

# A revolutionary style at third level education towards TQM

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## Abstract

Recently, the interest of applying the concept of TQM in third level institutions has increased rapidly. In tandem with this, there have been several mechanisms set in train for monitoring and regularly reviewing the standard and quality of all aspects of university education [Eng. Sci. Educ. J. 5 (3) (1996)]. This paper reviews the available quality initiatives in third-level educational systems and discusses the implication of a relevant model for the internal TQM. Also, this paper considers forming a quality framework based on the relation between the customers (i.e. students, second-level educational system, parents and employers/society) and various education activities in third-level institution.

The materials presented in this paper could be of crucial benefit to those with limited knowledge of applying the process of TQM in third-level education. © 2001 Elsevier Science B.V. All rights reserved.

*Keywords:* TQM; Education

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## 1. Introduction

In recent years, there has been a manufacturing quality revolution, which began with Taylor around 1920 and division of labour. Then Schewhart developed the control chart. They were the dominant manufacturing force in the world and concentrated on the “product out” rather than the “market in” situation. The Japanese then embraced their ideas and ironically with Deming and Juran (both Americans) and home grown talent (Ishikawa and Taguchi et al.) developed today’s quality concept which are based on total quality management (TQM), and “market-in”. Due to these concepts the manufacturing industry has gone from strength to strength.

TQM is a philosophy of never-ending improvement achievable only by people. This has grown from the view that quality cannot be “inspected in” to a product or service. The essential feature of TQM is the improvement of quality, which depends on the attitude of the workforce. In this context, the quality improvement in any organisation must be the responsibility of every member of the organisation. Thus, TQM is inseparable from general management practice.

Manufacturing process can be the act of providing something, which somebody wants. Therefore, the educational system is not different from a manufacturing process. However, this system is at present falling behind the manufacturing system with regard to quality within its industry.

Thus, in order to progress, it is felt that the educational system should adapt the concept of TQM, similar to that used by the manufacturing system, to respond to the new development and indeed to survive in the modern market place [1].

The old style education systems were evolved along three direct traditional lines: Humboltian, Napoleonic and Anglo-Saxon. These traditions are centuries old [2]. The difference between them lies in where the power resides. In the Humboltian tradition, found in most of Europe, the faculty is very strong, the central administration is weak and there is little government interference. In the Napoleonic tradition, found in France, Poland and Russia, the government has powerful influence and the institutions and faculties are subservient to it. In the Anglo-Saxon tradition, found in the UK and the former British Colonies, the University’s Central Administration has responsibility for the institution, it has control over the faculties and operates quite independently of the government. In the latter half of the 20th century, new institutions of higher education have been developed. These had a less scholarly focus and were directed towards the employment market. These institutions have developed within the academic tradition of the nation. Therefore, the power repository in these new institutions is similar to that of the old traditional universities.

The third-level educational system is subjected to many changes resulting from the technological, economical and political changes around the globe. Harvey [3], has commented on the different meaning of the word ‘quality’ which can convey high standards or fitness for purpose or value for money. He recommended quality needs to be viewed as

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‘transformative’ rather than a perfection process, i.e. essentially as a transformation of the life-experience of the students, by enhancing or empowering them. Harvey viewed the ultimate quality goal, which should be pursued by higher education as ‘the need to invest in continuous improvement of quality of student experience, through staff development, innovation in teaching and learning, research and scholarship’. He also argued that what was needed was a shift in emphasis from the external scrutiny of quality to the setting up of internal quality mechanisms within each educational institution. Tannock [4], pointed out that ‘engineering and other professional subject disciplines had external scrutiny of syllabus material and course accreditation process’. In USA higher education sector, Marchese [5] noted that ‘the number of individuals devoted to the topic TQM runs well up into the 100, the number of institution trying TQM in particular offices might be near 100, the number of those that have committed to TQM on an institution-wide basis stands at two dozen, of which the number with deeper experience constitutes a mere handful’. In the UK, using a study of total internal customer satisfaction, Chaston [6] has demonstrated that British universities are not yet ready to adopt TQM as a unifying managerial principle and institutional philosophy.

This paper discusses an internal quality mechanism as an attempt to implant TQM in third-level educational institutions.

## 2. Third-level education

Our society has many groups with legitimate interest in third-level education. Thus, the quality of third-level educational system has a considerable influence on the economic wellbeing of a society. Each group in a society sees the quality for third-level educational institutions from its own viewpoint. However, a hard view would see the role of third-level education as:

- Development of the individual for his own and for the society’s betterment.
- Production of highly qualified manpower for the economy.
- A training centre for research careers.
- A means of extending life chances.
- An efficient provision of well managed teaching.

Accordingly, the ability of a country to attract the industrial and commercial investment is dependent on many factors [2]; the availability of an educated workforce is among them. Therefore, the level of investment and the range of activities, which international organisations bring to a country, are very dependent on the number and quality of the country’s graduates. Countries with weak third-level educational systems attract labour-intensive, low-knowledge activities whereas those with strong third-level educational systems attract high-value, knowledge-based industries. So, the relationship between the third-level

educational system/institution and society can be defined based on the customer-satisfaction pattern. The customer in this pattern can be students, parent of the students, second-level educational system and the national/international industrial, commercial organisations/employers and society in general. These customers need third-level educational system/institutions to provide continuous quality improvement in educational standards in different disciplines to satisfy the market demands. This can be expressed as a closed loop as shown in Fig. 1, which suggests that the higher education system forecasts/evaluates the needs of the customer and accordingly provide what is required to fulfil them. This can be achieved through appropriate courses and methods of delivery with a long life learning process for lecturers/staff members and students. In this respect, the third-level educational system plays an effective role for knowledge transfer in a society.

## 3. Review of quality initiatives at third-level education

Recently, quality initiatives imposed by funding bodies have been established. These initiatives have given rise to much debate and publication in the third-level literature.

In the UK, as a result of the White Paper HE new framework in 1991 and the subsequent HE Act 1992, the higher education quality council (HEQC) has been established to formalise and operate a process of quality assessment in HE. Opinions were varied as to the overall success and a very good and balanced analysis is reported in Refs. [7–9]. One of these interesting approaches was adopted and implemented by the Department of Mechanical Engineering, University of Bristol [10]. This approach was modelled based on ISO 9000 system, common in manufacturing and service industries.

The Scottish Quality Management System, now widely used throughout Scotland, brings together the main quality systems and guidelines used in Scottish education and training [11]. The Dearing Report on HE [12] recognises that each institution is responsible for its own standards. However, it then recommends a national code of practice which all HE institutions should be required to adopt. By 1997 more European countries had institutionalised National Organisations addressing quality in HE (Vroeijnstiyn [13] and Birtwhistle [14] discussed the philosophy in Higher Education Review more than the performance). France has had, since 1985, an Independent Accreditation Body, reporting to the President’s Office of the Republic. This includes a focus on quality of teaching, learning, research, management, administration and social programs [15].

Netherlands and Denmark established a National Centre of Evaluation and Quality Assurance [16]. This focused on teaching, learning — including peer review and user surveys. In the USA, there can be found a number of approaches to quality assurance (QA), quality control (QC), quality

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