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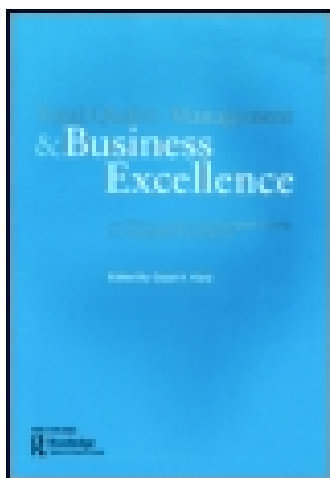


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The integration of quality management in higher education institutions: a systematic literature review

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The integration of quality management in higher education institutions: a systematic literature review

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This paper presents the results of a systematic literature review showing how the literature on quality management (QM) in higher education (HE) has evolved. As a first contribution, this work presents a systematic breakdown of research in the field of HE quality management. Its second and most innovative contribution is its coverage of the process of introducing quality management into institutions' global management systems. Theoretically, we believe this second point to be a general trend in the evolution of the quality management literature, and empirically it represents a trend for quality management principles and practices in governance and management systems of higher education institutions (HEIs). The literature was analysed by distinguishing three main levels in HEIs: a process level, an organisational level, and, since our focus is specifically on the field of quality management, a quality management principles level. Overall, this paper concludes that integration at the three levels of analysis is strong. Moreover, we were able to identify a trend towards the development of holistic and comprehensive quality management approaches both in conceptual and empirical research studies.

Keywords: quality management; higher education; integration; literature review

Introduction

Quality emerged as a business and industrial concern, and gradually became a 'societal' concern affecting all areas of society, especially public services. This concern has driven a controversial debate about the best way to achieve quality in public services and also about the implications of applying quality management (QM) frameworks in public services that were designed for business and manufacturing.

There seems to be an aversion to the word 'management' in much of the literature dealing with higher education (HE). As a consequence, even when the literature on public services addresses QM, it tends to use a different terminology. HE in particular habitually refers to QM as 'quality assurance', which is rather odd for QM research, as it reduces the scope of QM to its assurance component. Indeed, literature on the study of HE has mainly been based on sociology or educational science, and less on management (Amaral & Magalhães, 2007).

Thus, this paper aims to fill a gap in the QM literature in the field of HE. We review the literature on QM in HE, looking at whether the literature has been evolving towards integration, as we believe that this is the current tendency in this field.

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Integration is seen as the process whereby organisations develop QM methods which are part of their global management systems, covering different processes and organisational levels while including the implementation of a whole set of principles that underlies the definition of QM. Our thesis statement is that the QM literature is evolving towards this idea of integration, and is increasingly presenting and discussing broad and holistic approaches to quality, in which these various dimensions appear, reflecting a systematic view of the organisation and its processes.

The need for integration has been discussed by a number of authors. According to Horine and Hailey (1995, p. 16), ‘Quality management must be driven by clearly defined goals and strategic plans and must be planned and managed with the same (. . .) thoroughness as any other organisational strategy’. In the same way, Cruickshank (2003) believes that HEIs should closely weave quality assurance initiatives into the strategic plans of institutions.

Thus, this paper intends to provide a systematic review of the QM literature in HE. Its goal is to understand the following: how the literature approaches QM in the HE field; to what extent QM methods in HE are aligned with the broader definitions of QM and reflect its main principles; and finally, we want to check whether there is a temporal trend towards integration.

To our knowledge, this is an innovative study in the field of QM. The most similar study that we have found is the literature review of QM in HE conducted by Pratasavitskaya and Stensaker (2010). This, however, was more centred on the specific literature surrounding HE studies, and was more limited in terms of coverage and time frame.

Quality management in HE

QM has become embedded in more and more organisations since the beginning of the twenty-first century. This reflects the gradual realisation that lasting improvement could not be accomplished without paying significant attention to the quality of management practices used on a daily basis (i.e. that the ‘quality of management’ is as important as the ‘management of quality’) (Rosa & Amaral, 2007, p. 208).

Although it may be difficult, or even impossible, to find a unique and unequivocal definition of QM, it is generally accepted to represent a ‘philosophy or an approach to management’ made up of a ‘set of mutually reinforcing principles, each of which is supported by a set of practices and techniques’ (Dean & Bowen, 1994, p. 92).

Furthermore, these principles are part of a much-debated integrated paradigm for management – Total Quality Management (TQM) – which defines some general guiding principles and the core concepts of quality (Mehta, Verma, & Seth, 2014). Nevertheless, there is no model that can provide an ideal, one-size-fits-all solution for all organisational requirements (Berlin Communiqué, 2003).

The concern with quality in HE, covering teaching, research, services, and institutional-level approaches (Stensaker, Langfeldt, Huisman, & Westerheijden, 2011), gave rise to the debate about the applicability of QM tools to HE, where the most important challenge throughout is the ‘critical rethinking’ of quality and improvement (Bologna Declaration, 1999), and the design of quality models in a language that is familiar to the culture of HE and which could be adaptable to the mission of HEIs (European Association for Quality Assurance in Higher Education, 2009, pp. 16, 17).

The idea of integration

Theoretically, the management literature shows that a more integrative vision of QM practices is being proposed and implemented, as part of a broader system of management

practices. In fact, the literature seems to be changing its focus from that of an approach based on measurement models of quality in organisations, to a total and holistic management approach which promotes quality within organisations (Rosa & Amaral, 2007).

In particular, understanding the case of QM integration in HE institutions can be considered more interesting than most other industries, as HEIs bring to the fore the issue of integration in traditionally fragmented and loosely coupled organisations. This is opposed to for-profit organisations, which have a unique strategy and a strong leadership, even when compared to some public services which have a strong Weberian regime.

In fact, as Orton and Weick (1990) emphasise, universities have a fragmented internal and external environment, motivated by the existence of ‘dispersed stimuli or incompatible expectations’, and consequently, are loosely coupled systems and can be seen as ‘organised anarchies’ (Cohen, March, & Olsen, 1972; Weick, 1976; Orton & Weick, 1990; Deem, 1998).

However, there are indications that universities are increasingly interested in integrating their main activities and consequently their management practices. A good example is the development of instruments for classifying and ranking HEIs and also for adopting a broad range of dimensions and performance indicators (Van Vught & Westerheijden, 2010; Duque, 2013).

Moreover, the management context of universities seems to be more and more integrated, leading to the centralisation of power in a small number of decision-making and governance bodies (Melo, Sarrico, & Radnor, 2010).

Accordingly, one could argue that universities are, in practical terms, in the process of following the trend found in QM literature and in the daily life of organisations from other sectors – seeking stronger integration of various management practices within a global management and governance system.

In our literature review, there are three ‘levels’ where we look for integration: processes, organisation, and QM principles. Following the literature, these three different levels are the most significant in terms of understanding the different approaches to QM in HE, as well as for drawing conclusions about the degree of integration of QM within the overall governance and management systems of HEIs.

According to the literature on HE studies (Barnett, 1990), there are four main dimensions at the process level: teaching and learning, research and scholarship, third mission, and support processes. In turn, the literature on quality in HE (Brennan & Shah, 2000) refers to three organisational levels: programme level, unit level, and institutional level. Finally, the literature on QM (Evans & Lindsay, 2004) consensually presents eight principles of QM: customer focus, leadership, involvement of people, process approach, system approach, continual improvement, factual approach to decision-making, and mutually beneficial supplier relationships (ISO, 2012).

Research design

A systematic literature review is ‘an important vehicle of academic discussion, dissemination and debate’ (Page, 2008) and it must be ‘thorough, sensitive and transparent’ (Papaioannou, Sutton, Carroll, Booth, & Wong, 2010). However, several difficulties frequently arise in this process: not only can there be conflicting results, but also ambiguous, poorly defined and constantly changing terms appear (especially within social sciences) (Page, 2008; Papaioannou et al., 2010). Moreover, ‘the larger the literature base on a topic, the more pronounced these problems can become’ (Page, 2008) and ‘seeking to minimise possible elements of bias is both time and resource intensive’ (Papaioannou et al., 2010).

At present there are three main sources for bibliometric data: Thomson Reuters Web of Science (WoS), Elsevier's Scopus, and Google Scholar, but only the first two restrict their coverage to peer-reviewed-only material. Bearing in mind the potential bias and also the potential solutions, the research was carried out using Elsevier's Scopus database. Scopus is the largest abstract and citation database of peer-reviewed literature and it contains the most important journals in terms of our research topic (namely it indexes 50% more journals in the social sciences than WoS). Moreover, Scopus tends to cover less traditional topics, such as quality, as well as more interdisciplinary publications (Klavans & Boyack, 2007; Meho & Rogers, 2008).

Having defined the goals of the research, we searched for the expressions 'quality management', 'HE', 'universities', 'post-secondary education', 'TQM', and 'excellence' in articles from social sciences and humanities.

After the first search (based on the above mentioned criteria), data were exported to the reference management software Endnote before embarking on a first reading of the abstracts. Some articles were then excluded (see Figure 1) as they were outside the scope of our research. This procedure sought to find 'all relevant material in the database' and, at the same time, to 'reject irrelevant material' (Page, 2008). The remaining articles were then analysed and an in-depth analysis was carried out. (See [Supplementary material online](#) for a list of articles included in the literature review.)

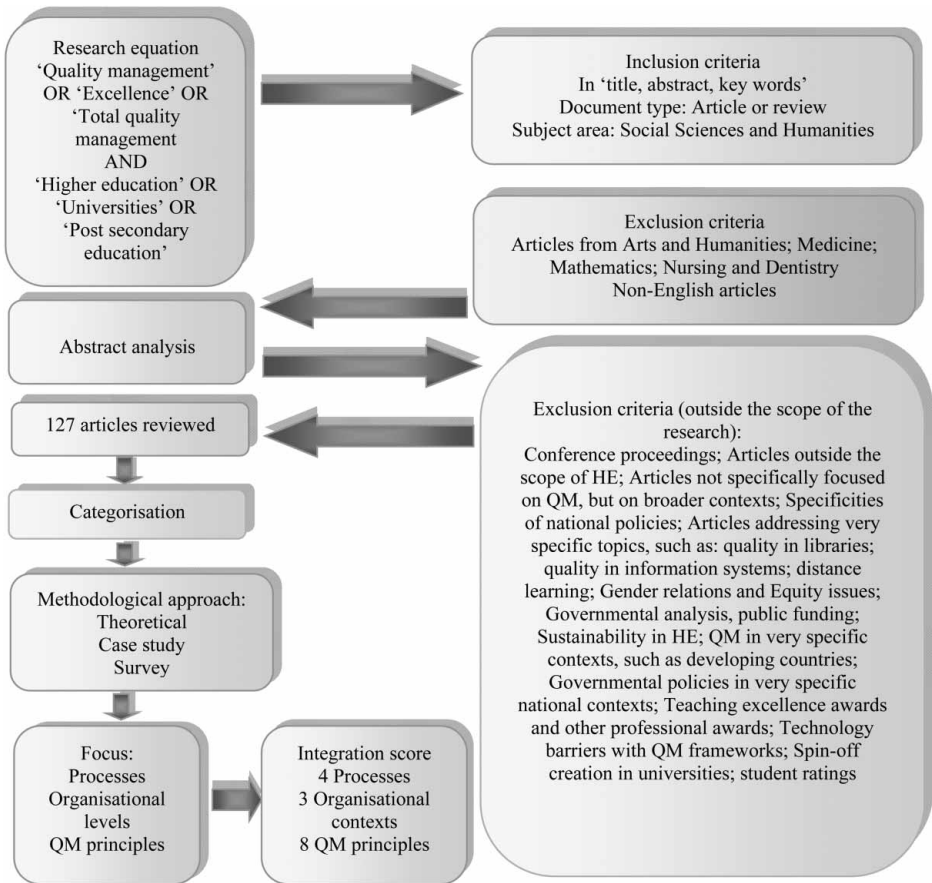


Figure 1. Research design.

Recognising the importance of assessing the quality of the papers included in the search (Papaioannou et al., 2010), we developed a bibliometric analysis using the impact factor of the journals and also the number of citations of the articles per year (see Table 1). We analysed the quality of the journals by taking into account the Scimago Journal Ranking (SJR), which

is a bibliometric indicator that measures the prestige or influence of a scientific journal article, calculated with the largest and most nearly complete bibliographic database using a citation window of 3 years that is wide enough to include most of the citations and dynamic enough to measure the evolution of scientific journals; (González-Pereira, Guerrero-Bote, & Moya-Anegón, 2011, p. 19)

and the respective quartiles for the journal in 2013, where Q1 holds the highest values and Q4 the lowest values.

Table 1 shows that the majority of the articles found come from *Total Quality Management & Business Excellence* (TQM&BE), formerly known as *Total Quality Management* (1990–2002), which is a journal from the Business, Management and Accounting area. This is followed by *Quality Assurance in Education* and *Quality in Higher Education*, which respectively have 14 and 13 reviewed articles. Putting TQM&BE to one side, it is interesting to observe that two HE journals from the Social Sciences area have the highest number of articles addressing QM in HE. These three journals also have the highest number of citations. However, there are two other journals which stand out given their citations: *Quality Progress* and *International Journal of Quality and Reliability Management*. Despite having less than half the articles of the other three journals, these last two publications have a high number of citations. Table 1 also reveals that the journals in our literature review belong to a wide range of subject areas, ranging from Business, Management, and Accounting to Psychology.

A content analysis was conducted on the articles, based on an analysis grid that categorised them according to their methodological approach and their focus. The methodological approach divided the articles into one of three groups: conceptual or theoretical, single and multiple case study, and survey. With regard to the focus of the articles, we considered three sub-categories of analysis: processes, organisational level, and QM principles.

As processes, we considered not only the three main processes of HEIs (teaching and learning, research and scholarship, and the third mission), but also support processes. Teaching and learning, together with research and scholarship, are core activities within HEIs. The third mission reflects the engagement of universities in business-related activities, local and regional development, economic growth, and societal development in general (Laredo, 2007). The support processes cover all sorts of services and processes, ranging from administrative services to other support processes and activities (Yeo & Li, 2014).

The organisational levels were divided into programme level (if the article was focused on one or more study programmes offered by HEIs), unit level (if the focus of the article was a department, a faculty or other basic unit of HEIs), and institutional level (if the article had a broader focus in terms of the organisational structure of HEIs).

Finally, we categorised the articles according to QM principles. Since ‘QM’ is the key expression of our research, and as one of our goals was to understand the evolution of the QM literature in HE, we thought that it would be relevant to analyse whether literature on QM in HE addressed the QM principles.

Overall, we aimed to understand the following: whether authors approach the quality of processes separately or in an integrated way; whether quality practices exist at the three

Table 1. Scimago Journal Ranking and quartiles of the journals presented in the review.

Journals	Articles	SJR	Quartile ^a	Citations	Subject areas ^b
Total Quality Management & Business Excellence	24	0.574	Q1	419	1
Quality Assurance in Education	14	0.665	Q2	267	3
Quality in Higher Education	13	1.250	Q1	177	3
Assessment and Evaluation in Higher Education	5	1.340	Q1	27	3
International Journal of Quality and Reliability Management	5	0.653	Q1/Q2	109	1
Quality Progress	5	0.160	Q3/Q4	87	1, 6, 8
Innovative Higher Education	4	0.440	Q2	5	3
Journal of Higher Education Policy and Management	4	0.258	Q1	28	3
The TQM Journal	4	0.712	Q1/Q2	11	1, 6
Higher Education in Europe	3	0	–	22	3
Tertiary Education and Management	3	0.680	Q2	2	1, 3
Innovations in Education and Training International	2	0.850	Q1	4	3
International Journal of Educational Management	2	0.510	Q2	23	1, 3
International Journal of Productivity and Quality Management	2	0.332	Q2	10	1
Research in Higher Education	2	1.555	Q1	1	3
Academic Leadership	1	0.026	Q4	4	1, 3
Business Communication Quarterly	1	0.268	Q2	10	1, 5
Critical Perspectives on Accounting	1	0.924	Q1/Q2	58	1, 6
Current Science	1	0.275	Q1	5	4
Economics of Education Review	1	1.556	Q1	0	2, 3
Education and Training	1	0.390	Q2	5	1, 7
Educational Research and Review	1	0.150	Q4	0	3
Electronic Journal of Business Research Methods	1	0	–	0	1
European Journal of Education	1	0.500	Q2	0	3
Higher Education	1	1.310	Q1	11	5
Higher Education Quarterly	1	0.690	Q1	7	3
Human Factors and Ergonomics in Manufacturing	1	0.256	Q2/Q3	0	3, 8
International Business Management	1	0.388	Q2	6	1
International Journal of Business Performance Management	1	0.133	Q3/Q4	0	1
International Journal of Engineering Education	1	1.280	Q1	2	3, 8
International Journal of Physical Distribution and Logistics Management	1	1.310	Q1	3	1, 3
International Journal of Production Economics	1	2.393	Q1	2	1, 2, 6, 8
International Journal of Sustainability in Higher Education	1	1.081	Q1	8	3
JAC: A Journal of Composition Theory	1	0.116	Q3/Q4	1	3
Journal of Educational Administration	1	0.881	Q1	18	3
Journal of Hospitality, Leisure, Sport and Tourism Education	1	0.318	Q3	15	1, 3

(Continued)

Table 1. Continued.

Journals	Articles	SJR	Quartile ^a	Citations	Subject areas ^b
Journal of Management Development	1	1.305	Q1/Q2	5	1, 5
Journal of Personnel Evaluation in Education	1	0	–	0	7
Journal of Workplace Learning	1	0.547	Q2	1	1, 4, 9
Leadership and Organization Development Journal	1	0.521	Q1/Q2	10	1
Management Decision	1	1.420	Q1	7	1, 6
Minerva	1	1.034	Q1	0	3
Perspectives: Policy and Practice in Higher Education	1	0.290	Q3	2	3
Research and Administrative Activities	1	0	–	3	3
Research Evaluation	1	0.886	Q1	8	3
Russian Education and Society	1	0.111	Q4	1	3
Social Work Research	1	0.305	Q1/Q4	5	3
Sociological Perspectives	1	0.960	Q1	12	3
Systems Research and Behavioural Science	1	0.260	Q2/Q3	4	1, 3, 6
World Applied Sciences Journal	1	0.220	Q2	8	4

^aThe quartile in 2013 depends on the specific subject category in the journal.

^bSubject areas:

1. Business, Management, and Accounting.
2. Economics, Econometrics, and Finance.
3. Social Sciences.
4. Multidisciplinary.
5. Arts and Humanities.
6. Decision Sciences.
7. Education.
8. Engineering.
9. Psychology.

organisational levels and whether they are managed in an articulated and integrated way; and finally, whether the different dimensions associated with QM principles are implemented separately, or whether they adopt a holistic and integrative perspective.

Moreover, despite references to the topic of integration appearing in the literature, as we have seen earlier, it has not been approached as a research topic in itself as it is here. As far as we are aware, this is the first study reviewing the level of integration of QM in HE. In this context, to facilitate the analysis of the level of integration found in each of the reviewed articles, we used an ‘integration score’, which is merely the result of the sum of the number of focused dimensions (4+3+8) resulting from the three levels of analysis in each article. As such, the highest possible integration score is 15.

Later in the article we also explore possible correlations between measures of quality of the journals and the articles, and the results of our literature review, mainly considering the integration score and the methodology, in order to understand if there were patterns or particular trends in these data.

Results and discussion

Methodological approach

Methodologically, there are more empirical than conceptual/theoretical articles on QM in HE (see Table 2). Nevertheless, analysing the evolution of theoretical and empirical articles over the years, we do not observe significant differences. The most significant

Table 2. Categorisation according to the methodological approach.

Approaches	Total
Conceptual/theoretical	57
Single case study	23
Multiple case study	7
Survey	35
Combination of survey and case study	5

trend seems to be the increase in both empirical and theoretical research, between 2005 and 2010 (see Figure 2).

Different approaches are visible in the theoretical articles: discussions on the applicability of the QM approach to HE (e.g. Cruickshank, 2003); analyses of existing quality frameworks for QM in HE, or the development and proposal of new ones (e.g. Ho & Wearn, 1996; Owlia & Aspinwall, 1996); theoretical discussions and literature reviews about QM in general, or about specific topics (e.g. Burkhalter, 1996); conceptual reflections on the concept of quality (e.g. Van Kemenade, Pupius, & Hardjono, 2008; Ehlers, 2009); or the analysis of national QM frameworks (e.g. Jensen, 2000; Juhl & Christensen, 2008).

For empirical studies, the survey is the most common methodological approach, followed by single and multiple case studies. There are also articles which combine both approaches. In general, empirical studies address topics such as the application of QM frameworks to HE (e.g. Rosa, Saraiva, & Diz, 2001, 2003); quality culture (e.g. Horine & Hailey, 1995; Hergüner & Reeves, 2000); and external quality control, accreditation and certification systems (e.g. Doherty, 1993; Papadimitriou & Westerheijden, 2010; Van Kemenade & Hardjono, 2010).

Process level

At the process level, the literature has a strong focus on the level of teaching and learning (see Table 3).

In fact, authors are especially concerned with what Brennan and Shah (2000) designate as the ‘academic’ and the ‘pedagogic’ facets of HE. Thus, several QM approaches in HE

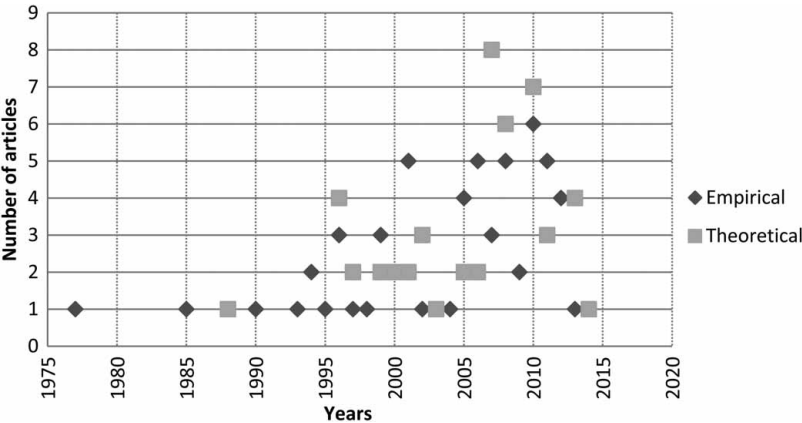


Figure 2. Temporal analysis of empirical and theoretical literature.

Table 3. Classification by focus.

Level	Focus	Total
Processes level	Teaching and learning	123
	Research and scholarship	49
	Third mission	31
	Support processes	59
Organisational level	Programme	45
	Basic unit	54
	Institution	107
Quality management principles level	Customer focus	95
	Leadership	76
	Involvement of people	90
	Process approach	87
	System approach	85
	Continual improvement	90
	Factual approach to decision-making	85
	Mutually beneficial supplier relationship	67

seem to be learning-oriented, with an emphasis on the students' learning experience and on educational development (e.g. Srikanthan & Dalrymple, 2002, 2005, 2007; Pratasavitskaya & Stensaker, 2010).

The research and scholarship dimension takes second place, with a lot less references than teaching and learning, despite being a core process in HEI. Widrick, Mergen, and Grant (2002) is a good example of the inclusion of research.

The third mission or 'the service to community' dimension (Srikanthan & Dalrymple, 2007; Rodman, Biloslavo, & Bratož, 2013) is the dimension receiving least attention.

The support processes dimension, after teaching and learning, is the most mentioned dimension at process level showing that QM in HE is applied at the level of administrative and management processes (e.g. Kanji & Tambi, 1999); support activities for students (e.g. Horine & Hailey, 1995; Burkhalter, 1996); support facilities and infrastructures (e.g. Srikanthan & Dalrymple, 2002, 2005, 2007); or student advice (e.g. Montano, Hunt, & Boudreaux, 2005).

Considering integration in the process level, we observe that there are not many articles integrating the four processes. Nevertheless, there are some articles with a good level of integration, and even articles proposing the integration of the different processes in HEIs. A particular example here is the research of Sellers-Rubio, Mas-Ruiz, and Casado-Díaz (2010), which proposes the complementarity of teaching, research, and administrative activities.

Organisational level

At the organisational level, we can see a clear emphasis on institutions, followed by basic units and then programmes (see Table 3). Thus, the literature focuses more on the larger and broader levels of the organisational structure of HEIs.

In terms of integration, the articles rarely address more than one dimension. More often, we find articles that address two levels – in this case an article normally studies a more focused level (programme or basic unit level), and the broadest level (institutions).

Quality management principles level

The literature frequently addresses the different principles of QM (see Table 3). Nevertheless, generally only one of the principles is emphasised (e.g. leadership, customer focus, process approach, or involvement of people).

The principle of customer focus is the most addressed. In HE, the concept of the customer can be complex, due to the ‘difficulty of identifying customers and their expectations’ and to the ‘diversity of customers and stakeholders [which] is by no means a situation unique to HE’ (Meirovich & Romar, 2006). In this sense, there is a continued debate regarding ‘who the customer actually is’ (Becket & Brookes, 2006). However, other authors do have a clear idea of the concept of the customer in HE and about who the customers are. In line with what was discussed previously, this idea of a customer can vary (e.g. Burkhalter, 1996; Evans, 1996). Students may be seen in different roles, sometimes as ‘internal customers’ or alternatively as ‘laborers of the learning process’ and as ‘product-in-process’ (Helms & Key, 1994; Sirvanci, 1996), or even as a ‘product’ for a ‘customer’, which is the ‘employer’ (Bailey & Bennett, 1996).

Since leadership has ‘a strategic role in sustaining quality and performance improvement’ in HEIs (Osseo-Asare, Longbottom, & Murphy, 2005), it is not surprising that it is also the focus of a significant number of articles. In some articles, leadership is not the main focus when seen in the context of QM frameworks (e.g. Cruickshank, 2003; Calvo-Mora, Leal, & Roldán, 2005, 2006; Houston, 2007); in others, leadership is highlighted and its importance in QM is discussed more deeply (e.g. Burkhalter, 1996; Davies, Hides, & Casey, 2001).

The principle of the involvement of people is also of central interest. In the literature reviewed, the involvement of people was taken to mean the involvement of the different stakeholders of HE in the quality process (e.g. Rosa et al., 2003; Calvo-Mora et al., 2005); and the perspectives of the stakeholders with respect to QM, whether employers (e.g. Willis & Taylor, 1999; Rodman et al., 2013), students (e.g. Zineldin, Akdag, & Vasicheva, 2011), or academics (e.g. Rosa, Tavares, & Amaral, 2006).

The process approach is also stressed in a significant number of articles, in order to highlight its integrative and interactive facet (e.g. Horine & Hailey, 1995; Burkhalter, 1996). As stated by Kettunen (2012), the process approach of QM means that ‘an integrated system is representative of how an organisation is structured, and how each process is related to other processes (...) forming a total system’ (Kettunen, 2012).

In this sense, the systemic approach present in a number of articles also stresses the integration, alignment, and inter-relationship among processes as a system (e.g. Barnard, 1999; Achcaoucaou et al., 2014).

Continuous improvement of organisational performance is also frequently discussed. Authors stress the importance of continuous improvement in the QM process overall and ‘in achieving customer satisfaction and business excellence’ (Kanji & Tambi, 1999).

The principle of a factual approach is addressed by a number of articles – this is to be expected, as a significant number of quality-related practices are based on the analysis of data, indicators, and other types of information (e.g. Achcaoucaou et al., 2014; Rodman et al., 2013).

The principle of mutually beneficial supplier relationships is also addressed and reflects the development and management of ‘dynamic relationships with internal and external stakeholders’ (Venkatraman, 2007).

Overall, we found several articles integrating all the principles of QM, especially those focusing on ‘holistic’ and ‘total’ management frameworks. There are very few articles that do not explicitly address any of the QM principles.

Quality management in HE: towards integration?

The most significant trend in the articles reviewed seems to be the development of QM frameworks and their specific dimensions either in conceptual or in empirical research (e.g. Srikanthan & Dalrymple, 2002, 2005, 2007; Rosa et al., 2003; Achcaoucaou et al., 2014). This trend seems to be the main reason for the high degree of integration when it comes to QM principles. Indeed, authors either theoretically discuss QM approaches (Torgersen & Torgersen, 1997; Anyamele, 2007; Bilen, 2010; Tambi, Ghazali, & Yahya, 2008; Law, 2010; Bagautdinova, Novenkova, & Sarkin, 2013), or accreditation models (Ayers, Gephart, & Clark, 1988); or develop empirical studies on the implementation of different QM models in HE, as with EFQM (Tari, 2006), TQM and ISO 9000 quality standard (Doherty, 1993), or SERVQUAL (Pariseau & McDaniel, 1997).

Thus, some works clearly develop integrative approaches, either by integrating ‘the quality dimensions identified into a model of institutional quality of HE’ (Rodman et al., 2013), or by exploring an integrative quality model, based on the concept of quality culture (Horine & Hailey, 1995; Hergüner & Reeves, 2000).

Furthermore, we find articles suggesting the need for integration of the QM practices in the broader management system of HEIs (Bagautdinova et al., 2013), and stating that the implementation of QM practices in an university should be an integral part of the development of the university (Dyan & Clifford, 2001) and of their strategic plan (Bender & Siller, 2006).

In relation to the methodological approach, and on comparing integration in both empirical and theoretical literature, we did not observe any major differences between the two bodies of literature; instead, they present a similar pattern with respect to high integration scores.

Considering integration for the three levels analysed, we observe that the majority of the articles covering process and organisational levels are concentrated at the lowest integration levels, while at the level of QM principles, articles are concentrated at the highest integration levels.

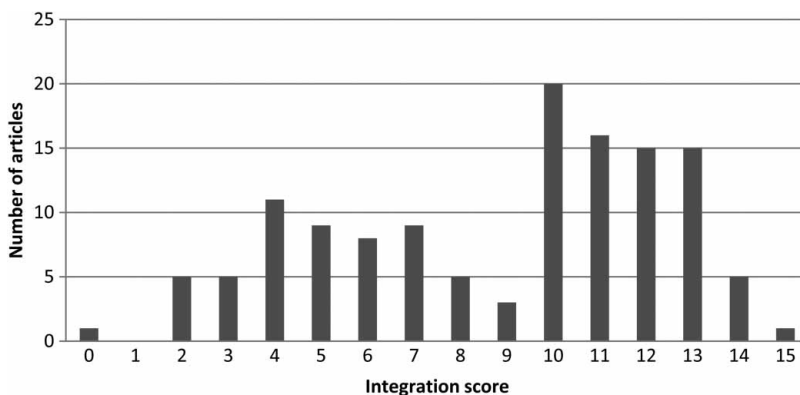


Figure 3. Integration score.

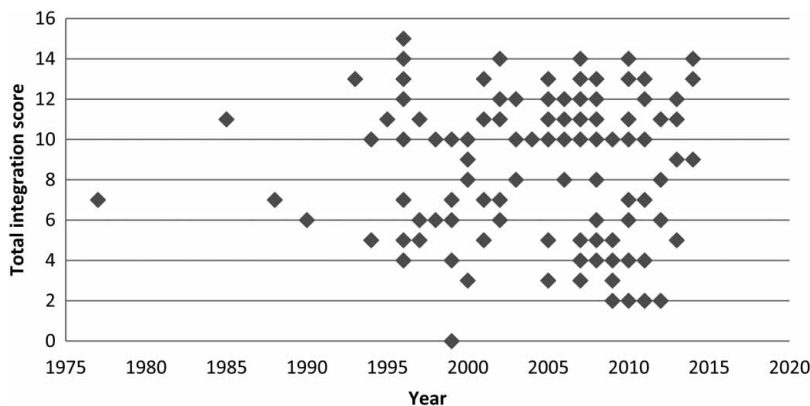


Figure 4. Temporal analysis of the integration score.

In any event, the overall analysis of the articles reviewed shows positive results in terms of integration. Analysing the number of papers per integration score in [Figure 3](#), we see high integration scores in the majority of the articles, one of which achieves the highest integration score of 15. This means that in general, articles use a comprehensive and integrative approach to QM.

However, we did not find significant correlations for either the quality measures of the journals or the number of citations of the articles, when compared with their integration score, or the methodological approach. In this respect, there are no patterns or particular trends.

Also, the hypothesis stating that levels of integration would be stronger in recent years is not confirmed in our review, as there are no significant differences between the articles from the late 1990s and those from the most recent years (see [Figure 4](#)).

Conclusions

The goal of this systematic literature review was to understand how the literature has approached QM in HE, how the main QM principles are being addressed and, more importantly, *integrated* in all processes and organisational levels of universities.

Despite the high number of conceptual articles which appear in our review, there is an obvious trend towards a more empirically based debate, especially after the early 2000s. We believe that this is the most beneficial direction for this debate, as only empirical research can advance our knowledge and understanding of currently unanswered questions in the area. Specifically, such questions revolve around the role of QM systems in improving HEIs, which relate these QM systems to the broader management context of institutions. Nevertheless, it is interesting to observe that the most cited articles are theoretical.

The literature also seems to be concerned with the development of QM frameworks in a holistic way, combining different aspects of quality, ultimately reflecting a high level of integration for the dimensions analysed. Still, despite some of these approaches being dubbed ‘holistic’, many tend to be ‘partial’ and ‘limited’ holistic approaches if we consider the possibilities in terms of those levels and dimensions that can be integrated within HEIs.

However, ‘total integration’ is present a few times in both the process and organisational levels, and is very often found at the level of QM principles. Furthermore, the tendency for holistic approaches appears to be connected with the discussion and development of QM frameworks (Rosa et al., 2001, 2003; Srikanthan & Dalrymple,

2002, 2005, 2007) which have been imported and adapted from industry. However, such approaches are also associated with the implementation of national models, internal and external quality models, or accreditation systems, although these are less visible (Doherty, 1993; Hergüner & Reeves, 2000; Rosa, Cardoso, Dias, & Amaral, 2011).

In this sense, the literature has been approaching QM practices in an integrated way, responding positively to our research question; QM is being integrated in HEIs at different management levels.

However, the ‘total’ integration of QM in HEIs does not yet seem to be a reality. It appears that the QM field is still often treated as a separated field, run by a separate department within HEIs, and is not yet an integrated part of the organisation. On this point, we believe that the discussion on the concept of integration could make an important contribution to the field. In other words, QM practices could be more integrated in the broader management context of HEIs, as has been the case in other sectors (Sousa & Voss, 2002). However, the QM literature has yet to define the next step in the drive for an effective integrative approach to HE – ultimately helping improve performance in HE, as similar integrative approaches have done in other organisational fields (Kaynak, 2003).

The study has some limitations. The first of these is associated with the systematisation process and the range of the research. The a priori definition of a research equation, and other inclusion and exclusion criteria, can inadvertently leave out some important articles; of course, it is extremely helpful in delimiting the research in accordance with our goals.

In future research, we aim to contribute to the understanding of the integration of QM in the broader systems of HEIs, undertaking case studies to better understand how integration of QM in the management and governance structures of HEIs occurs.

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Supplementary Material

A complete list of the literature reviewed for this research can be accessed via the supplemental tab on the article’s online page [<http://dx.doi.org/10.1080/14783363.2015.1050180>].

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