

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

186,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



Implementing Quality Management Systems in Higher Education Institutions

Maria J. Rosa^{1,2}, Cláudia S. Sarrico^{1,3} and Alberto Amaral^{1,4}

¹CIPES – Centre for Research in Higher Education Policies,

²DEGEI, Universidade de Aveiro,

³ISEG, Universidade Técnica de Lisboa,

⁴A3ES – Agência para a Avaliação e Acreditação do Ensino Superior,
Portugal

1. Introduction

In the last decades, several factors have contributed to raising public concern over higher education institutions' quality, leading to the emergence of quality measurement and improvement devices such as performance indicators, accreditation, programme and institutional assessment and quality audits, and there have been attempts to import models from the private sector into higher education systems and institutions (Sarrico, Rosa, Teixeira and Cardoso, 2010).

This has led to the emergence of a debate on the applicability of quality management principles, methodologies and tools to the higher education sector. As reported in the literature on higher education, several voices have been heard about the non-applicability at all of those management theories, especially because they derived from industry and had nothing to do with the higher education ethos (Harvey, 1995; Maassy, 2003; Birnbaum, 2000; Kells, 1995; Pratasavitskaya and Stensaker, 2010). Other authors gave a more nuanced view on the subject, claiming that although higher education institutions were not companies some of the basic principles and tools could be applied as long as they were instruments at the service of institutions and their governance and management boards, subject to the institutions academic mission, goals and strategies (Williams, 1993; Harvey, 1995; Dill, 1995).

Although the debate is old, no firm conclusions have been reached so far. It seems, nevertheless, that in Europe, due to the developments on quality assurance that followed the Bologna Declaration, higher education institutions are now being "forced" to implement internal quality assurance systems based on the European Standards and Guidelines (ESG). Apparently the way these systems should be organised and function is not that specified, apart from the need to comply with the seven standards established in the ESG Part I, being up to each institution to define and implement its own quality assurance system in accordance with its mission, goals and institutional culture (Santos, 2011). So maybe this is the time to look again at quality management principles, tools and frameworks and see if they can be of some help to the development of these quality assurance – or management – systems.

The aim of this chapter is to revisit the debate on the applicability of quality management to the higher education sector, discussing its possibilities and impossibilities, in the light of the new developments in quality assurance in European higher education, namely the guidelines put forward in ESG Part I, since these provide indications for the institutions to set up their own systems. Some of the most well known quality management frameworks, such as the ISO 9001 standard, the EFQM Excellence Model and the Balanced Scorecard will be discussed on the basis of their usefulness for implementing quality management systems in higher education institutions. More specifically one will try to highlight how these quality management frameworks may be used to implement the seven standards for quality assurance established in the ESG Part I within HEIs, through an analysis of the criteria/indicators/requirements of the frameworks that accommodate each one of the standards. According to Sarrico *et al.* (2010) all these models propose to assess higher education institutions as a whole, including not only its teaching and research missions, but also other activities and, notably, institutional management, which is in the authors' opinion the area of quality management that needs to be developed and improved further in higher education. This discussion is particularly relevant since according to Pratasavitskaya and Stensaker (2010), the analysis of models and approaches of quality assurance at the institutional level has been rarely addressed in the literature, which is considered by the authors as an unfortunate situation since

“quality management, at least theoretically, can have potential benefits; for example, with respect to identifying available options higher education institutions may choose from in order to respond to increasing external pressures for demonstrating academic output” (Pratasavitskaya and Stensaker, 2010: 38).

2. Total quality management (TQM) and higher education: A long debate

Rosa and Amaral (2007) argue that it is difficult, maybe even impossible, to find a unique and unequivocal definition of TQM and that the better one can do is to put forward a set of principles that underlie most TQM approaches. To Campatelli *et al.* (2011: 696), TQM is “an approach to management characterised by the definition of some general and inspiring guiding principles and core concepts that represent the way the organisation is expected to operate in order to obtain high performance.” Both the ISO 9001 standard (ISO, 2005) and the EFQM Excellence model (EFQM, 2010) have established these principles and core concepts, which are usually used as the rationale to develop quality management systems within organisations (see Figure 1).

Goldberg and Cole (2002), referred in Calvo-Mora, Leal and Roldán (2005) consider TQM as being a “strategic option and an integrated management philosophy for organisations, which allow them to reach their objectives effectively and efficiently and to achieve a sustainable competitive advantage” (Calvo-Mora *et al.*, 2005: 742). According to Campatelli *et al.* (2011), TQM has been initially applied with good results in private sector organisations, being latter on used also in the public sector, namely in health care and education organisations.

Williams (1993: 229) refers to the rise of TQM in higher education as a “product of the market ideologies of the 80's and of the managerialism that accompanied it”. From the very beginning its emergence in higher education led to heated debates on its

applicability, originating what may perhaps be designated as two “schools of thought”. On one side the quality management literature presented the idea that education, including higher education, was another field where quality management principles, methodologies and tools could perfectly be applied leading to better schools, where more motivated teachers and students contributed to an improved teaching/learning process, being capable of doing more with the same or even with less (Sahney, Banwet and Karunes, 2004; Campatelli *et al.*, 2011; Cruickshank, 2003): “It is inevitable for quality management processes, which have helped to transform business and overcome their quality problems, to be transferred to the field of education” (Peak, 1995, referred in Calvo-Mora *et al.*, 2011: 741). According to this “school of thought” the reasons behind the adoption of quality management, namely TQM, in higher education lied on the need higher education had to react to the increasing pressures and demands from its stakeholders, finding itself in a market-oriented environment where internal and external customers needed to be satisfied and even delighted. Furthermore in a time of declining resources, combined with higher education rising costs and an increasing pressure to provide high quality education (Cruickshank, 2003), there was the need of ‘doing more with less’. The identification and application of “the relevant concepts of TQM to each and every aspect of academic life; that is, to the teaching, learning and administrative activities” (Sahney *et al.*, 2004: 145) appeared then as a viable solution.

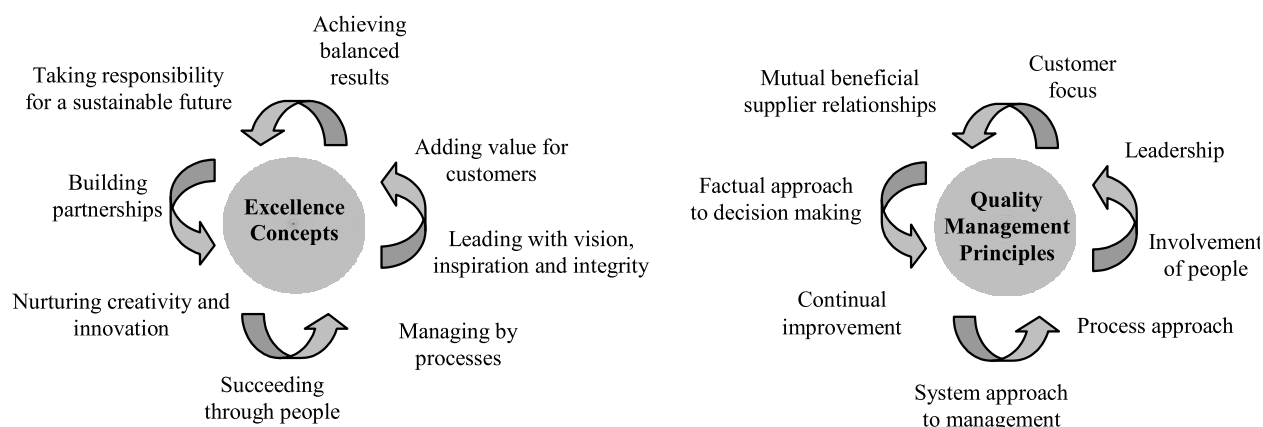


Fig. 1. The TQM principles that underlie the ISO 9001: 2008 standard (quality management principles) and the EFQM Excellence Model (concepts of excellence) (adapted from ISO (2005) and EFQM (2010))

On the other side, the higher education literature generically tended to put forward the idea that schools (and higher education institutions) were a very different type of organisation, with a different ethos and particular characteristics that made difficult, or even impossible, to implement a management philosophy derived from industry (Birnbaum and Deshotels, 1999, and Seymour, 1991, cited in Pratasavitskaya and Stensaker, 2010; Massy, 2003; Birnbaum, 2000; Kells, 1995). In fact, although not much publicised, it is known that in several institutions the application of quality management did not contribute to internal quality improvement (Harvey, 1995). Quality management is not a management approach easily applied to higher education institutions, especially because the academic culture of these organisations is quite strong and resistant to its concepts, principles and practices. And this resistance begins with terminology. Terms such as product, client, empowerment or even strategy, not to mention TQM or reengineering do not easily resonate in higher

education institutions. For Massy (2003:165) "The greatest resistance to quality process improvement comes from professors who think it's just another business-oriented fad. The language of some TQM advocates contributes to this view (...) Customer, scientific method and removal of all forms of waste are sure to raise the hackles of academics." According to Houston (2008), even the definition of quality that prevails in industrial/business environments, based on the idea of satisfying customers' needs and expectations, is problematic in higher education. The fact is that higher education has a multitude of interested parties, with different perspectives about its role. Houston (2008) identifies interlinked environments and expectations in which universities operate that correspond to looking at these institutions from three different perspectives: economic, societal and educational. Labelling any of the groups included under these perspectives, or in their connections, as the customers that define quality makes higher education demands oversimplified: "Customer-focused definitions of quality fit the context of higher education poorly." (Houston, 2008: 63).

Seymour (1991, referred in Pratasavitskaya and Stensaker, 2010) mentioned the following factors as reasons for the unsuccessful application of TQM to higher education: resistance to change; insufficient administration commitment; high time investment due to personal training; difficulty in applying TQM tools to the HEIs environment; little experience of team leaders and staff in team-work; and the concerns HEIs have with their own results not being sufficient enough. Rosa and Amaral (2007) add the absence of effective communication channels; the difficulty in measuring an HEI's results; the co-existence of several purposes and objectives for the HEI; an emphasis in the individualism and a significant degree of internal competition; the bureaucracy affecting decision-making circuits; and the absence of a strong leadership, highly committed to the ideas and principles it wants to implement and capable of involving all the institution's members.

To Birnbaum (2000) the most relevant barrier to quality management implementation in higher education has to do with the need for a compromise between it and the traditions, values and purposes of higher education institutions. According to the author, total quality management has probably been the first management tool capable of provoking a serious discussion not just about its technical merits and demerits, but also about its educational and social implications. For Kells (1995: 458): "An extremely important question is the extent to which managerial innovations can be successfully adapted to the environments they seek to serve, rather than, as is feared by many in the higher education world, there being the expectation that the institution must comply with the method."

In the higher education literature there are nevertheless more nuanced views on the subject, claiming that although higher education institutions are not companies some of the basic principles and tools can be applied as long as they are instruments at the service of institutions and their governance and management boards, subject to the institutions academic mission, goals and strategies (Rosa, 2003). Williams (1993) considers that continuous quality improvement; quality consistency; participation of academics, students and non-academic staff; satisfaction of the clients' needs; and the existence of management procedures that reinforce quality are a number of quality management principles that nobody would consider irrelevant within the higher education context. In

the author's opinion all these principles can significantly contribute to the development of massified higher education systems and their institutions, either explicitly oriented towards the market or not. Harvey (1995) considers that some TQM aspects can be adapted to higher education institutions and defends a new collegialism that emphasises professional accountability and cooperation, reflecting two quality management key elements: delegation of responsibility for quality and teamwork. The new collegialism emphasises the continuous improvement within the existent academic framework. Dill (1995) assumes a not very different perspective but replaces the notion of social capital for Harvey's new collegialism. For Dill (1995) there are also some important lessons that higher education institutions can learn from quality management, the most relevant being the central place that social capital should occupy inside organisations. Dill (1995) argues that efforts directed at enhancing quality should then be put into identifying networks and integration mechanisms that promote social capital development, leading to increased academic cohesion, communication and integration. Following this line of reasoning, examples of empirical studies aimed at probing the possibility of applying quality management tools and models for evaluating and improving the quality of management, services and processes of higher education institutions have been put forward. Examples include the application of the EFQM Excellence Model to higher education institutions, as illustrated by the works of Rosa (2003), Rosa and Amaral (2007), Campatelli, Citti and Meneghin (2011), Osseo-Asare Jr. and Longbottom (2002) and Calvo-Mora, Leal and Roldán (2005); the use of the Balance Scorecard (see, for example, Sahney, Banwet and Karunes, 2004; Asan and Tanyas, 2007 and O'Neill *et al.*, 1999); the application of the 14 Deming Principles (Redmond, Curtis, Noone and Keenan, 2008); the development of a TQM educational excellence model (Sakthivel and Raju, 2006); or the conduction of benchmarking exercises to improve institutions practices and performance (Jackson and Lund, 2000).

3. New developments in quality assurance in European higher education – The need for quality management systems

The quality concept in higher education can be said to be as old as the medieval ages (Rosa and Amaral, 2007), being possible to distinguish already in the 13th century two models of quality assessment: the French model of vesting control in an external authority – the archetype of quality assessment in terms of accountability – and the English model of a self-governing community of fellows – an example of quality assessment by means of peer review. These two models address two important dimensions of quality, extrinsic and intrinsic, the last one being dominant over the centuries in the academe. In fact the extrinsic dimension only has become relevant in the 1980's when the concerns with higher education quality, its assessment, management and improvement started to be a central policy issue for governments and society (Liaison Committee of Rectors' Conferences, 1993). This change in the approach to quality in higher education can be linked to a number of factors, such as (Rosa and Amaral, 2007: 183):

“the massification of higher education, changes in the relationship between higher education institutions and governments (from a model of state control to a model of state supervision), the increasing role of market regulation, increasing institutional autonomy and the problems of the principal/agent, and the loss of trust in universities associated with new public management.”

The 1980's and the decades that followed represented then a movement in the balance between two distinctive objectives higher education quality assessment has: accountability and quality improvement – the first objective being mainly pursued by governments and the second one by higher education institutions and academics. In fact there has been a rising prevalence of the accountability objective over the improvement one, leading to an increased attention by European governments and other institutions over higher education qualities, this is the qualities found in the services provided to society by higher education institutions (Rosa and Amaral, 2007).

From the 1980's onwards the development of quality assurance in Europe was fast. According to Schwarz and Westerheijden (2004) in the early 1990s fewer than 50% of the European countries had initiated quality assessment activities at supra-institutional level, while in 2003 all countries except Greece had entered into some form of supra-institutional assessment. Furthermore if state approval and accreditation schemes in the years 1998 and 2003 are compared, an overwhelming movement towards accreditation is observed. In fact, all recently implemented quality systems are based on accreditation (e.g. Austria, Germany and Norway), while old systems based on quality assessment were replaced by accreditation systems under the aegis of independent accreditation agencies (Flanders, The Netherlands and Portugal) (Amaral and Rosa, 2010). A key contributor to this movement has been the Bologna Declaration, signed by 29 European countries in 1999, and the process that followed. One of the main objectives of the Declaration was to encourage European cooperation in the quality assurance of higher education with a view to developing comparable criteria and methodologies. According to Schwartz and Westerheijden (2004: 36), the Bologna process has been an important “driver for change with regard to quality in steering mechanisms.”

Following the Bologna process, the European Ministers of Education adopted in 2005 the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and in 2007 established the European Quality Assurance Register for Higher Education (EQAR). The ESG are a set of standards, procedures and guidelines that higher education institutions and accredited agencies (the ones responsible for assessing and accrediting higher education programmes and institutions) should follow in order to implement, assess and accredit quality assurance systems in the European Higher Education Area (EHEA). According to ENQA (2007) they constitute a first step to the establishment of a widely shared set of underpinning values, expectations and good practices in relation to quality and its assurance, by institutions and agencies across the EHEA, aiming at providing a source of assistance and guidance to both HEIs and agencies, while contributing to a common frame of reference. The ESG are divided in three parts: Part 1, referring to standards and guidelines for internal quality assurance within higher education institutions; Part 2, referring to standards for the external quality assurance of higher education; and Part 3, referring to standards for external quality assurance agencies.

Although ENQA (2007: 13) claims “it is not the intention that these standards and guidelines should dictate practice or be interpreted as prescriptive and unchangeable”, the truth is that the mere existence of the ESG Part 1 led governments and higher education institutions to start paying more attention to the implementation of quality assurance systems within higher education institutions. In fact Santos (2011) refers that in all

countries that have signed the Bologna Declaration institutions are obliged to implement internal systems for quality assurance, in accordance with the fundamental idea that quality and quality assurance are primarily their responsibility. The author also mentions that in most countries the way these internal quality assurance systems are organised and function is not that specified, being up to each institution to define and implement its own system.

Furthermore another relatively recent development may also promote the implementation of quality management systems within European higher education institutions. It is the so-called quality enhancement movement, which can be seen as an attempt by universities to regain trust from society by restating that quality is their major responsibility and that the role of outside agencies should be limited to quality audits. The idea is not that new, since at the beginning of the nineties a similar approach was proposed in the US by academics, the basic idea being that accreditation should be transformed into audits of the institution's internal quality control procedures and self-examination schemes (Trow, 1996).

Even if in the UK the Quality Assurance Agency (QAA) has defined quality enhancement as "the process of taking deliberate steps at institutional level to improve the quality of learning opportunities", this still remains a not well-defined concept, with institutions still looking for their own definition of it (HEA, 2008). Nevertheless there are a number of common patterns to every institutional approach. A Higher Education Academy report (HEA, 2008) and a study conducted by Fillipakou and Tapper (2008) reveal some of the common quality enhancement characteristics taken from replies from diverse higher education institutions. These include institutions having the responsibility for the quality of the learning process; the existence of a flexible and negotiated evaluation model, non-mandatory and shaped by the participants in the teaching/learning process; and external vigilance of HEIs relying on institutional audits.

These late developments in quality assurance in European higher education, and the consequent emphasis that is being put on the need for HEIs to build their own mechanisms to assure and improve teaching and learning quality, lead us to think that maybe this is the time to look again at quality management principles, tools and frameworks and see if they can be of some help to the development of these quality assurance – or management – systems.

4. Quality management frameworks: Revisiting the debate on their applicability

Harvey (1995) once mentioned that there was time to go beyond TQM and that rather than "debate suitability it is time to look to practice and determine the worthwhile aspects of TQM and relocate them in the higher education context" (Harvey, 1995: 123). Also Joseph Juran, one of the leading quality management gurus, has observed that "the prime need is to discover the realities under the labels, i.e. the deeds, activities, or things which the other person is talking about..." (Juran and Gryna, 1988: 2, 13, cited in Houston, 2008).

Besides gurus' ideas on what quality management is and how it should be implemented, managed and improved, there are several methodologies to measure and guide quality assessment and improvement in organisations. Within these the ISO 9000 standards, the

Balanced Scorecard and the EFQM Excellence Model deserve to be noticed due to their international recognition and previous validation. Discussing the possibilities of using them and/or their logics within higher education institutions to frame quality assurance/management systems is made in this section of the paper, taking into consideration what the ESG establishes as standards for internal quality assurance. Furthermore one will try to go a step further by showing that these quality management models, while encompassing the ESG, are in fact broader than the standards, allowing, if adequately applied, for a truly quality enhancement approach within higher education institutions and not just a quality assurance one as, in our opinion, is the case with the application of just the ESG.

As previously referred there is a long debate about quality in higher education. This debate has repeatedly shown the difficulty in reaching a consensus not only about what quality is, but also about its implications for higher education. Sarrico *et al.* (2010) consider that quality can have multiple meanings in higher education and that this variety has had important consequences in the development of methods and instruments of assessing quality. According to the authors,

“one of the most important issues refers to the multidimensionality of higher education institutions, which perform multiple and very different missions. Thus, higher education institutions face multiple stakeholders that have different expectations and different priorities regarding higher education. These differences will necessarily reflect in their specific approach to the evaluation of higher education, which should reflect the multiplicity of interests and aspirations that converge into each higher education institutions. The development of several models of institutional evaluation has often been an attempt to reflect those differences and nuances into an integrated evaluative framework (Sarrico *et al.*, 2010:51).

Furthermore Sarrico *et al.* (2010: 52) claim that

“there are already some examples in the literature that account for the application of institutional quality assessment models that provide this integrated view on higher education quality, providing frameworks for better institutional management (...) leading to continuous quality improvement. These are the cases of the EFQM Excellence Model, the Balanced Scorecard, Benchmarking exercises or the EUA Institutional Evaluation Programme. All these models propose to assess higher education institutions as a whole, including not only its teaching and research missions, but also other activities and, notably, institutional management.”

The ESG (ENQA, 2007: 16-19) establishes seven standards for quality assurance within HEIs, complemented with guidelines for their implementation:

1. Policy and procedures for quality assurance

Institutions should have a policy and associated procedures for the assurance of the quality and standards of their programmes and awards. They should also commit themselves explicitly to the development of a culture which recognises the importance of quality, and quality assurance, in their work. To achieve this, institutions should develop and implement a strategy for the continuous enhancement of quality. The strategy, policy and procedures should have a formal status and be publicly available. They should also include a role for students and other stakeholders.

2. Approval, monitoring and periodic review of programmes and awards

Institutions should have formal mechanisms for the approval, periodic review and monitoring of their programmes and awards.

3. Assessment of students

Students should be assessed using published criteria, regulations and procedures which are applied consistently.

4. Quality assurance of teaching staff

Institutions should have ways of satisfying themselves that staff involved with the teaching of students are qualified and competent to do so. They should be available to those undertaking external reviews, and commented upon in reports.

5. Learning resources and student support

Institutions should ensure that the resources available for the support of student learning are adequate and appropriate for each programme offered.

6. Information systems

Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes of study and other activities.

7. Public information

Institutions should regularly publish up to date, impartial and objective information, both quantitative and qualitative, about the programmes and awards they are offering.

Can these standards be implemented resorting to the quality management frameworks proposed in the quality management literature? Would it be wise to do so?

The Balanced Scorecard

The Balanced Scorecard (BSC) was developed by Kaplan & Norton (1992) and aims at attaining a balance between several dimensions of performance (see Figure 2). These include the following ones: financial, internal business processes, customer and the needs of learning and growth. The critical point is that in order for the organisation to be successful it needs to understand the interactions between actions (operational and developmental) and results (external indicators and financial ones). This apparently simple idea has had a tremendous impact in recent years in encouraging managers, at various levels, to develop balanced indicators of performance. Furthermore, this tool has produced other important changes by exposing managers to both indicators of determinants and results. The development of the BSC attempts to understand the interaction between both, helping organisations to develop a performance measurement mechanism that links strategy and operations.

Those organisations that are capable of reflecting their strategy in their systems of performance measurement seem to be better equipped to implement the former. By using knowledge on the interactions between indicators on operations, funding, external (customers), and development (learning and growth), organisations can become smarter. Those more able at exploring those interactions are likely to perform better. This analysis

is not trivial since the interactions between operational decisions and organisational performance can be extremely complex.

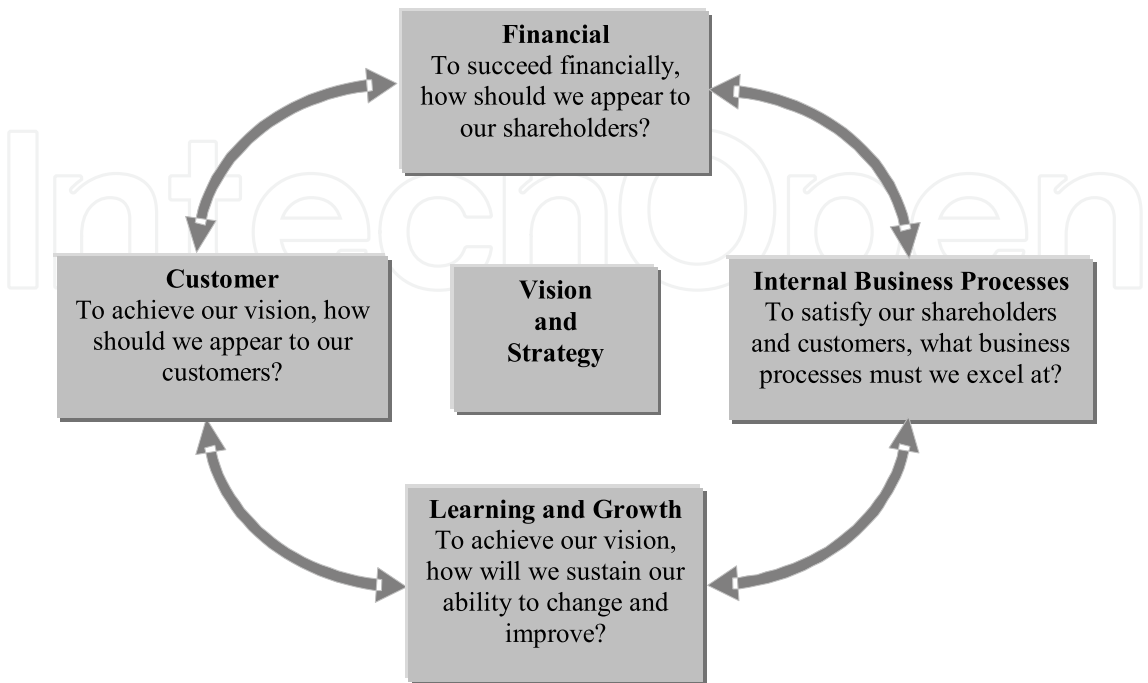


Fig. 2. Balanced Scorecard (adapted from Kaplan and Norton, 1992)

Several studies reported in the literature demonstrate the application of the BSC to the educational context (see, for example, Asan and Tanyas, 2007; O'Neill *et al.*, 1999; Cullen *et al.*, 2003; Karathanos and Karathanos, 2005), on the basis that “educational institutions also need to be managed through strategic concepts, in order to meet demands and keep up with change” (Asan and Tanyas, 2007: 1006). Furthermore, if one looks at the ESG Part1 one can see that standards could be met through a proper definition of the different performance indicators included in the BSC. Starting with *Policy and procedures for quality assurance* which should be part of the Vision and Strategy at the core of the model. *Approval, monitoring and periodic review of programmes and awards*; *Assessment of students*; *Quality assurance of teaching staff and Learning resources and teaching staff* could be met when defining the Internal Business Processes indicators; *Public information* would go well under the Customer indicators and *Information systems* resorting to Learning and Growth. Moreover the philosophy behind the BSC, of linking actions and results, helps to make sense of the links between the seven standards put forward in the ESG and that otherwise may be looked at as independent ones, adding a developmental character to a quality assurance system that otherwise would look as mainly operational. Interestingly nothing is said on financial sustainability in the ESG, something which is already addressed in some national systems of quality assurance.

The EFQM Excellence Model

Another model that attempts to improve the capacity of organisations to incorporate the interactions between actions and results in their decision-making process is the EFQM Excellence Model, a creation of the *European Foundation for Quality Management* (EFQM).

According to Campatelli *et al.* (2011: 693) the EFQM “promotes the use of a standard management model (...) capable of bringing the organisation to excellence level and a standard evaluation process that could be applied to all types of organisations, regardless of sector, size, structure or maturity.”

The EFQM model attempts to analyse how satisfaction can lead to excellence in organisational results. It was devised as a non-prescriptive framework, which recognises that excellence may be sustainably achieved through the adoption of different approaches (Calvo-Mora *et al.*, 2005). The model states that satisfaction of customers and employees, and societal impact are achieved through leadership, which facilitates and stimulates institutional strategies and the management of personnel, resources and processes (see Figure 3). The institution’s capacity to deal successfully with those aspects will depend ultimately on their organisational excellence. The model states that the learning processes within the institution will help it to improve its performance and further development. The proponents of this model consider that first-rate organisations have a better institutional performance due to better management practices, i.e., better management of processes, skills, people (either employees or customers) and structure. On the other hand, this behaviour impinges on a clear vision, a service-oriented concept, well articulated strategies and an adequate culture stimulated by effective leadership. First-rate organisations go beyond intuition and not only understand the links between operational decisions and organisational development, but also use that understanding effectively.

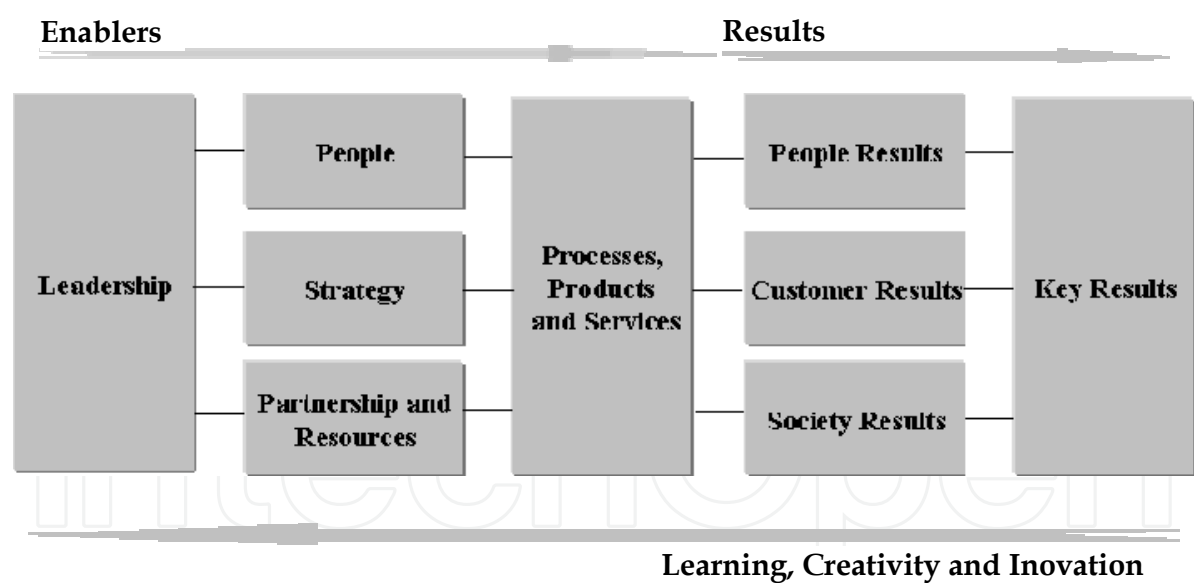


Fig. 3. The EFQM Excellence Model (adapted from EFQM, 2010)

According to Rosa and Amaral (2007), since the EFQM Excellence Model is associated with business, it has been resisted by academics and did not receive broad-based support inside HEIs. But the authors also alert to the fact that “the growing concern with quality, the need to be accountable towards society and the increasing presence of the market in higher education systems have made quality assessment, management, assurance and improvement an unquestionable reality, covering teaching, research, services and institutional-level approaches.” (Rosa and Amaral, 2007: 194). So it is not that surprising

that some higher education systems and institutions have started to consider its application, as has been reported in the literature (Saraiva, Rosa and Orey, 2003; Farrar 2000; Osseo-Asare Jr. and Longbottom, 2002; Hides and Davies, 2002; McAdam and Welsh, 2000; Cortadellas, 2000; Schmidt and García-Legaz, 2003; Calvo-Mora, Leal and Roldán, 2005, Rosa and Amaral, 2007; Campatelli, Citti and Meneghin, 2011), since it “provides a unique framework for the global evaluation of an organisation and strongly promotes the implementation of a continuous improvement system.” (Campatelli *et al.*, 2011: 693).

Looking at the model criteria it is relatively easy to see that they cover the standards for quality assurance predicted under the ESG (2005): *Policy and procedures for quality assurance* is addressed under the Leadership and Strategy criteria; *Approval, monitoring and periodic review of programmes and awards* and *Assessment of students* under the Processes, Products and Services criterion; *Quality assurance of teaching staff* under the People criterion; *Learning resources and student support* is covered by the Resources and Partnerships criterion; and finally both the *Information systems* and the *Public information* standards may be addressed through the different enablers and results criteria, depending on institutions local circumstances as referred in the ESG (ENQA, 2007). Furthermore, the arrow in the model, representing its feedback philosophy, also contributes to the implementation of the *Information systems* standard, since this one has to do with institutional self-knowledge, being the starting point for effective quality assurance (ENQA, 2007). Additionally, as was the case with the BSC, the EFQM model allows to uncover the links between the seven standards, since it is also based on the idea that quality actions (enablers) lead to quality results.

The ISO 9001: 2008 Standard

Another possible quality management framework that HEIs may be willing to consider is the ISO 9001:2008 standard, which is probably the most well known of the referred frameworks. This standard sets the requirements for implementing a quality management system in an organisation, independently of its dimension or type of activity, including education institutions.

According to the ISO (2005), a quality management system is the management system that directs and controls an organisation with respect to quality. The ISO 9001:2008 standard establishes the minimum requirements to set up such a system, which are organised in five main blocks: *Quality Management System*; *Management Responsibility*; *Resource Management*; *Product Realization*; and *Measurement, Analysis and Improvement* (see Figure 4).

According to the ISO 9000:2000 developing and implementing a quality management system comprehends several phases, among which:

- determining the needs and expectations of customers and other interested parties; establishing a policy for quality and the organisation quality goals;
- defining the processes and responsibilities needed to attain the quality goals defined;
- determining and making available the resources needed to attain the quality goals defined;
- establishing the methods to measure each process' efficiency and efficacy;
- applying these measures to determine each process efficiency and efficacy;
- identifying the means to prevent non-conformities and eliminate its causes;

- establishing and applying a process to the continuous improvement of the organisation's quality management system.

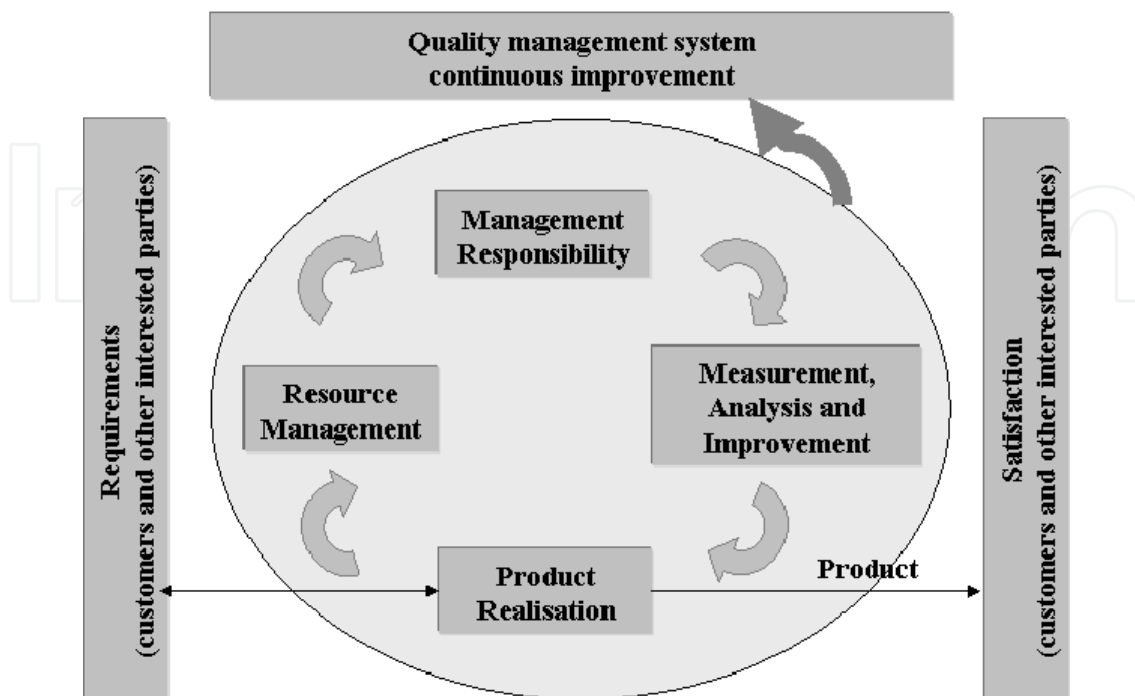


Fig. 4. The ISO 9001:2008 standard model (adapted from ISO, 2008).

A lot of criticism has emerged around the application of this standard to higher education institutions, namely because the “ISO approach entails too general a view of the ‘production process’ of higher education” (Csizmadia, 2006, cited in Pratasavitskaya and Stensaker, 2010:39), implying a high degree of processes’ standardisation that is incompatible with HEIs’ nature (Rosa, 2003). It is true that there are not many references in the literature to the ISO 9001 implementation in higher education institutions; nevertheless Rosa (2003) argues that this standard can in fact be applied if the HEI so wishes and believes that implementing a quality management system according to it will allow embarking in a continuous improvement process (that does not end with the standard implementation, although the implementation can constitute a good departure point). And the truth is that some HEIs have indeed decided to implement such quality management systems (Sohail *et al.*, 2006; Welsh and Dey, 2002), obtaining benefits such as a cost effective method for accountability, the development of an improvement-driven focus through re-focusing core processes to improve both productivity and service levels, to take into account a broader number of stakeholder views, to enhance the use of data for quality assurance purposes and improvement in inter-departmental working conditions and student enrolment (Brookes and Becket, 2007). Nevertheless the truth is that the application of the ISO 9001 in higher education has been generically limited to the institutions’ services and not to their core functions, namely teaching and learning.

Looking at the ISO 9001 requirements shows their implementation will answer to the ESG. Addressing Management Responsibility will lead to the implementation of a *Policy and procedures for quality assurance*, while the *Approval, monitoring and periodic review of programmes and awards* and the *Assessment of students* are covered under the Realisation of the

Product. When implementing the Resource Management requirements, the *Quality assurance of teaching staff* and the *Learning resources and student support* standards are addressed. Finally the requirements put under Measurement, Analysis and Improvement allow for the implementation of the *Information systems* and *Public information* standards. Again the idea underlying the ISO 9001 standard that there is the need to continuously improve an organisation quality management system, based on the application of the PDCA (Plan-Do-Check-Act) cycle, contributes to establish a link between the seven standards established in the ESG, allowing for the implementation in the HEIs of a quality assurance system with a truly developmental character.

From the analysis just presented it seems that the ESG may be applied in European HEIs if these decide to opt for the implementation of a quality management system based on one of the most well known quality management frameworks. Additionally, when doing so institutions are establishing interrelationships among the standards, allowing them to really take into consideration the need for *feedback* processes that will lead to higher education institutions and their functions, namely teaching and research, continuous improvement. In a sense if HEIs will go for the implementation of the ESG *tout court* they risk being implementing a rather operational quality assurance approach, while if they opt for their implementation via the adoption of a quality management model there is the possibility that quality assurance will become more developmental, hopefully leading to true quality enhancement.

5. Conclusions

In 2007 Brookes and Becket (2007) made a review of the literature on quality management in higher education and came to the conclusion that a number of environmental forces were driving change within and across countries, leading to a firm emergence of the quality management issue on the agenda of many higher education institutions. The review revealed that the most popular response HEIs gave was the testing or implementation of quality management models developed by industry. From the empirical studies reported in the literature and analysed by the authors, benefits related to the implementation of these models as well as limitations were identified. The benefits included the adoption of a strategic approach to quality measurement and management and the identification of quality enhancement priorities; limitations related largely to the dilemma of applying business models to higher education. Furthermore the authors refer that “the models are reported to have far greater applicability in measuring administrative or service functions within HEIs rather than the quality of research or teaching and learning” (Brookes and Becket, 2007: 105-106).

This paper argues that at least in Europe the need for higher education institutions to develop their own internal quality management systems has become a reality, for which European standards and guidelines have even been defined. So maybe it is again the time to look at existent quality management models, going beyond the debates about whether quality management is or is not suited for higher education, focusing less on the label and paying more attention to the content and substance of such models (Harvey, 1995; Pratasavitskaya and Stensaker, 2010). Because it may just be as Birnbaum (2000: 104) points out: “TQM was sound; it was the implementation that was at fault”. Furthermore the

discussion presented in this paper leads us to conclude that quality management models not only have full potential to cover the standards and guidelines established by ENQA in 2005 to higher education, but additionally they may allow HEIs to go a step further, opening the possibility for them to really move towards quality enhancement. It is just a matter of adequately implementing them, so that they cover what lies at the heart of higher education: teaching and learning.

Interestingly, and certainly worth further research, is the fact that the adoption of the ESG by the European HEIs may finally allow for *benchmarking* exercises, which so far have been difficult to implement due to the rather different nature of quality assurance practices existent in HEIs all over Europe. Benchmarking is a process that can be used to improve higher education institutions' practices and performance (see Jackson & Lund, 2000). It is a self-evaluation method that allows a better knowledge and measurement of the organization's performance in order to promote continuous improvement. *Benchmarking* has been used in higher education especially in supporting areas such as administrative, technical and management activities. The effective management of those activities becomes critical for higher education institutions' performance, especially since the latter face an increasingly complex context of tight financial resources and rapidly changing environment. *Benchmarking* not only allows for the comparison of indicators, which makes possible the review of proposed goals, but also allows for the sharing of best practices within functional communities, identifying more intelligent ways of performing the same tasks and new solutions for common problems.

6. References

- Amaral, A., & Rosa, M. J. (2010). Recent Trends in Quality Assurance. *Quality in Higher Education*, 16(1), 59-61.
- Asan, S. S., & Tanyas, M. (2007). Integrating Hoshin Kanri and the Balanced Scorecard for Strategic Management: The case of higher education. *Total Quality Management and Business Excellence*, 18(9), 999-1014.
- Birnbaum, R. (2000). *Management fads in higher education. Where they come from, what they do, why they fail*. San Francisco: Jossey-Bass Inc.
- Birnbaum, R., & Deshotels, J. (1999). Has the academy adopted TQM? *Planning for Higher Education*, 28, 29-37.
- Brookes, M., & Becket, N. (2007). Quality management in higher education: a review of international issues and practice. *International Journal of Quality Standards*, 1(1), 85-121.
- Calvo-Mora, A., Leal, A., & Roldán, J. L. (2007). Relationships between the EFQM model criteria: a study in Spanish universities. *Total Quality Management and Business Excellence*, 16(6), 741-770.
- Campatelli, G., Citti, P., & Meneghin, A. (2011). Development of a simplified approach based on the EFQM model and Six Sigma for the implementation of TQM principles in a university administration. *Total Quality Management and Business Excellence*, 22(7), 691-704.

- Cortadellas, J. (2000). *Aplicação do modelo EFQM no ensino - Universidade Politécnica da Catalunha*. Paper presented at the Sistemas de Avaliação da Qualidade no Ensino Superior.
- Cruickshank, M. (2003). Total quality management in the higher education sector: a literature review from an international and Australian perspective. *Total Quality Management and Business Excellence*, 14(10), 1159-1167.
- Cullen, J., Hassal, T., & Broadbent, M. (2003). Quality in higher education: from monitoring to management. *Quality Assurance in Education*, 11(1), 5-14.
- Dill, D. (1995). Through Deming's eyes: a cross-national analysis of quality assurance policies in higher education. *Quality in Higher Education*, 1, 95-110.
- EFQM. (2010). *EFQM Excellence Model*. Brussels: EFQM.
- ENQA. (2007). *Standards and Guidelines for Quality Assurance in the European Higher Education Area*. Helsinki: ENQA - European Association for Quality Assurance in Higher Education.
- Farrar, M. (2000). Structuring Success: A Case Study in the Use of the EFQM Excellence Model in School Improvement. *Total quality management*, 11(4/6), 691-696.
- Filippakou, O., & Tapper, T. (2011). Quality Assurance and Quality Enhancement in Higher Education: Contested Territories? . *Higher Education Quarterly*, 62(1/2), 84-100.
- Harvey, L. (1995). Beyond TQM. *Quality in Higher Education*, 1, 123-146.
- HEA. (2008). *Quality enhancement and assurance: - a changing picture?* York: Higher Education Academy.
- Hides, M., & Davies, J. (2002). *Implementation of the EFQM Excellence Model in the UK Higher Education Sector. A Comparison With Other Sectors*. Paper presented at the 7th World Congress for Total Quality Management - Business Excellence, Make it Happen!
- Houston, D. (2008). Rethinking quality and improvement in higher education. *Quality Assurance in Education*, 16(1), 61-79.
- ISO. (2005). *Quality management systems - Fundamentals and vocabulary*: Geneve: International Organisation for Standardisation.
- ISO. (2008). *Quality Management Systems - Requirements*: International Organisation for Standardisation.
- Jackson, N. & Lund, H. (2000). *Benchmarking for higher education*. Buckingham: Open University Press.
- Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard - measures that drive performance. *Harvard Business Review*, Jan-Feb, 71-79.
- Karathanos, D., & Karathanos, P. (2005). Applying the Balanced Scorecard to Education. *Journal of Education for Business*, 80(4), 222-230.
- Kells, H. (1995). Creating a culture of evaluation and self-regulation in higher education organisations. *Total quality management*, 6(5/6), 457-467.
- Liaison Committee of Rectors' Conferences (1993). *Quality Assessment in European Higher Education. A Report on Methods and Mechanisms, and Policy Recommendations to the European Community*. Brussels: Liaison Committee of Rectors' Conferences.

- Massy, W. F. (2003). *Honoring the trust. Quality and cost containment in higher education*. Bolton: Anker Publishing.
- McAdam, R., & Welsh, W. (2000). A Critical Review of the Business Excellence Quality Model Applied to Further Education Colleges. *Quality Assurance in Education*, 8(3), 120-130.
- O'Neil, H. F. J., Bensimon, E., Diamond, M., & Moore, M. (1999). Designing and implementing an academic scorecard. *Change*, 31(6), 32-40.
- Osseo-Asare Jr, A. E., & Longbottom, D. (2002). The need for education and training in the use of the EFQM model for quality management in UK higher education institutions. *Quality Assurance in Education*, 10(1), 26-36.
- Pratasavitskaya, H., & Stensaker, B. (2010). Quality management in higher education: towards a better understanding of an emerging field. *Quality in Higher Education*, 16(1), 37-50.
- Redmond, R., Curtis, E., Noone, T., & Keenan, P. (2008). Quality in higher education. The contribution of Edward Deming's principles. *International Journal of Educational Management*, 22(5), 432-441.
- Rosa, M. J. (2003). *Definição de Bases Estratégicas e de Excelência para o Desenvolvimento do Ensino Superior em Portugal*. Universidade de Aveiro, Aveiro.
- Rosa, M. J., & Amaral, A. (2007). A self-assessment of higher education institutions from the perspective of the EFQM excellence model. In D. F. Westerheijden, B. Stensaker & M. J. Rosa (Eds.), *Quality assurance in higher education: trends in regulation, translation and transformation* (Vol. 20, pp. 181-207). Dordrecht: Springer.
- Sahney, S., Banwet, D. K., & Karunes, S. (2004). Conceptualizing total quality management in higher education. *The TQM Magazine*, 16(2), 145-159.
- Sakthivel, P. B., & Raju, R. (2006). Conceptualizing total quality management in engineering education and developing a TQM educational excellence model. *Total Quality Management and Business Excellence*, 17(7), 913-934.
- Santos, S. M. d. (2011). *Análise comparativa dos processos europeus para avaliação e acreditação de sistemas internos de garantia de qualidade*. Lisboa: A3ES - Readings.
- Saraiva, P., Rosa, M. J., & Orey, J. (2003). A Large-scale Application in Portuguese Schools of the EFQM Excellence Model. *Quality Progress*, 36(11), 46-51.
- Sarrico, C. S., Rosa, M. J., Teixeira, P. N., & Cardoso, M. F. (2010). Assessing quality and evaluating performance in higher education: worlds apart or complementary views? *Minerva*, 48, 35-54.
- Schmidt, A., & García-Legaz, F. (2003). *Análisis del poder predictivo del modelo EFQM para la gestión y mejora de la calidad en la universidad pública española*. Paper presented at the XIII Jornadas Hispano-Lusas de Gestión Científica - La empresa familiar en un mundo globalizado.
- Schwarz, S., & Westerheijden, D. (2004). *Accreditation and Evaluation in the European Higher Education Area*. Dordrecht: Kluwer Academic Press.
- Sohail, M., Daud, S., & Rajadurai, J. (2006). Restructuring a higher education institution: a case from a developing country. *International Journal of Educational Management*, 20(4), 279-290.

- Trow, M. (1996). Trust, markets and accountability in higher education: a comparative perspective. *Higher Education Policy* 9(4), 309-324.
- Welsh, J., & Dey, S. (2002). Quality measurement and quality assurance in higher education. *Quality Assurance in Education*, 10(1), 17-25.
- Williams, G. (1993). Total quality management in higher education: panacea or placebo? *Higher Education*, 25(3), 229-237.

IntechOpen

IntechOpen



Quality Assurance and Management

Edited by Prof. Mehmet Savsar

ISBN 978-953-51-0378-3

Hard cover, 424 pages

Publisher InTech

Published online 23, March, 2012

Published in print edition March, 2012

The purpose of this book is to present new concepts, state-of-the-art techniques and advances in quality related research. Novel ideas and current developments in the field of quality assurance and related topics are presented in different chapters, which are organized according to application areas. Initial chapters present basic ideas and historical perspectives on quality, while subsequent chapters present quality assurance applications in education, healthcare, medicine, software development, service industry, and other technical areas. This book is a valuable contribution to the literature in the field of quality assurance and quality management. The primary target audience for the book includes students, researchers, quality engineers, production and process managers, and professionals who are interested in quality assurance and related areas.

How to reference

In order to correctly reference this scholarly work, feel free to copy and paste the following:

Maria J. Rosa, Cláudia S. Sarrico and Alberto Amaral (2012). Implementing Quality Management Systems in Higher Education Institutions, Quality Assurance and Management, Prof. Mehmet Savsar (Ed.), ISBN: 978-953-51-0378-3, InTech, Available from: <http://www.intechopen.com/books/quality-assurance-and-management/implementing-quality-management-systems-in-higher-education-institutions>

INTECH
open science | open minds

InTech Europe

University Campus STeP Ri
Slavka Krautzeka 83/A
51000 Rijeka, Croatia
Phone: +385 (51) 770 447
Fax: +385 (51) 686 166
www.intechopen.com

InTech China

Unit 405, Office Block, Hotel Equatorial Shanghai
No.65, Yan An Road (West), Shanghai, 200040, China
中国上海市延安西路65号上海国际贵都大饭店办公楼405单元
Phone: +86-21-62489820
Fax: +86-21-62489821

© 2012 The Author(s). Licensee IntechOpen. This is an open access article distributed under the terms of the [Creative Commons Attribution 3.0 License](https://creativecommons.org/licenses/by/3.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

IntechOpen

IntechOpen