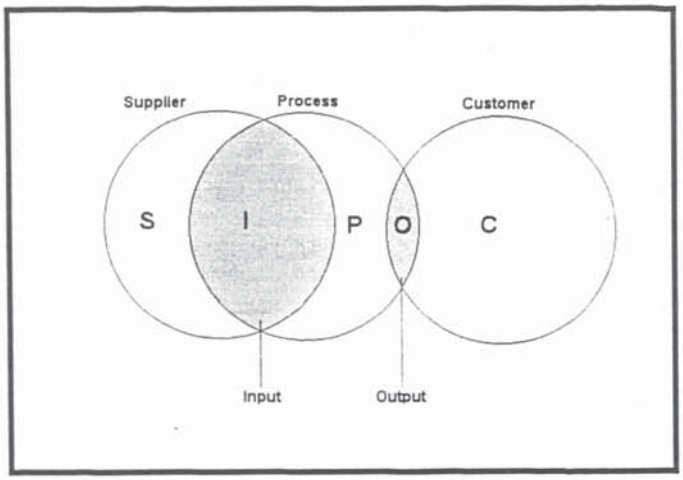

Figure 9.3: The Professional Service Model (the Supplier takes greater responsibility for defining and meeting the requirements)

A proposed education model

In TQM terms, when considering the learning process, the student may be regarded as the customer of the teacher. The teacher may be regarded as a supplier of input to the learning process which results in the output of "know how" or "know that", i.e. learning something, e.g. a skill or a fact, which transforms the nature of the student/customer. Under this model, teaching itself is an input - an event, not a process. It can be said that the output - the learning which accrues from the process, is dependent on the student's own effort as the "processor". The primary "processor" can only ever be the student, who is therefore both processor and customer.

It can thus be seen that the relative difficulty of the application of models such as the '"Triple Role" have led to a review of the extent to which the

student-teacher relationship can appropriately be viewed as that of a simple customer-supplier. In Bonstingl's vision, for example, quoted in Chapter 4, Section 4.3.1.3, he describes the situation in TQM terms so that everyone in his "Schools of Quality" is both a "customer" and a "supplier".

The fieldwork reported in this thesis illustrates a complex situation in which students and teachers in a university work together on the process. The output (learning) accrues to both (the teacher learns how to improve the input which is needed for learning), and is dependent on input from both parties. There is a customer-supplier relationship but it is an intricate one in that the student, as customer, is not a passive recipient of a product or service. The teacher (as supplier), cannot deliver unless the student (the customer) is also prepared to be a co-worker (processor).

Thus the educational variant of the model may be represented as in Figure 9.4:

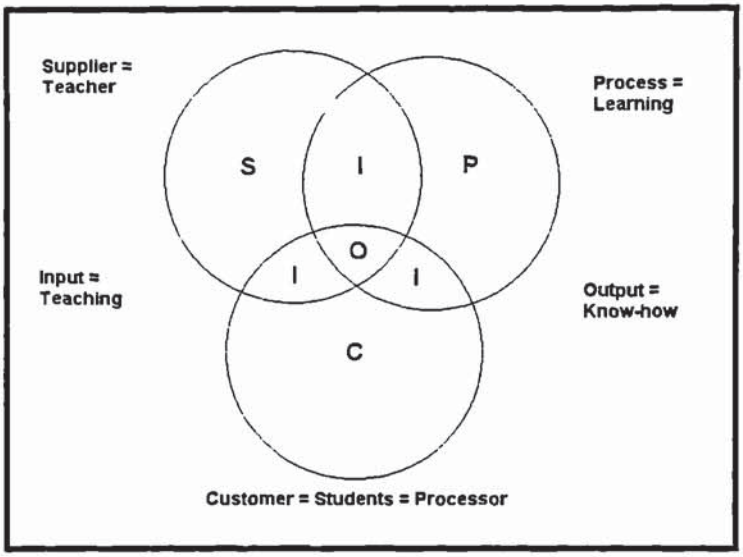

Figure 9.4: The Education Model of Customer-Supplier Relations (students, teachers and the learning process combine to produce enhanced knowledge/know-how)

This model would suggest that the technical use of the TQM term 'customer' has been misunderstood by writers such as Kohn who understand the term in its general and more limited sense of one who purchases a product or service:

> When the process of teaching children is forced onto the Procrustean bed of management theory, it is necessary to designate an educational counterpart for each role in a business setting. Because TQM is about satisfying customers, the first order of business is to figure out who should be called the *customer* of education. Some writers nominate students. Some insist that the word is best applied to parents or other adults in the community. Some say it depends on the situation.
>
> That it is so difficult to agree on the educational correlative to a company's customer - one who *purchases* a product - should alert us to the possibility that the question is misconceived. Attempting to answer it is about as sensible as trying to figure out which member of a family is most like a colonel and which it most like a lieutenant. (Kohn, 1993, p.59).

Understanding the term in the way he does, leads Kohn further to make a connection between TQM and the actual, or perceived, forces wishing to make education predominantly a tool for enhancing the economy, rather than for learning *per se*.

> To talk about learning in terms of buying and selling not only reflects a warped view of the activity but contributes to the warping ... other words borrowed from the manager's lexicon are no less disturbing than customer ... the deafening clash of metaphors gets louder when students are also referred to as *workers* (Bonstingl, 1992, Schmoker and Wilson, 1993). This locution, perhaps the most troubling of all, represents the logical conclusion of a well-established trend of seeing education as an investment. ... It is probably not a coincidence that the rationale for adopting TQM in particular is often couched not in terms of how students can be helped to become self-directed, lifelong learners, but rather in terms of improving corporate competitiveness in global markets.
>
> ... workers produce goods like automobiles and houses; they are hired to make things. The only thing students should be making is meaning. To turn the classroom into a workplace, through our practices or our parlance, is to put at risk the intellectual exploration and development that ought to be taking place there. (Kohn, 1993. p.59).

The implications of the teacher-student relationship, as depicted in Figure 9.4, have significance for education and for TQM. As a co-processor, the teacher becomes a facilitator of the learning process, i.e. he or she must ensure that the system is organised in such a way that learning is enhanced through the management of the inputs, which include his or her own

knowledge and access to learning resources such as libraries. If the student were to move to being a completely independent learner, without the assistance of a teacher, he or she would become, according to the Triple Role Model, the supplier of the inputs, the processor and the customer. Although this does not alter fundamental TQM theory, it would add a significant level of complexity. Simple examples, without deep understanding, can lead to harmful misunderstandings. Kohn is guilty of literalism, using the manufacturing model in his analysis of TQM. His conclusion of its inapplicability to the education sector is therefore suspect.

The key processes in an educational context are those that have a direct bearing on the output - the product - which is increased "know how". This raises an important feature of education that distinguishes it from other areas in the context of the application of TQM. The core process which produces the output - the student's "know how" or "know that", as it was referred to in Chapter 2, is learning. However, as described in Chapter 4, there are many theories about how learning takes place and some fundamental disagreements still exist between educational psychologists. Kolb (1984) has shown that individuals have preferences for different learning styles. With the current primitive state of knowledge about the learning process, it would be very difficult to flowchart it and apply the analytical and statistical tools of TQM.

These complexities do not, however, challenge the basic assumptions of TQM, although they do require a deeper level of understanding on the part of TQM practitioners and higher education professionals. The complexity does not reduce the potential of TQM to enhance learning. The benefits can accrue through a new way of looking at the student-teacher relationship. As already described, in TQM terms, the teacher and student become co-workers and suppliers to the process. The teacher must learn how to recognise the specific inputs that students need, taking into account what the agreed output should be and the differing student abilities and learning styles. The teacher must follow TQM practice and base actions on theory, which in turn enhances learning and brings about continuous improvement. The focus of the teacher is concentrated on how to help the student to learn which is different from how to teach the student better, or more.

9.4 Concluding remarks

Part 1 of the chapter has drawn together evidence from the research, supporting the hypothesis that:

an understanding of quality in higher education, in the TQM sense, that is, set in the context of 'fitness for purpose' and 'meeting the needs of customers', would provide:

- a means of addressing and reconciling the needs of higher education stakeholders
- the basis of a shared understanding of quality in higher education and how it can be measured, assessed and improved
- a method to bring about improvements in educational and managerial practice.

It is the assertion of this thesis that the balance of evidence suggests that properly applied TQM could be used to bring about some immediate improvements in the BSc Optometry programme, largely arising from the improved understanding of who are the customers, what are their needs and how might they be reconciled. It also offers a method of process analysis and improvement which could bring about immediate benefits to the programme and the department. The adoption of a common language of 'quality' would lead to improved communication and could help to promote a common purpose. The managerial style and culture of TQM is highly compatible with the values espoused by the department. To the extent that this programme mirrors the wider university system, the benefits could be extended to other programmes.

The real power of TQM, however, is the insight it provides into what needs to be done to bring about higher education transformation. This can be applied at any level within the system. If the kind of analysis that was performed on the BSc optometry programme was carried out more widely throughout the system, as part of an holistic TQM approach, more light would be shed on the potential for the differences within the system to be reconciled and for the system to work together to achieve optimisation.

Part 2 of this final chapter also illustrated how TQM theory is applicable to higher education, although illustrating that the widely-misunderstood concept of 'customer' is very complex when applied to education, and is certainly not represented by a simple consumer model. Process analysis and statistical control techniques are difficult to apply to the core process of learning because of the current state of knowledge of the process. The TQM approach, however, could lead to a new way of looking at the teacher-student relationship and the methods of helping students learn. Furthermore, it is suggested that in reviewing the applicability of TQM to such a complex situation as English higher education, light has been shed on the basic concepts of TQM, recognising that TQM theory itself continues to evolve.

Finally, this research has contributed a repeatable, analytical method and set of instruments which can be used, in TQM terms, to listen to, to analyse and, ultimately, to reconcile the all-important 'Voice of the Higher Education Customer' as a precursor to a system of continuous, demonstrable, quality improvement.

Part 2 of this final chapter also illustrated how TQM theory is applicable to higher education, although illustrating that the widely-misunderstood concept of 'customer' is very complex when applied to education, and is certainly not represented by a simple consumer model. Process analysis and statistical control techniques are difficult to apply to the core process of learning because of the current state of knowledge of the process. The TQM approach, however, could lead to a new way of looking at the teacher-student relationship and the methods of helping students to learn. Furthermore, it is suggested that in reviewing the applicability of TQM to such a complex situation as the English higher education system, light has been shed on the basic concepts of TQM, recognising that TQM theory itself continues to evolve.

Finally, this research has contributed a repeatable, analytical method and set of instruments which can be used, in TQM terms, to listen to, to analyse and, ultimately, to reconcile the all-important "Voice of the Higher Education Customer" as a precursor to a system of continuous, demonstrable, quality improvement.

9.4.1 Areas for further research

This methodology is offered in the hope that further research will be undertaken elsewhere in the higher education sector. Recommended areas for further work include applying the methodology and approach of this study to higher education programmes which have different aims and sets of stakeholders. An example would be a programme which is not subject to professional accreditation and where the potential employers are from a wider variety of commercial and public sectors. In theory, an arts subject or a programme in the pure sciences in a different university would provide results which would enable an extreme comparison with the outcomes of this research and might enable the further development of the methodology.

A separate, substantial, area for further research could also be a comparison of the results of this research, which is focused on the particulars of the situation in English higher education, with another national system. An interesting example would be the higher education system in the United States of America where there has already been some experimentation with TQM, as described in Chapter 4, and where the system may already be more responsive to market forces.

Another significant area for further research would be taking forward the ideas discussed in Section 9.2.2.2, concerning the development of an assessment model built according to TQM principles and practice and thus meeting the researched needs of the varied stakeholders. Such research would be particularly timely in the light of the continuing disagreement (reported in the Times Higher Education Supplement (THES), 1998) between universities and government about the means of efficiently, effectively and economically assessing the quality of higher education. The publication of this THES report has signalled that even after 10 years, the "quality debate", as described in Chapter 1, is still current. This research has indicated that TQM is very relevant to the debate and further research into TQM could be applied to the benefit of the higher education sector as a whole.

REFERENCES

Abbott, L., (1995) *Quality and competition.* New York, Columbia University Press.

Anderson, J.C., Rungtusanatham, M. and Schroeder, R.G. (1994) 'A theory of quality management underlying the Deming management method', *Academy of Management Review*, Vol.19, No.3. 472-509.

Argyris, C., (1992) *On organizational learning*, Oxford, Blackwell.

Association of Graduate Recruiters (1996) *Skills for graduates in the 21st Century*, Cambridge, Association for Graduate Recruiters.

Aston University (1996) *Departmental Profile: Vision Sciences*, Planning Office. Internal publication.

Ball, C., (1985) 'What the hell is Quality?' IN Ball, C. *Fitness for Purpose - essays in higher education*, Guildford, SRHE and NFER-Nelson, pp. 96-102.

Barnett, R., (1992) *Improving Higher Education: total quality care*, Buckingham, The Society for Research into Higher Education and Open University Press.

Barnett, R., (1994) *The limits of competence, knowledge, higher education and society*, Buckingham, The Society for Research into Higher Education and Open University Press.

Barnett, R., (1997) *Realizing the University*, London, Institute of Education, University of London.

Barton, L., (1995) *Teaching and research: dilemmas and possibilities*, IN Carrotte and Hammond (1995) op.cit. 4-11.

Becher, T., ed., (1987) *British Higher Education*, London, Allen & Unwin.

Berry, L.L., (1980) 'Services marketing is different', *Business Week*, May-June. 24-29.

Berry, L.L. and Parasuraman, A., (1991) *Marketing services: competing through quality*, Oxford, Maxwell Macmillan International.

Bigge, M.L., (1964) *Learning theories for teachers*, New York, Harper and Row.

Binney, G., (1992) *Making quality work*, London, The Economist Intelligence Unit. Special Report No.P655.

Black, T.R., (1993) *Evaluating social science research: an introduction*, London, Sage.

Bonstingl, J.J., (1992) *Schools of quality: an introduction to Total Quality Management in schools*, Alexandria (VA), Association for Supervison and Curriculum Development.

Bonstingl, J.J., (1995) 'Creating quality communities of learners through total quality management' IN *Total Quality Management: proceedings of the first world congress*, Kanji, G.K., ed., London, Chapman & Hall, pp 458 - 461.

Bossert, J.L., (1991) *Quality Function Deployment: a practitioner's approach*, Milwaukee (Wis.), ASQC Quality Press.

Bouman, M. and van der Wiele, T., (1992) 'Measuring service quality in the car service industry: building and testing an instrument', *International Journal of Service Industry Management*, vol. 3, No. 4. 4-16.

British Deming Association (1993?) *Why SPC?* Salisbury, British Deming Association.

British Deming Association (1995) *The Japanese and business transformation*, Salisbury, British Deming Association.

Brocka, B. and Brocka, M.S., (1992) *Quality management: Implementing the best ideas of the masters*, Homewood (IL.), Irwin.

Broedling, L.A., (1990) IN Varian, T. (ed.) *Beyond the TQM mystique: Real- world perspectives on total quality management*, Washington (DC), American Defence Preparedness Association with Organizational Dynamics, pp1-3.

Brower, M.J., (1994) *The paradigm shifts required to apply TQM and teams in higher education*, IN Costin, H. (1994) op.cit., pp. 485-497.

Brunel University (1992) *Considering quality: an analystical guide to the literature on quality and standards in the public services*, Centre for the Evaluation of Public Policy and Practice, Brunel University.

Bruner, J.S., (1960) *The process of education*, New York, Vintage Books.

Bruner, J.S., (1966) *Toward a theory of instruction*, New York, W.W. Norton.

Burgess, T., (1977) *Education after school*, Harmondsworth, Penguin.

Buttle, F., (1996) 'SERVQUAL: review, critique, research agenda', *European Journal of Marketing*, Vol.30, No1. 8-32.

Calek, A., (1995) 'Quality Progress: Fifth Quality in Education Listing', *Quality Progress*, September, 1995, 27.

Carrotte, P. and Hammond, M., (1995) *Learning in difficult times: Issues for teaching in higher education*, Sheffield, UCoSDA and the University of Sheffield.

Centre for Higher Education Studies (CHES) (1991) 'Identifying and developing a quality ethos for teaching in higher education', *Newsletters 1 to 3*, August, 1991-.

Centre for Higher Education Studies (CHES) (1994) *Assessment of the quality of higher education: a review and evaluation*. Report for the Higher Education Funding Councils for England and Wales by the Centre for Higher Education Studies, Institute of Education, University of London. Institute of Education, University of London, April.

Chafee, E.E., (1985) 'Three models of strategy', *Academy of Management Review*, 10. 89-98.

Chaffee, E.E. and Sherr, L.A., (1992) *Quality: transforming post-secondary education*, Washington (D.C.), The George Washington University, School of Education and Human Development. ASHE-ERIC Higher Education Report No.3.

Chorn, N.H., (1991) 'Total Quality Management: Panacea or pitfall?', *International Journal of Physical Distribution and Logistics Management*, 21 (8), 31-35.

Cicala, M.M., (1995) *An introduction to QFD: a proactive development methodology*, Northville (MI), Cicala.

Clark, P., (1994) 'A commentary [to "managerialism and the academic profession"]' IN Trow, M., *Managerialism and the academic profession: quality and control*, London, Quality Support Centre and the Open University Press. pp 45 - 51. Higher Education Report No. 2.

Clayton, M., (1993a) 'Top-down or bottom-up? Quality improvement in a university', IN Chan, J.F.L. ed., *Quality and its applications: First Newcastle International Conference on quality and its applications*, 1-3 September, Newcastle upon Tyne, pp. 309-314.

Clayton, M., (1993b) 'Towards Total Quality Management in Higher Education at Aston University - a case study', *Higher Education*, Vol. 25, No.3, April, 363-372.

Clayton, M., (1995a) 'Encouraging the kaizen approach to quality in a university', *Total Quality Management*, Vol.6, Nos 5 and 6, December. 593-601.

Clayton, M., (1995b) 'QFD - building quality into English universities' IN *Transactions from the Seventh Symposium on Quality Function Deployment*, June 11-13, 1995, Ann Arbor (MI), QFD Institute. pp.171-178.

Clayton, M., Barnes, D. and Hewitt, F., (1996) 'Using quality management to prepare UK universities for the 21st century', IN *Quality-key for the 21st century*, International Conference on quality, 1996, Yokohama, 15-18 October, pp. 665-669.

Cleary, B.A., (1996) 'Re-learning the learning process: educators must change their approach to providing education', *Quality Progress*, Vol.29. No. 4. April. 79-90.

Coate, E., (1993) 'The introduction of total quality management at Oregon State University', *Higher Education*, Vol. 25, No.3, April, 303-320.

Committee of Vice-Chancellors and Principals (CVCP), (1991) CVCP Academic Audit Unit, *Notes for the Guidance of Auditors*, CVCP, June.

Committee of Vice-Chancellors and Principals (CVCP), (1992) *Note of CVCP meeting with Secretary of State, DFE, The Rt. Hon. John Patten, MP* - 4 June 1992, CVCP Paper VC/92/61.

Committee of Vice-Chancellors and Principals (CVCP), (1994a) *Brakes applied on expansion*, CVCP News, Vol.2, issue 2. January. 1-2.

Committee of Vice-Chancellors and Principals (CVCP), (1994b) *Note of a meeting with the Secretary of State for Education and others* on 23 March 1994, CVCP, 1994. VC/94/37.

Committee of Vice-Chancellors and Principals (CVCP), (1994c) *Vice-Chancellor of London's Paper on Threshold Standards*, CVCP, N/94/131.

Committee of Vice-Chancellors and Principals (CVCP), (1994d) *CVCP/SRHE Seminar Series - changes in teaching and learning in higher educaton,* Note to Vice-Chancellors and Principals, 22 September, N/94/202.

Committee of Vice-Chancellors and Principles (CVCP) and UGC, (1986) *Performance indicators in universities: a first statement*, London, CVCP and UGC.

Competitiveness: helping business to win (1993), London, HMSO, [1993] Cm 2563.

Copley, F.B., (1923) *Frederick W. Taylor, father of Scientific Management,* New York, Harper and Row.

Costin, H., (1994) *Readings in Total Quality Management*, New York, The Dryden Press.

Council for Industry and Higher Education, (1996) *Helping students towards success at work: a declaration of intent*, London, The Council for Industry and Higher Education. Spring.

Cowles, D. and Gilbreath, G., (1993) 'Total quality management at Virginia Commonwealth University: an urban university struggles with the reality of TQM', *Higher Education,* Vol. 25, No.3, April, 281-302.

Crawford, F.W., (1991) *Total Quality Management*, London, CVCP, Occasional Paper.

Cronin, J.R. and Taylor, S., (1994) 'SERVPERF versus SERVQUAL: reconciling performance-based and perceptions-minus expectations measurement of service quality', *Journal of Marketing*, Vol.58, January, 125-31.

Crosby, P.B., (1979) *Quality is free: the art of making quality certain*, New York, New American Library.

Dale, B. and Cooper, C., (1992) *Total Quality Management and human resources: an executive guide*, Oxford, Blackwell.

Dean, J.W. and Bowen, D.E., (1994) 'Management theory and Total Quality: improving research and practice through theory development', *Academy of Management Review,* Vol.19, No. 3, 392-418.

Dearing, R., (1997) *Higher Education in the Learning Society: Report of the National Committee*, Main Report, The National Committee of Inquiry into Higher Education, London, HMSO.

Deming, W.E., (1982) *Out of the crisis: quality, productivity and competitive position,* Cambridge, Cambridge University Press.

Deming, W.E., (1993) *The new economics for industry, government, education*, Cambridge (MA), Massachusetts Institute of Technology Centre for Advanced Engineering Study.

Department for Education (DFE), (1993) *The charter for higher education: higher quality and choice*, London, HMSO.

Department for Education and Employment (DFEE), (1997) *Press Release on University for Industry*, announcing establishment of Design and Implementation Advisory Group, London, DFEE 243/97.

Department of Education and Science (DES), (1986) *Projections of demand for higher education in Great Britain, 1986 - 2000*, London, Department of Education and Science.

Department of Education and Science (DES), (1987) *Higher education: Meeting the challenge*, London, HMSO, Cm 114.

Department of Education and Science (DES), (1991a) *Higher Education: a new framework*, London, HMSO, Cm 1541.

Department of Education and Science (DES), (1991b) *Speech given by the Secretary of State for Education and Science* at the Annual Conference of the Committee of the Vice-Chancellors and Principals at Warwick University, September, 1991, Department of Education and Science News, 318/91, 25 September.

Department of Education and Science (DES), (1992) 'John Patten launches new Higher Education Funding Council for England', *Department of Education and Science News*, 163/92, 2 June.

Department of Trade and Industry (1992) *The quality gurus: what can they do for your company?* London, Department of Trade and Industry.

de Vaus, D.A., (1986) *Surveys in social research*, Hemel Hempstead, George Allen and Unwin (Contemporary Social Research Series, 11).

Dill, D.D., (1992) 'Quality by design: toward a framework for academic quality management' (draft article prepared for *Higher Education: Handbook for Theory and Research,* 5/5/92).

Doherty, G.D., (1993) 'Towards total quality management in higher education: a case study of the University of Wolverhampton', *Higher Education*, Vol. 25, No.3, April, 303-320.

Drummond, H., (1992) *The quality movement: what total quality management is really all about!* London, Kogan Page.

Easterby-Smith, M., Thorpe, R. and Lowe, A., (1991) *Management research: an introduction*, London, Sage.

Education Reform Act (1988) *Education Reform Act 1988*, Elizabeth 11, 1988, Chapter 40, London, HMSO.

Elton, L., (1994) *Management of Teaching and Learning: Towards change in universities*, Report of a seminar held on 24 March 1994, London, CVCP and SRHE.

Entwistle, N., (1992) *The impact of teaching on learning outcomes in higher education,* Sheffield, CVCP/USDU.

Entwistle, N., (1993) *Teaching and the quality of learning: what can research and developement offer to policy and practice in higher education?* Report of a seminar held on 25 November, 1993, London, CVCP and SRHE.

Entwistle, N., and Hounsell, D., eds. (1975) 'How students learn', Lancaster, University of Lancaster, *Readings in Higher Education,* 1.

Ernst & Young and American Quality Foundation, (1992) *International Quality Study: Top line findings*, New York, Ernst &Young and American Quality Foundation.

Feigenbaum, A.V., (1951) *Quality control: Principles, practice and administration,* New York, McGraw-Hill.

Foley, P., (1995) 'The changing emphasis of higher education: the challenge to maintain teaching and learning standards and staff motivation' IN Carrotte and Hammond (1995), op.cit., pp12- 24.

Freeman, M.G., (1996) 'Don't throw Scientific Management out with the bathwater', *Quality Progress*, Vol.29, No.4, April, 61-69.

Freire, P., (1974) *Pedagogy of the oppressed*, New York, Continuum.

Fry, H., (1995) 'Quality issues in higher education', IN *Viewpoint*, No.1 June 1995 1-4.

Further and Higher Education Act 1992, (1992) IN *Halsbury's Statutes of England and Wales*, 4th ed., London, Butterworths, 1994.

Garvin, D., (1994) *History and evolution of the quality movement,* IN Costin (1994) op.cit., pp. 27-43.

Giddens, A., (1986) *Central problems in social theory*, Los Angeles, University of California Press.

Gilmore, H.L., (1974) 'Product conformance cost', *Quality Progress*, 7(5), 16-19.

Green, D., ed., (1994) *What is quality in higher education?* Buckingham, Society for Research into Higher Education and Open University Press.

Green, R.T., (1993) *Global quality*, Business One Irwin, Homewood (Ill).

Gronroos, C., (1984) 'A service quality model and its marketing implications', *European Journal of Marketing*, 18(4), 36-44.

The *Guardian* (1997) 'Expansion still a flight of fancy', 23 September, i.

Hansen, W.L., (1993) 'Bringing total quality improvement into the college classroom', *Higher Education,* Vol. 25, No.3, April, 259-280.

Harvey, L., (1995) 'Beyond TQM', *Quality in Higher Education*, Vol. 1. No. 2. 123-46.

Harvey, L., Burrows, A. and Green, D., (1992a) *Criteria of Quality*, Birmingham, QHE.

Harvey, L., Burrows, A. and Green, D., (1992b), *Total student experience; a first report of the QHE national survey of staff and students' views of the important criteria for assessing the quality of higher education*, Birmingham, QHE.

Harvey, L. and Green, D., (1993) 'Defining quality', *Assessment and evaluation in higher education*, 18(1), 9-34.

Harvey, L. with Green, D., (1994) *Employer satisfaction,* Birmingham, QHE.

Harvey, L., Mason, S. with Ward, R., (1995) *The role of professional bodies in higher education monitoring*, Birmingham, QHE.

Harvey, L., Moon, S. and Geall, V., (1997) *Graduates' work: organisational change and students' attributes,* Birmingham, Centre for Research into Quality.

Harvey, L. and Knight, P.T., (1996) *Transforming higher education*, Buckingham, The Society for Research into higher education and Open University Press.

Haywood-Farmer. J., (1987) 'A conceptual model of service quality', *International Journal of Operations and Production Management*, Vol.8, No.6. 19-29.

Hayes, B.E., (1992) *Measuring customer satisfaction: development and use of questionnaires*, Milwaukee (Wis), ASQC Quality Press.

Herzberg, F., Mausman, B. and Snyderman, B., (1959) *The motivation to work*, 2nd ed., New York, John Wiley & Sons.

Herzberg, F., (1968) *Work and the nature of man,* London, Staples Press.

Hubbard, D.L., (1993) *Continuous quality improvement: making the transition to education*, Maryville (MO), Prescott Publishing.

Higher Education Funding Council (England) (HEFCE), (1992) *Quality Assessment, consultation document,* October.

Higher Education Funding Council (England) (HEFCE), (1993) *Assessment of the quality of education,* Circular 3/93.

Higher Education Funding Council (England) (HEFCE), (1994) *Recurrent grant for the Academic Year 1994-95*, March, Circular 7/94.

Higher Education Funding Council (England) (HEFCE), (1995a) *A guide to funding Higher Education in England: How the HEFCE allocates its funds*, Ref. M 13/95.

Higher Education Funding Council (England) (HEFCE), (1995b) Quality Assessment Division, *Assessors' Handbook*, April 1995-September 1996.

Higher Education Funding Council (England) (HEFCE), (1997a) *The impact of the 1992 Research Assessment Exercise on higher education institutions in England,* May 1997, Ref M 6/97.

Higher Education Funding Council (England) (HEFCE), (1997b) *Conduct of the exercise: RAE Manager's report,* (1996 Research Assessment Exercise), May, HEFCE RAE 96 1/97.

Higher Education Quality Council (HEQC), (1994a) *The work of the Higher Education Quality Council*, HEQC, PUB 100 7/94.

Higher Education Quality Council (HEQC), (1994b) *Learning from audit*, HEQC, DQE207 9/94.

Higher Education Quality Council (HEQC), (1994c) *Guidelines on quality assurance,* London, Higher Education Quality Council.

Higher Education Quality Council (HEQC), (1996) *Threshold and other academic standards*, The views of four different subject groups, HEQC.

Hill, F.M., (1995) 'Managing service quality in higher education: the role of the student as primary consumer', *Quality Assurance in Education*, Vol.3. No.3. 10-21.

Hill, S., (1991) 'Why Quality Circles failed but Total Quality Management might succeed', *British Journal of Industrial Relations*, 29, 541-568.

Hill, S., (1995) *From Quality Circles to Total Quality Management*, IN Wilkinson, A. and Willmott, H., (1995) op cit., pp. 33-53.

Hubbard, D.L., ed., (1993) *Continuous quality improvement: making the transition to education*, Maryville (MO), Prescott Publishing.

'Identifying and developing a quality ethos for teaching in higher education', (1993) Centre for Higher Education Studies, Institute of Education, University of London, *Newsletter* 3, April.

Imai, M., (1986) *Kaizen: the key to Japan's competitive success*, London, McGraw-Hill.

Ishikawa, K., (1982) *Guide to quality control*, White Plains, New York, Quality Resources.

Ishikawa, K., (1985) *What is total quality control? The Japanese way*, Englewood Cliffs, N.J., Prentic-Hall.

Joint Performance Indicators Working Group, (1994) *Consultative Report,* Joint Performance Indicators Working Group/HEFCE.

Joint Planning Group for Quality Assurance in Higher Education (1996), *Final Report*, 17 December.

Jordan, B., (1989) *The common good*, Oxford, Blackwell.

Juran, J.M., (1964) *Managerial breakthrough: a new concept of the manager's job*, London, McGraw-Hill.

Juran, J.M. (1973) 'The Taylor system and quality control', *Quality Progress*, May-December.

Juran, J.M., (1988) *Juran on planning for quality*, London, Collier Macmillan.

Juran, J.M., (1989) *Juran on leadership for quality: an executive handbook*, London, Collier Macmillan.

Juran, J.M., (1992) *Juran on quality by design: the new steps for planning into goods and services*, New York, the Free Press, 1992.

Juran, J. M. and Gryna, F.M., eds., (1988) *Juran's quality control handbook,* 4th ed., New York, McGraw-Hill.

Juran, J.M. and Gryna, F.M., (1993) *Quality planning and analysis: from product development through use*, 3rd ed., London, McGraw-Hill.

Kanji, G.K., ed., (1995) *Total Quality Management*, Vol.6. Nos. 5 and 6, December, Special issue: 'Total Quality in Education'.

Kano, N., 'Upsizing the organisation by attractive quality creation', (1995) IN *Total Quality Management: proceedings of the first world congress,* Kanji, G.K., ed., London, Chapman & Hall, pp. 60 - 72.

Kano, N., Seraku, N. and Tsuji, S., (1984) *Attractive qualty and must-be quality*, Summary of paper presented at Nippon QC Gakka: 12th Annual meeting in 1982, 53-60.

Kelly, S.W., Donnelly, J.H. and Skinner, S.J., (1990), 'Customer participation in service production and delivery', *Journal of Retailing*, Vol.66 No.3, 315-35.

Khun, T.S., (1962) *The structure of scientific revolutions*, Chicago, University of Chicago Press.

King, B., (1989) *Better designs in half the time: implementing QFD Quality Function Deployment in America*, 3rd ed., Methuen (MA), GOAL/QPC.

Kohn, A., (1992) *No contest: the case against competition*, Rev. ed., London, Houghton Mifflin.

Kohn, A., (1993) 'Turning learning into a business: concerns about total quality', *Educational Leadership*, September, 58-61.

Kolb, D.A., (1984) *Experiential learning: experience as the source of learning and development*, Englewood Cliffs (NJ), Prentice-Hall.

Krueger, R.A., (1994) *Focus Groups: a practical guide for applied research,* 2nd ed., London, Sage.

Laurillard, D., (1993) *Rethinking university teaching: a framework for the effective use of educational technology*, London, Routledge.

Langford, D.P., and Cleary, B.A., (1995) *Orchestrating learning with quality*, Milwaukee (Wis), ASQC Quality Press.

Lawler, E.E.111, Mohrman, S.A. and Ledford, G.E., (1992) *Employee involvement and total quality management*, San Francisco, Jossey Bass.

Leverhulme Studies of Higher Education (1983) *Programme of Study in Higher Education*, Guildford, Society for Research into Higher Education and NFER-Nelson.

Levitt, T., (1972) 'Production-line approach to service', *Harvard Business Review*, 50(5), 41-52.

Lewin, K., (1946) 'Action research and minority problems', *Journal of social issues*, Vol.2. 4-10.

Lewis, B.R., (1993) 'Service quality measurement', *Marketing Intelligence and Planning*, Vol.11, No. 4, 4-12.

Lewis, C.I., (1929) *Mind and world order*, New York, Scribner.

McEachern, W. and O'Brien, K., (1993) *Constancy of purpose; ability-based education and assessment-as-learning,* IN Hubbard, D.L. (1993) op.cit., pp. 454-473.

McGregor, D., (1960) *The human side of enterprise,* New York, McGraw-Hill

McNiff, J., (1988) *Action research; principles and practice*, London, Routledge.

Maki, N., Kazushi, N. and Akao, Y., 'QFD Analysis of customer satisfaction in university education' IN *Quality-key for the 21st century*, International Conference on quality, 1966, Yokohama, 15-18 October, pp. 387-390.

Martin and Voorhees Associates, (1978) *Social research techniques: a reference manual,* Department of Transport, London, HMSO, LTRI Working Paper 5.

Maslow, A.H., (1954) *Motivation and personality*, New York, Harper & Bros.

Mazur, G., (1993) *QFD for service industries: from Voice of the Customer to Task deployment*, The fifth symposium on Quality Function Deployment, Novi (MI), June, 231-255.

Mazur, J., (1990) *Learning and behaviour*, 2nd ed., Englewood Cliffs (NJ), Prentice-Hall.

Mehrez, A., Weinroth, G.J. and Israeli, A., (1997) 'Implementing quality one class at a time', *Quality Progress*, May, 1997, 93-96.

Miles, M.B. and Huberman, A.M., (1984) *Qualitative data analysis: a sourcebook of new methods*, Newbury Park (Ca), Sage.

Miles, M.B. and Huberman, A.M., (1990) 'Reflections on the uses of qualitative enquiry' IN Eisner, E.W. and Peshkin, A., eds., *Qualitative inquiry in education: the continuing debate*, pp. 339-357.

Mills, P.K., (1986) *Managing service industries: organisational practices in a postindustrial economy*, Cambridge (MA), Ballinger.

Moodie, M., (1986) 'Fit for what?', IN Moodie, G. C., ed., *Standards and criteria in higher education*, Guildford, SRHE and NFER-Nelson, pp. 1-8.

Morgan, G., (1979) 'Response to Mintzberg', *Administrative Science Quarterly*, 24 (1), 137-9.

Morgan, C. and Murgatroyd, S., (1994), *Total Quality Management in the Public Sector: an international perspective.* Buckingham, Open University Press.

Moser, C.A. and Kalton, G., (1971) *Survey methods in social investigation,* 2nd ed., London, Heinemann Educational.

Nachmias-Frankfort, C. and Nachmias, D., (1996) *Research methods in the social sciences*, 5th ed., London, Arnold.

National Commisson on Education (1993) *Learning to succeed,* London, Heinemann.

Neave, H.R., (1990) *The Deming dimension,* Knoxville, Tennessee, SPC.

Oakland, J., (1989) *Total Quality Management*, London, Heinemann.

Osborne, D. and Gaebler, T., (1992) *Reinventing government,* Reading (MA), William Patrick.

Otter, S., (1991) *What can graduates do? A consultative document,* Leicester, National Institute of Adult Continuing Education on behalf of UDACE.

Otter. S., (1992) *Learning outcomes in higher education,* London, HMSO. A development project report of the Unit for the Development of Adult Continuing Education.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L., (1985) 'A conceptual model of service quality and its implications for future research', *Journal of Marketing*, 49 (Fall), 41-50.

Pascale, R.T. and Athos, A.G., (1982) *The art of Japanese management,* Harmondsworth, Penguin.

Pennington, L. and Sweeney, G., (1995) 'Voice of the Customer: linking your system of measures to customer needs', IN *Transactions from the Seventh Symposium on Quality Function Deployment*, June 11-13, 1995, Ann Arbor (MI), QFD Institute, June, 56-574.

Peters, T.J., and Waterman, R.H., (1982) *In search of excellence: lessons from America's best-run companies*, New York, Harper and Row.

Popper, K., (1959) *The logic of scientific discovery*, London, Hutchinson.

Price, F., (1989) 'Out of bedlam: Management by quality leadership', *Management Decision*, 27, 15-21.

Process Management International, (1996) *Fundamentals of process improvement, C*oventry, Process Management International.

Quicke, J., (1988) 'The "New Right" and education', *British Journal of Educational Studies,* Vol.30, No.1, 5-20.

Ramsden, P. and Moses, I., (1992) 'Associations between research and teaching in Australian higher education', *Higher Education,* 23, 273-295.

Ramsay, H., (1985) *What is participation for?* IN Knights, D., Wllmott, H. and Collinson, D., eds., *Job re-design,* Aldershot, Gower.

Rathmell, J.M., (1976) 'What is meant by services?', *Journal of Marketing,* Vol. 30, October, 32-36.

Riordan, T., (1993) *Beyond the debate: The nature of teaching,* Milwaukee (Wis), Alverno productions.

Reeves, C.A. and Bednor, D.A., (1994) 'Defining quality: Alternatives and implications', *Academy of Management Review,* Vol.19 No. 3, 419-445.

Reynolds, P.A., (1986) *Academic standards in universities,* London, CVCP.

Robertshaw, W.G., (1995) 'Using an objective sales point measure to incorporate elements of the Kano model into QFD', IN *Transactions from the Seventh Symposium on Quality Function Deployment,* June 11-13, 1995, Ann Arbor (MI), QFD Institute, June, 201-216.

Robbins, L., (1963) *Higher Education: the Report of the Committee under the Chairmanship of Lord Robbins,* London, HMSO, Cmnd 2154.

Rocklin, T., (1987) 'Defining learning: two classroom examples', *Teaching of Psychology,* 14, 228-229.

Rogers, C., (1969) *Freedom to learn,* Columbus (Ohio), Merrill.

Sallis, E., (1993) *Total Quality Management in education,* London, Kogan Page.

Salter, B. and Tapper, T., (1994) *The state and higher education,* Ilford, The Woburn Press.

Schendler, B.R., (1994) 'Japan. Is it changing for good?', *Fortune,* 13 June, 20-25.

Sekaran, U., (1992) *Research methods for business: a skills building approach,* 2nd ed., New York, John Wiley.

Senge, P.M., (1990) *The Fifth Discipline: the art and practice of the learning organisation,* London, Random House.

Senge, P. M., (1994) *The fifth discipline fieldbook,* New York, Doubleday.

Seymour, D., (1991) *TQM on campus: what the pioneers are finding*, AAHE Bulletin 44 (3): 10-13, 18.

Sharples, K.A., Slusher, M. and Swaim, M., (1996) *Quality Progress*, May, 75-78.

Shewhart, W.A., (1931) *Economic control of quality manufactured product,* New York, van Nostrand; reprinted by the American Society for Quality Control (1980).

Shewhart, W.A., (1939) *Statistical method from the viewpoint of quality control,* Washington (DC), Graduate School of the Department of Agriculture.

Slater, R.H., (1991) *Integrated process management: A quality model*, Quality Progress, June, 53-57.

Slavin, R.E., *Educational psychology: theory and practice*, 5th ed., Boston, Alyn and Bacon.

Smircich, L. and Stubbart, C., (1985) 'Strategic management in an enacted world', *Academy of Management Review*, 10, 724-736.

Spanbauer, S.J., (1992) *A quality system for education: using quality and productivity techniques to save our schools*, Milwaukee (Wis), ASQC Quality Press.

Spencer, B.A., (1994) 'Models of organization and total quality management: a comparison and critical evaluation', *Academy of Management Review,* Vol.19, No.3, 446-471.

Stevenson, R.J. and Palmer, J., (1994) *Learning principles and practice*, London, Cassell.

Stewart, R., (1992) 'Management in the public and private sectors', *Higher Education Quarterly*, Vol.46, No.2, 157-65.

Swiss, J.E., (1992) 'Adapting total quality management (TQM) to government', *Public Administration Review,* Vol.52, No.4, 356-62.

Tannock, J.D. and Burge, S.E., (1992) 'A new approach to quality assurance in higher education', *Higher Education Quarterly,* Vol.4, No. 1.

Taylor, F.W., (1911) *The principles of scientific management,* New York, Harper and Brothers.

Times Higher Education Supplement (THES), (1997) Leader, June 20, 9.

Times Higher Education Supplement (THES), (1997b) 'Roberts departs as Dearing delivers', July 18, 6.

Times Higher Education Supplement (THES), (1997c) 'Assessments "to go"', September 12, 3.

Times Higher Education Supplement (THES), (1997d) 'Students as customers will demand value for cash', September 26, 17.

Times Higher Education Supplement (THES), 1998 'Split on quality blueprint', June 5,1.

Thomas, P.R. and Bain, J.D., (1984) 'Contextual dependence of learning approaches; the effects of assessments', *Human Learning*, 3, 227-240.

Torres, E., (1996) Elaine Torres, Partners in Profound Knowledge, 11551 Forest Central Drive, Suite 129A, (TX) Dallas. Private Communication between the author and M.Tribus. IN Tribus, M., and Langford, D. op.cit., (pages not numbered).

Tribus, M., (1990) 'The application of quality management principles in education, at Mt. Edgecumbe High School, Sitka, Alaska', Reprinted IN Tribus, M. and Langford, D., (1996) *Myron Tribus education papers,* op.cit., (pages not numbered).

Tribus, M., (1993) '*The germ theory of management*', Salisbury, British Deming Asociation.

Tribus, M., (1996a) *The transformation of American education to a system for continuouly improved learning,* IN Tribus, M. and Langford, D. (1996) op cit., (pages not numbered).

Tribus, M., (1996b) *TQM in education: the theory and how to put it to work* IN Tribus, M. and Langford, D. (1969b) op.cit., (pages not numbered).

Tribus, M. and Langford, D., (1996) *Myron Tribus education papers*, Salisbury, British Deming Association.

Trow, M., (1994) *Managerialism and the academic profession: quality and control*, London, Quality Support Centre and the Open University Press. Higher Education Report No. 2.

Tuckman, A., (1995) IN Wilkinson, A and Willmott, H., (1995) op cit., pp. 54-81.

Tveite, M.D., (1995) *The Deming philosophy: new ways to think about the world,* Salisbury, British Deming Association.

University League Tables (1992 and 1994), The *Times*, 12 October, 1992 and 27 May, 1994.

Ward, S., (1974) 'Consumer socialisation', *Journal of Consumer Research,* Vol. 1, September, 1-14.

Weick, K.E., (1979) *The social psychology of organizing,* Reading (MA), Addison-Wesley.

Weir, D., (1992) *Organizations in the year 2000: strategies, skill, pace and timing,* Paper delivered to the British Academy of Management 6th Annual Conference, University of Bradford, September.

Westerheijden, D., (1991) *Promises, problems and pitfalls of peer review: the use of peer review in external quality assessment in higher education,* Paper to the Third International Seminar on Assessing Quality in Higher Education, Bath, July, (Proceedings) 16-19.

Wheeler, D., (1993) *Understanding variation: the key to managing chaos,* Knoxville, Tennessee, SPC Press.

Wilkinson, A. and Wilmott, H., eds., (1995) *Making quality critical: new perspectives on organizational change,* London, Routledge.

Williams, G., (1990) 'Quality and resource allocation', IN Loder, C. ed., *Quality Assurance and Accountability in Higher education*, London, Kogan Page, pp. 72-82.

Williams, G., (1992) *Changing patterns of finance in higher education,* Buckingham, Open University Press.

Williams, G., (1993) 'Total Quality Management in higher education: panacea or placebo?', *Higher Education; the international journal of higher education and educational planning*, Vol.25, No. 3, April, 229-237.

Wright, P., (1996) *What are graduates? Clarifying the attributes of 'graduateness'; a paper to stimulate discussion,* HEQC.

Young, D., (1990) 'The Academic Audit Unit, an organisation for university quality management' IN Goedegebuure, L.C.J., Maassen,

P., and Westerheijden, D.F., eds., *Peer Review and Performance Indicators*, Utrecht, Lemma.

Youssef, F., Nel, D. and Bovaird, T., (1995) 'Service quality in NHS hospitals', *Journal of Management in Medicine*, Vol.9, No.1, 66-73.

Zeithaml, V.A., Parasuramon, A., and Berry, L.L., (1990) *Delivering quality service: balancing customer perceptions and expectations*, London, Collier Macmillan.