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## Article

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## HOW TO BUILD TOTAL QUALITY MANAGEMENT SYSTEM FOR HIGHER EDUCATION IN A SMALL COUNTRY

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**Blagica Novkovska**

### **Abstract**

In this paper the issue of effective establishment of total quality management system in higher education in Macedonia is discussed in details. In Macedonia, substantial changes occurred during last two decades: introduction of Bologna system, establishment of private higher education institutions, accompanied by multiple changes of the respective state regulation. After a period of intensive changes, actual state of the higher educational system is relatively stable, allowing introduction of largely applied quality management system intended to be used in future on long term. On central level, particular role is expected to be played by the higher education Quality Agency, responsible for the accreditation and evaluation of higher education in Macedonia, according the new law. Effective system has to produce value for all stakeholders.

Authors consider that in the next period optimal conditions will be in place to introduce uniform total quality management system which will support accelerated improvement of the quality of higher education services.

**Keywords:** quality management, higher education, business process modelling.

*Jel Classification:* I21; I29; K39; M3

### **INTRODUCTION**

Total quality management in educational systems had been extensively studied in recent years (Iyer 2018; Khan et al. 2018; Papanthymou and Darra 2018; Sallis 2014). High quality of the system output is required both for the needs of national economies, as well

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as for the mobility on the international level. Methods of analysis of the functioning of these systems are simultaneously developed.

Total Quality Management is framework for the improvement of quality; it involves doing things right first time and every time. For its successful implementation, there is a strong need of everyone's participation from the institution rather than the only involvement of only senior management.

In this work the situation with the level of development of higher education system in Republic of Macedonia has been studied and perspectives for establishment of effective total quality management system discussed.

## **1. RECENT PROGRESS IN THE HIGHER EDUCATIONAL SYSTEM OF REPUBLIC OF MACEDONIA**

In Macedonia, substantial changes occurred during last two decades: introduction of Bologna system (Sin and Tavares 2018; Stojanovski, Denkova, and Marolov 2018), establishment of private higher education institutions, accompanied by multiple changes of the respective state regulation. After a period of intensive changes, actual state of the higher educational system is relatively stable, allowing introduction of largely applied quality management system intended to be used in future on long term. On central level, particular role is expected to be played by the Higher Education Quality Agency, responsible for the accreditation and evaluation of higher education in Macedonia, according the new law (Ministry of Education and Science 2018). This agency has two boards: Higher Education Accreditation Board and Higher Education Evaluation Board. Previously, these two functions of these boards were given to two separate state bodies, connected to the Ministry of Education and Science of Republic of Macedonia. According the new law, the Agency Higher Education Quality Agency is a single independent body. Establishing of this Board is still in progress in the phase of finalization of this work and specific modalities to be defined by sublaws are not yet available for analysis and discussion. Further details of the functioning of new system will be available after the establishment of the central body of the higher educational system, Council for Higher Education and Science, having particular position in taking the decisions of high importance for the system. Changes are also expected to occur in the organization of the universities, splitting or fashioning of existing ones, as well as changes in the owners' structure.

Authors consider that in the next period optimal conditions will be in place to introduce uniform total quality management system which will support accelerated improvement of the quality of higher education services.

## **2. ROLE OF THE TOTAL QUALITY MANAGEMENT SYSTEM IN HIGHER EDUCATION**

The aim of a total quality management system in higher education is required in order to achieve the goals of the institution in an efficient way, satisfying the needs of the users at reasonable price of the services. It consists of set of activities regularly performed in

order to reach the given goals. ISO 9000 standard applies in general to various kinds of organizations. Several specificities are to be taken in the case of higher education (In'airat and Al-Kassem 2014; Iyer 2018; Nogueiro, Saraiva, and Jorge 2017).

It has been shown in literature that the basis for total quality management can be formed using business process modeling (Jeston 2014). Particular attention in creation of the models is to be paid to the satisfaction of graduates (Dragan, Ivana, and Arba 2014). Permanent improvement of performances, leadership and team work have been often also taken into account. Corporate social responsibility in conjunction with effective total quality management system provides a solid basis for sustainable improvement of institution performances (Nogueiro, Saraiva, and Jorge 2017).

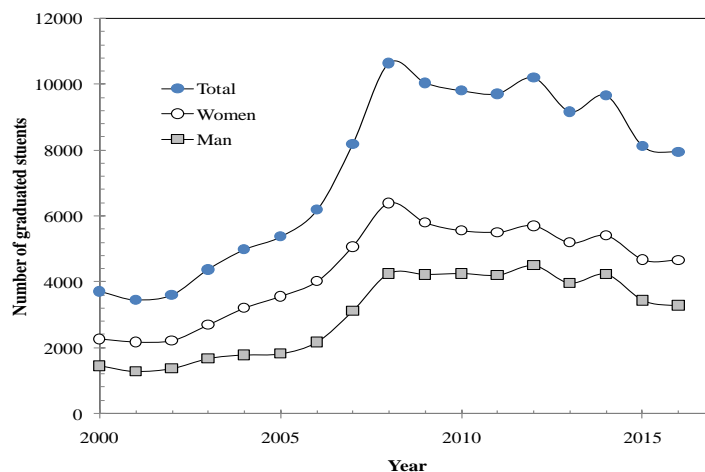
Use of the stakeholder theory in the creation of the model is of particular importance (Hickman and Akdere 2017), since the parts involved in the process have substantially different characteristics. Effective system has to produce value for all stakeholders.

In addition, in order to benefit at maximum of the total management system, organizational learning is required (Aminbeidokhti, Jamshidi, and Mohammadi Hoseini 2016).

### **3. MAIN CHARACTERISTICS OF THE HIGHER EDUCATIONAL SYSTEM OF REPUBLIC OF MACEDONIA**

In Republic of Macedonia there are 6 universities for which the state is responsible: Ss. Cyril and Methodius University in Skopje, St. Clement of Ohrid University of Bitola, Goce Deltchev University in Shtip, State University of Tetovo and South East European University in Tetovo, and University of Information Science and Technology (UIST) “St. Paul the Apostle” in Ohrid. Additionally, there are 19 accredited private higher education institutions: FON University, International Balkan University, University American College Skopje, European University Macedonia, University for Tourism and Management Skopje, University of New York in Skopje, School of Journalism and Public Relations, MIT Faculties, International University of Struga, University for Audiovisual Arts Parisian European Film Academy ESRA Skopje, Business Academy Smilevski Skopje, Euro College Kumanovo, Institute of Social Sciences and Humanities Skopje, International Vision University in Gostivar, Faculty of Business Studies in Skopje, University Euro-Balkan, Academia Italiana Skopje, Integrated Business Faculty and International Slavic University “G. R. Derzhavin” in Macedonia (Sveti Nikole).

These higher education institutions largely vary by the size as well by the types of the programmes offered. In addition, some changes will occur in near future due to the changes in the regulation. It is expected the number of the study programmes to be substantially reduced, because less institutions will be allowed to execute programmes. Besides, it is expected, based on the gained experience by the higher education institutions themselves, the programmes that appeared not enough attractive for students to be not reaccredited further.



**Figure 1.** Variations of the number of graduate students (first cycle) for the period 2000–2016 (total, as well as man and women separately)

Source: MakStat database

In Figure 1 evolution of the number of graduated students since year 2000 is shown, using the values reported by State Statistical Office of Republic of Macedonia (MakStat database). A sharp increase after year 2000 is observed, leading to peak values in 2008. This period of increase is due to the changes of the higher education system and the increase of number of higher education institutions. Number of graduated students per year in that period increased for a factor of about 2.5. In the period after 2008 the number of graduated students slowly decreases, with some oscillations that can be considered to be not significant. The slow decrease in the last sub-period can be in its major part attributed to the demographic changes. No marked variations of the ratio women/man have been observed. It remains on the value of about 1.5 for the entire considered period. Thus, we can conclude that the sharp changes in the higher education sector are finished and the further development can be effectively controlled in a relatively stable legal, institutional and program environment.

Only 3.7% of the graduated are foreign students, mainly from neighboring countries, indicating low interest and unsatisfactory reputation of Macedonian higher education institutions in the region.

#### 4. METHOD OF ANALYSIS

In order to suggest optimal solutions for introduction of total quality management system following approach has been adopted for this work.

First, experience from previous implementations of quality management systems in Macedonia is to be used in particular solutions for higher education that are to be adopted. More details on these possibilities can be found in Novkovska (2014). Since the

basis for total quality management can be formed using business process modeling (Jeston 2014), such solutions indicated to be functional in this environment (Novkovska, Papazoska, and Ristevska-Karajovanovikj 2012) are to be used as well in the case of higher education. In order to establish as efficient total quality management system, the capacities of all of the institutions involved in the system are to be optimally used.

Second, best practices from other countries already having in place functional total quality management system are to be used as example in establishment of the system, avoiding repeating the same procedures by different actors in the process.

## **5. EXAMPLES FROM COUNTRIES IN REGION**

Dragan, Ivana, and Arba (2014) proposed a model for quality management in higher education institutions of Romania based on business process modeling. General framework of the model has been constructed based on the approach used by Harrington, Essling, and van Nimwegen (1997) for the companies to improve their profitability. For higher education institutions model has to take into account bigger complexity, as well as the issues of sustainability and development.

Managerial process in this model involves: People Management, Process Management and Performance Management. Students are considered as clients of the university, with their specific needs and expectations. Customer (students) satisfaction (Antony et. al. 2019) is taken as a measure of the output of the system. Concerning approaching students, particular attention in the conception of the quality system is to be paid to the customers wishes and expectations (Gurgu and Cociuban 2017). On the top of the system is general management system built on main policies and supported by a central administrative structure. Human Management resources constitute the second level of thus constructed model. It covers the personnel and the infrastructure, both for education and research. Next level is that of teaching process and learning. It covers management of curricula, as well as activities connected to accreditation, creation of new courses and modernizations of existing ones. In addition, post-learning assistance is also considered. This is a rather complex level, since it requires specific knowledge of all of the phases involved in it and having multiple particularities. The last level is the measurement level, containing internal audits, student's satisfaction and outcomes of educational activities.

In (Brucaj 2019) the case of quality in higher education of Albania has been studied. Particular attention is devoted to the private educational institutions. A specific model for the country is considered based on the literature. The main difficulty identified in this study for the Albanian universities is that they are relatively small and lacking long institutional culture, thus offering many study programs using only limited resources.

## **6. EXAMPLES FROM OTHER COUNTRIES**

Importance of the subject is reflected by the numerous studies in different countries devoted to the subject of our present study.

Thus, in (Stensaker, Hovdhaugen, and Maassen 2019), the relationship between quality management practices and study programme delivery in Norwegian higher education institution has been explored. Base on a large sample of institutions covered by the study, control of the quality relevant for educational activities has been analyzed.

In the study (Jogunola and Varis 2019), the quality of higher education in Finland has been studied from the point of view of students' and institutions' external reputation. The issue is of particular importance for the national higher education system, since Finland recently took into use the tuition fees for international students. Possibilities for particular development of the global brand image are identified and suggest to be used by Finnish universities and universities of applied sciences.

Since many national studies exist for European countries and only few cross-national, in (Alzafari and Ursin 2019) a comparative analyses of the results obtained for different European countries have been performed and reported. The main conclusion drawn from the study is that the countries develop their quality systems based on their own needs and respecting national standards, without having the big picture of the common European area of quality of higher education. Use of the European Foundation for Quality Management (EFQM) excellence model for higher education has been proposed in (Laurett and Mendes 2019). Development of Internal Quality Assurance Systems (ICAS) towards compatibility with EFQM in the case of a Portuguese Higher Education Institution (an Engineering School) was studied in (Santos and da Costa Feliciano 2019). Specific advantages and difficulties within ICAS implementation were identified, as well as ways to overcome them. Further research is required in order to establish the possible ways of the application of EFQM for total quality management in higher education.

In (Khan, Malik, and Janjua 2019) the case of Pakistan has been studied in details, putting the focus on the work-related outcomes. This work provides evidence for the mediating role of job satisfaction and affective commitment in the relationship between TQM practices and employee performance, and it is suggested that TQM practices may act as accelerator to positive work attitudes like job satisfaction, affective commitment and employee performances.

In (Al-Najjar and Jawad 2019) the obstacles for implementation of quality management systems in higher education of Arab countries, particularly in private colleges have been studied. Proposal to the national Ministries of Education and scientific research has been made to straighten the quality through establishing quality improvement boards in different disciplines, both for public and private universities.

Application of Lean Six Sigma (LSS) methodology for assuring quality excellence in Iran higher education institutions have been studied in (Haerizadeh and Sunder M 2019). The work demonstrates how specific theory for excellence in higher education can be put in practice. Study shows how to improve the satisfaction of students and overall rating, simultaneously decreasing the student advice wait time, as well as to increase visibly the enrolment. A conceptual basis for the use of LSS in total quality management of higher education institutions was previously developed in (Sunder M and Antony 2018) and proposed as a tool for testing in the real-life contexts.

Importance of the leadership in assuring quality has been studied in (Parvin 2019) for the case of higher education in Bangladesh.

## **7. SUGGESTIONS FOR THE ESTABLISHMENT OF A TOTAL QUALITY MANAGEMENT SYSTEM**

Some suggestions for total quality management system in Macedonian higher education were given by Taskov and Mitreva (2015). In this work made attempt to propose general framework for building uniform on national level total quality management system for higher education based on experiences of similar countries and taking into account the real possibilities of the country to implement such solutions in near future.

Electronic administrative services are functional on most of the universities in Macedonia, i.e. ikNow at Ss. Cyril and Methodius University in Skopje, e-student at the University for Tourism and Management Skopje etc. They provide a strong basis for development of tools for assessing the customer's satisfaction on an efficient way. Further in-deep studies are required in order to create standardized evaluation process for different higher education institutions having different systems electronic systems and internal organization. As a result, it is expected to obtain satisfactory results for the component of the Performance Management.

Following the experience of other European countries, it is recommended to take into account during the conception all the aspects of harmonization of the national quality system with those of majority of these countries and the trends of development of their quality systems. Further development towards the excellence is to be considered during the conception of the total quality management system. Use of the European Foundation for Quality Management (EFQM) excellence model is to be included in strategic goals.

## **CONCLUSIONS**

The interest for establishing total quality management system for higher education institutions is of paramount importance for modern societies. Responsible state institutions are working on creation of effective institutions for supporting creation of such systems. Researchers are intensively studying various issues connected to the creation of such systems and characterization of existing quality systems.

In Macedonia, substantial changes occurred during last two decades: introduction of Bologna system, establishment of private higher education institutions, accompanied by multiple changes of the respective state regulation. After a period of intensive changes, actual state of the higher educational system is relatively stable, allowing introduction of largely applied quality management system intended to be used in future on long term. On central level, particular role is expected to be played by the higher education Quality Agency, responsible for the accreditation and evaluation of higher education in Macedonia, according the new law. The aim of a total quality management system in higher education is required in order to achieve the goals of the institution in an efficient way, satisfying the needs of the users at reasonable price of the services. It consists of set of activities regularly performed in order to reach the given goals. ISO 9000 standard applies in general to various kinds of organizations. Several specificities are to be taken in the case of higher education.



It has been shown in literature that the basis for total quality management can be formed using business process modeling. Particular attention in creation of the models is to be paid to the satisfaction of graduates. Permanent improvement of performances, leadership and team work have been often also taken into account. Corporate social responsibility in conjunction with effective total quality management system provides a solid basis for sustainable improvement of institution performances. Use of the stakeholder theory in the creation of the model is of particular importance, since the parts involved in the process have substantially different characteristics. Effective system has to produce value for all stakeholders.

Based on the result of this work, it can be concluded that efficient total quality management system for higher education institutions can be established, following models proved to be functional in other countries of the region. Considered managerial process for total quality management system has to include following components: People Management, Process Management and Performance Management. Customers (students) satisfaction is to be taken as a measure for the output of the system. Having that a stable legal environment has been secured, conditions are provided to establish countrywide system for higher education institutions. Having that visible delays in the realisation of the main goals of the new legislation occurred, it is expected this process to take several years.

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