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Total dedication of the top management within the Macedonian higher education institutions

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Abstract

In this paper is given integral methodology for the design of TQM (Total Quality Management) system in higher education institutions and its implementation in practice of higher education, as well as actions to be taken to build a system of quality assurance. The success of the application of TQM strategy depends on the commitment of the academic staff and administration and their motivation. Although the philosophy of total quality management (TQM) is deeply involved in many higher education institutions and business aspects of European and other countries, it is not sufficiently present in the country and other developing countries. Especially critical is the long term point of this philosophy, when results do not come "overnight". Globalization allows creating a European area of higher education in order to facilitate joint knowledge creation and greater mobility of students and academic staff. Thus Europe has become a common space of higher education, the rules and principles designed to work together and to use the common results.

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Keywords: Integral methodology; Total Quality Management system; Higher education institutions

1. Introduction

National Programme for the Development of Education in Macedonia expresses the desire of the state to bring about change in education that will enable compatibility of study programs, recognition and recognition of degrees awarded at all levels of education in European educational space and greater employability in the European labour

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market. The structure of the system of quality assurance in higher education institutions correspond to regulation, although there is a deep gap between management of quality and culture of quality. Higher education institutions are aware of the need to redesign the profile and curriculum and quality of teaching depends primarily responsible for the reassessment of values, attractiveness of an innovative learning environment, and in the highest degree will depend on the leadership of higher education institutions. Macedonian higher education institutions should accept new TQM strategy and implement it in educational processes.

2. Theoretical foundation and related literature

TQM philosophy is embodied in many higher education institutions in the world, and its application means new key change in the approach to the quality of the educational process, according to Kano (1996). The first change concerns the establishment of a process of continuous improvement in all segments of higher education institutions with the involvement of academic staff, and the other, to meet the needs of all users (students, teachers, Ministry of Education, employment and professional bodies, society general and international forum) with the results of the institution. A condition for successful implementation of TQM strategy in higher education institutions is having modern management, particularly strong leadership (Ciampa, 2005). Leadership Initiative includes the top, commitment to TQM philosophy with their active participation, according to academics, penetration of opinions, proactive work style, teamwork, training, support for successful actions and achievements. Spreading the TQM conception in higher education institutions requires a particular social and cultural level of the middle (habits and mentality of employees), infrastructure creation and development of corporate culture in higher education institutions.

3. Methodology

The research is designed as an attempt to depict the existing condition within Ten Macedonian higher education institutions regarding quality system design and implementation, analyzed through 4 polls in the “house of quality” who’s top is the ultimate management, and as its base measurement, evaluation, analyzing and comparison of the quality are used.

3.1. Objectives of the research

This paper presents an analysis regarding the condition of Macedonian higher education institutions through one of the criteria for receiving a European Quality Award in the direction of the activities undertaken in relation to achieve the planned satisfaction of all those who have financial interest in it (Mitreva, 2010).

3.2. Description of the instrument

A special attention has been given to the gathering of the entering data included in the research. As an instrument, there was a questionnaire used that was designed to give an accurate analysis in a manner of complete and correct fulfilling. At the same time, there were some direct contacts made with the top management and the employees in order to depict the authenticity of the questionnaire and to present the realistic condition of the Macedonian higher education institutions. The data received from the research are processed with an adequate mathematical - statistical methods. In this regard, the Pareto analysis was used for frequency as well as for analysis in order to calculate the involvement of certain answers in percentages.

4. Results

4.1. The usage of the internal standardization and quality providing within Macedonian higher education institutions

If the quality system is introduced and certified according the ISO 9001:2008 standard, it means that the higher education institutions will be aware about the values of quality and will be able to operate with it. There is a stiff determination of the top management regarding quality; also there is a defining and organizational culture, documentation for the system and trained individuals as well.

The alerting fact is that only 40% of the examined Macedonian higher education institutions (10) owe a quality system according ISO 9001:2008, which appears as a relatively small figure. The need of training according international standards has forced some of the top managers to implement a quality system. The structure of the higher education institutions that have certified a quality system according ISO 9001:2008 and the assets from its implementation is seen through the following:

- 60% of the Macedonian higher education institutions that have implemented the quality system, see the assets in gaining a better quality of the services, reduction of the total costs, consumers' contentment etc.
- 20% of the examined aim to get ISO certificate hanging on the wall, without real purpose to improve the higher education institutions, to manufacture quality services, and to settle the business processes for a cooperation with the buyers and partners worldwide;
- 20% of the examined that have implemented the quality providing system of services but considered that only serve to realize additional unnecessary expenses and bureaucracy, do not see assets, do not realize the desired advantages on the market, and do not fulfil the demands of ISO 9001 standards.

4.2. The usage of quality methods and techniques within Macedonian higher education institutions

Quality providing methods and techniques are instruments for implementing actions in order to improve quality. Those are integral part of quality management according a defined policy, aims and responsibilities of the higher education institutions, as well as creating comparative advantages on the market. In order to find out if the Macedonian higher education institutions have established a control of processes by achieving defined quality with least costs of working, the question is raised: what type of quality control of services do they practice?

- 60% of the Macedonian higher education institutions have claimed that they possess quality control;
- 30% of them practice 100% control;
- 10% implement statistical control.

The quality as a phenomenon within the Macedonian higher education institutions is at a lowest level because of the bad managing of the business processes, inefficient control, and huge percentage of complaints, which exceeds the permitted one. The reasons are not the deficiencies of modern technology but weak managerial abilities, qualifications and completeness and qualitative leading of business processes.

4.3. Do Macedonian companies learn new things?

In order to get the real picture of the Macedonian higher education institutions, whether they learn and whether they stimulate the individual and collective education in order to improve the outcomes of the organization in a way that is important for all users, there are few questions raised: do those higher education institutions gain additional knowledge?

- 60% of them practice training from time to time at work;
- 20% of them do not practice trainings for gaining additional knowledge;
- only 20% of them have attended a training twice a year that is a minimum of a yearly professional improvement in the era of education.

The alarming is the fact that 20% higher education institutions do not practice training for gaining additional knowledge and a lifelong improvement is the condition for survival on the modern business. Those real indicators show that not attending training on a regular basis is one of the reasons for being uncompetitive at the global market.

4.4. How much is the motivation a significant factor for quality providing?

The motivation of the employees is the most sensitive part of the organizational behavior and is expressed through contentment of the employees. The question how do the companies motivate the employees, the answer that appears most frequently is the increase of payment:

- 70% of the examined have responded that they motivate employees through salary raise;
- 10% of them motivate the employees by bonuses apart from the salary raise;
- 10% of them do it by allowing a development to a higher valued position in the higher education institutions;
- 10% of them motivate the employees using combined and complex methods that are known and accessible to all employees.

The necessity to build a solid system of quality and usage of TQM strategy within Macedonian higher education institutions would be realized only by building a system for motivation as a consisting part of the house of quality, and this refers to: integrity of motivation factors, as measure for stimulation and strategies that will systematically and planned incorporate within the working and organizational activities, in order to motivate the employees. But in order to achieve that, the top management needs to:

- attract and maintain the most quality personnel;
- provide a quality realization of the undertaken tasks;
- stimulate creativity and innovativeness;
- provide an identification of the employees with the higher education institution and their engagement in its constant development.

4.5. How to manage the quality costs within Macedonian higher education institutions?

Quality costs appear because of existence or a possibility of a bad quality. The question whether Macedonian higher education institutions make analysis for quality costs (complains, reclamations, discarded products etc), the gained results refer to the following:

- 30% of them make analysis of costs in terms of quality;
- 70% of them set the analysis to a checkup of complains of consumers, without analysis of the discarded, no checkup of its origin and reasons.

All of this leads to a major loss, not realizing of planned financial outcome, loss of respect, loss of additional time and material for corrections.

5. Discussions

The practice within Macedonian higher education institutions refers to the fact that they do not pay attention to the analysis of costs for quality because of their lack of knowledge therefore the services are not competitive enough at the market. In this paper we make an effort to, using the principles of TQM, develop a universal, integrated methodology for design and implementation of TQM system in higher education, Mitreva (2010). This methodology should help to give useful guidance to all higher education institutions tend to be educational institutions "world class".

6. Integral methodology for designing and implementing TQM system within Macedonian higher education institutions

The need of redesign or reengineering can occur in educational institutions who want to leave the traditional approach by introducing a new, modern approach to education and science. Both approaches are based on the same

tenets: competence, ability and knowledge, but they are applied differently according to the country's technological development and higher education systems therein.

Although the philosophy of total quality management (TQM) is deeply involved in many higher education institutions and business aspects of European and other countries, it is not sufficiently present in the country and other developing countries. Especially critical is the long term point of this philosophy, when results do not come "overnight". Globalization allows creating a European area of higher education in order to facilitate joint knowledge creation and greater mobility of students and academic staff. Thus Europe has become a common space of higher education, the rules and principles designed to work together and to use the common results.

In this paper is given integral methodology for the design of TQM (Total Quality Management) system in higher education institutions and its implementation in practice of higher education, as well as actions to be taken to build a system of quality assurance. The success of the application of TQM strategy depends on the commitment of the academic staff and administration and their motivation.

Integral methodology for designing and implementing TQM system, as suggested in this paper, consists of more methodologies Mitreva (2010): Methodology for subsystem-internal standardization; Methodology for subsystem-Statistical Process Control (SPC); Methodology for analysis of total cost of a given process; Methodology for subsystem-education; Methodology about evaluating the success of the designed and implemented system in TQM (Audit). Basis in creating this model is redesign, after that, it starts a new phase of business-continuous improvement, or turning round Deming quality (Plan-Do-Check-Act).

6.1. Methodology for subsystem - internal standardization

Each institution builds its own quality assurance system in accordance with the teaching - educational field that nurtures and under the conditions in which it is performed, and within the European standards for higher education. Working under the acts that defines all procedures of teaching - educational and scientific - research and obligations and responsibilities of all employees. The development flow of the design and implementation process of internal standardization is carried out through the following activities.

(Plan) 1 step: Plan for designing and implementing of the subsystem- internal standardization.

2 step: Election of team members.

3 step: Education of the team members of the system for designing and implementation of quality providing within higher education.

4 step: Designing of SOP (Standard Operative Procedures) according the actual condition into the higher educational institution through preparation of a number of documents that will be useful to the employees in the higher education, the students and the society.

The best way to depict the SOP with a block diagram in which every phase of the educational process will be marked, then the people that perform the activities as well as the incoming and outgoing documentation. In this way each lack can be seen and therefore able to react immediately into the eliminating them. The block diagram is the most simple and most practical manner of describing the business process.

5 step: Examining the possibilities for improvement of quality and efficiency of the processes.

6 step: Establishing the control points of the processes where the data could be collected.

7 step: Defining of documents – incoming and outgoing in each process.

(Do) 8 step: Usage of the gained competences and experience into the implementation of the designed subsystem for standardization.

The processes ought to be done in accordance with the provided conditions and we-llplanned optimal exploitation of all resources. The checkup (evaluation) is organized inside the institution (self-evaluation) and out of the institution by the Evaluation Agency.

(Check) 9 step: Checkup and evaluation of the outcomes of the newly implemented SOP.

(Act) 10 step: Assessing the necessity of corrective gauges.

The Commission for self-evaluation is appointed to make a critical analyzing of the institution, to submit a report to the management board and then in a role of monitoring request an implementation of its their own suggestions and remarks into the problem-solving of the failures meaning to remove the obstacles into providing the planned

quality. After adopting four of the given activities in the circle of qualities they need to be used in practice though continuously. That refers to the adopting of standards, SOP and normative for all processes into the higher education and research by which the levels of possible measuring and achievement will be described.

The very first circle for providing quality is the hardest and most durable because it is linked with building the infrastructure, creating legislation, academic training for conduction of self-evaluation and external evaluation processes in a lack of professional experience towards that. Checking (assessment) is organized within the institution (self-evaluation) and out of the institution by the Agency for evaluation.

6.2. Methodology for subsystem - Statistical Process Control (SPC)

Measuring the quality of the educational process is carried out by applying appropriate methods and techniques, which provide data collection and information about the current situation. Based on the data and information evaluated basic level indicators work and selected problems that require special attention. The ongoing construction of the subsystem of statistical process control is carried out through the following activities.

(Plan) 1 step: Plan for designing and implementing the subsystem for statistical process control.

2 step: Team members selection.

3 step: Training of the team members on the methods and techniques for providing quality.

(Do) 4 step: Application of different methods and techniques for a given task and established aim into the higher educational institution. The usage of the software packages as a fast and easy to use is even more emphasized

5 step: Preparation of forms for SPC data collection.

6 step: Designing a subsystem for SPC within a higher educational institution.

Within the subsystem for SPC managing in an institution the following ought to be defined:

- what needs to be controlled;
- where will the outcomes be collected, filed and analyzed;
- persons appointed for collecting, filing and analyzing of results;
- manner of presentation of outcomes,
- the path of the outcomes;
- establishing and realization of policies for quality checkup;
- preparation, operationalising and realization of the plan and programme for quality checkup;
- determining and realization of the manner, procedure and the means for quality control in education.

(Check) 7 step: Checkup and evaluation of the effect of SPC usage.

(Act) 8 step: Evaluation of the necessity of corrective measures within the designed SPC subsystem

And the circle starts spinning again.

6.3. Methodology for analysis of total cost of a given process

TQM strategy requires quality management processes, and management costs. The methodology of the cost can be used for any process in the higher education institution. Management with total amount of costs is done in few steps:

(Plan) 1 step: Plan for designing and implementing the subsystem for quality costs.

2 step: Selection of team members.

3 step: Establishing teams and their education for different possibilities (methods) for costs analyses.

Often, the software solutions for optimization of educational processes meaning a work performance with least costs are used.

(Do) 4 step: Usage of different methods for analyzing of total amount of costs within a process in a higher educational institution.

5 step: Preparation of a proper documentation for a simplified usage of methods for costs analyses.

6 step: Designing a subsystem for cost analyses.

(Check) 7 step: Checkup and evaluation of the effects of the implemented subsystem.

Analysis of the outcomes is done with a revision of the starting relation of the costs of adjustment and discrepancy in the business process.

(Act) 8 step: Assessment of the necessity of corrective measures.

6.4. Methodology for subsystem – Education

The system providing total quality management should not only be designed well but it is necessary its consistent implementation in practice. It is therefore necessary continuing education, training, management and academic staff, training of students and the administration and application of Deming circle of quality. The educational process need to me dome through a usage of a quality circle in few steps:

(Plan) 1 step: Plan for education/training of the academic and administrative staff.

2 step: Election of teaching staff (experts, specialists) from the employees or externally in order to realize the training.

3 step: Election of participants in the training- employees from different sectors and schools/ departments.

(Do) 4 step: Realization of the course.

(**Check)** 5 step: Competence checkup.

(Act) 6 step: Amending the programme for education and training.

As with the new amendments the second quality circle begins (Plan-Do-Check-Act). This working mode continues spirally in direction of a constant improvement in all functions of the work performance within a given institution of higher education.

6.5. Methodology for evaluating the results of the implemented system and projected on TQM (Audit)

The purpose of the fifth stage - control is the assessment and monitoring of the results of previous stages. The process procedure of the checkup is done through the following activities:

(Plan) 1 step: Plan for evaluating the success of the designed and implemented TQM system.

2 step: Election of the evaluation board.

3 step: Training of the evaluation board.

4 step: Preparation and analyzing the needs, standards and documentation that is necessary for the assessment.

(Do) 5 step: Evaluating the educational institution regarding the success of the designed TQM system.

(Check) 6 step: Processing and analyses of the outcomes.

The results are to present: what have the higher educational institution achieved and the possibilities present how those results have been achieved.

(Act) 7 step: Submitting a report from the evaluation to the top management in cased of undertaking corrective measures.

The integral methodology for designing and implementing of TQM system has a feedback as a result of the necessity of permanent improvement of the educational processes. In order for this methodology to be efficient, it is necessary to implement an information technology. At this stage of verifying and modifying the system to create new rules, procedures, instructions to staff and other norms of operation.

7. Conclusions

The model - methodology proposed by (Mitreva 2010) is an integral and universal meaning that it is applicable to all higher education institutions, regardless of their nature, and the success of its application depends if it is only achieved integration of information technology with the internal standardization, methods and techniques for improving quality, system cost analysis, but with continuing education and motivation of employees. Integral methodology for designing and implementing TQM system has feedback as a result of the necessity of ongoing improvement of educational processes. By repeating or spiral repetition of such cycles will see the benefits of the application by changing the organizational culture to such initiatives and an incentive to higher goals of excellence.

This methodology not only a success in the implementation of the improvement of educational processes in Macedonian higher education institutions, but to raise awareness of the academic staff and administration for their quality and focus on increasing the satisfaction of students, teachers, Ministry of Education and Science the

employment and professional bodies, society in general and international forum. But without the support of leadership and without the involvement of academic staff, all efforts to improve will be in vain.

Benefits of the methodology for designing and implementing TQM in higher education system are:

- the application of internal standardization improves responsibility of academic staff in the implementation and administration of the educational process;
- the application of statistical methods and techniques to ensure the quality of education;
- application software packages increases performance in the application of statistical methods;
- by analyzing the cost of quality can be controlled losses and to reduce them to the minimum.

Besides these other important effects are expected to be achieved, such as:

- involvement of all employees in achieving the quality of the educational process;
- employee commitment to improving the quality of education;
- full commitment of top management to the system in TQM and its continuous improvement;
- ability to solve problems at all levels;
- small but significant improvements in educational processes and services;
- optimization of the educational process.

Without the commitment of top management to set goals for the quality of the educational process and consistency in their implementation, these efforts will only be spending time and money, while at the same time will reduce the possibility of following such a successful initiative. The benefits of implementing this model not only increase the commitment of top management and academic staff to improve the educational process, but achieving satisfaction of students, parents, teachers and society, we will continue to serve as the driving force for continuous improvement. However, the conclusion remains that there is a clear determination of the Macedonian higher education institutions for the care and responsibility for ensuring and improving the quality of education, and thus increased the interest for cooperation with universities in the country, the region and Europe.

References

Beardwell, I., Holden, L., Claydon, T. (2004). Human Resource Management; A Contemporary Approach, Prentice Hall, Fourth Edition, 124-387.

Ciampa, D. (2005). Almost Ready: How Leaders Move Up, *Harvard Business Review* 83, 1.

Chepjunoska, V., and Donevski, B. (2005). *Quality Assurance in Higher Education - A view from Macedonia*, Skopje - Bitola, 39-150.

Davenport, T. H., and Prusak, L. (1998). Working Knowledge: How Organizations Manage What They Know. Harvard Business Scholl Press, Boston Massachusetts, 5-60.

EFQM. (1992). *Total Quality Management: The European Model for Self-Appraisal*, European Foundation for Quality Management.

Harung, H.S. (1996). A world-leading learning organization: A case study of Tomra Systems, Oslo, Norway. *The Learning Organization: an International Journal*, 3, 22-34.

Ishikawa, K. (1995). President Touka Henkau Sozo Gakkai, Thoughts on risk management "Creativity and risk management, *JUSE, Societas Qualitatis,* 9, 5.

Juran, J. M. (1988). *Juran on Planning for Quality*, Free Press, New York, NY.

Kano, N. (1996). Business Strategies for the 21 sr Century and Attractive Quality Creation, *ICQ, Yokohama*, 105.

Mitreva, E. (2010). *Integral Methodology for Designing and Implementing of TQM Systems within Companies*, Bigoss, Skopje.

Mitreva, E., (2011). Model-integral methodology for successful designing and implementing of TQM system in Macedonian companies. *International Journal for Quality Research*, 5, 255-260.

Mitreva, E., and Filiposki, O. (2012). Proposal methodology of the subsystem-internal standardization as part of TQM system. *International Journal for Quality Research*, 6, 251-258.

Mitreva, E., Jakovlev, Z., Koteski, C., Kitanov, V., Angelkova, T. (2012). Analysis of the existing management system in Macedonian companies and the necessity of accepting the TQM philosophy", *International Journal of Pure and Applied Sciences and Technology*, 8, 54-63.

Mitreva, E. (2013). The superior customer's value of the new economy implemented within Macedonian companies. *International Journal for Quality Research,* 7, 215-220.

McHenry, J. E. H., and Husvik, G. C. (1997). Continuous Improvement and Types of Learning in Organizations, *41 st EOQ Congress*, Trondheim, Norway, 1, 103.

National Programme for Development of Education 2005-2015, (2006), http://www.npro.edu.mk/, 12.08.2013.

Oakland, S. J. (2003). *Total Quality Management.* Text with cases, (3rd Edition). Elsevier Butterworth-Heinemann, Oxford, Burlington, 319.

Prodanovska, V., and Mitreva, E., (2012). Incorporation, authorization and encouragement of the employees in order to improve the quality of the educational process. *In: Two decades of academic teaching, 18-19 June*; Timişoara.

Woodall, J., and Winstanley, D. (1998). *Management development: Purposes, processes and prerequisites. In Management development: Strategy and practice.* Oxford: Blackwell, 3-17.