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The Importance of Quality Management System of the High Education and Corelation with ISO 9000 Standards

Abstract: *The modern concept of quality management understands construction and implementation of an internal system of organization, respectively of a system of the quality management (QMS). This means arranging the business system which treats the quality trough all aspects of making the business and by which the organization is directed by the demands of its users. This again comes from the definition itself of the quality as an assembly of all features and characteristics of a product and of the services which satisfy for the best the users needs. In other words, the traditional thought that the quality is defined from "up side", and that it expresses an expert opinion, is the matter of past in all the fields of work and business. The quality must be related to users function, respectively to users satisfaction. From this trends are not exempted neither the higher education institutions, since the Bologna model of the higher education organization dedicates an important part to the quality management. Related to that, numerous reports, analyses and discussions, carried out in the framework of actual reform, show that the important changes of existing state are necessary, in view of the organization and advancement of higher education. In the work are assumed the experiences of the international quality standards in higher education institutions, considering the significant specific particularity of our high education reality. The former can help the more efficient adaptation to the demands of the Bologna process.*

Keywords: *Quality, University, Bologna process, QMS, ISO 9000*

1. INTRODUCTION

It is generally known that in the work of the higher education institutions in B&H, few care was taken about the interests of the users of their services. In creating the broad spectre of higher education services they were guided exclusively by own conception of the quality, and they often made by themselves the explication of the users needs, regardless the wishes of

the later. So the business systems of higher education institutions arose (the universities, faculties, colleges and academies) which very slowly responded to the actual society demands and to any other impulse from the surrounding. By such an ignorant attitude and neglecting the users demand, an unfavourable ambient was created for improvement of the higher education

services. That is why it can be certainly stated the impossibility to achieve in that situation the positive changes of higher education institution work, or, if they sometimes have been achieved, it was in a wrong way. It is evident today that such an access to projecting and doing the higher education services was completely opposite to modern theory of ruling the quality. That is why the higher education institutions all over the world, guided by the experiences of production organizations, and confronted with coming changes and practical problems of own functioning, searched an answer to the trends and yet coming problems in focusing themselves to the quality. It meant the initialisation of the programmes of introducing the quality systems according to some of existing models. It became very clear that, as any other organization system, the higher education institutions need to ground their work and function on introducing the modern and efficient aiming to insure their missions, work efficiency and improvement. It is natural that in the national systems of higher education in all countries of the world, there exist a clear legislative regulation, assuring the construction of certain elements of the quality system and the criteria for accreditation of higher education programmes and institutions. However, even partial analysis of it in B&H, demonstrates inexistence of the key principles of ruling the quality, being based on systematic and process access, improvement programmes and users satisfaction. The quality assurance at the University of Zenica is actually based on the Law on Higher Education and the Law on University of Zenica since 2005, as well as on the University Rules and on the rights of university individual members. As those legal solutions are applied since the middle of this year, they are not entirely implemented in a practical academic work. That is why, in view of assuring and ruling the quality, are still applied the legal regulative on higher education which are based mainly on its version before the war. Partial survey of the Law on the universities before the war and of the after war's Law on High Education and Scientific Research activity in Zenica – Doboj Canton, and of more important internal acts of individual higher school institutions (the

Rules, Decisions, and Guidelines) can bring to a conclusion that they represent only an appropriate base for establishing of a system of ruling the quality, but they are not in accord with international standards in this field even if by this legal regulative the larger number of demands are precised which concern effectuation the activities of higher education and Scientific – research work, still it is evident that demands of quality and its improvement are only partially and abstractly defined. The confirmation of such an attitude can be find in a part of legal regulative which speaks about the foundation of the higher education institutions. The practice demonstrates that today in higher education at whatever level, there does not exist a legislative or a procedural mechanism which would assure the unity of academic standards or which would permit a comparative estimation of the work of academic institutions. At the same time, by such a regulative. The faculties are treated like legally authorised institutions, having financial and academic autonomy (by accepting the Bologna process this will be overcome), so that they adapted different procedures and standards of registration and lecturing for students, different salaries and procedures of personnel employment (even in the framework of the same university). Such a regulative leads to no efficient planning and superficial activities at the university basis. By it, the mobility is blocked too, partially in the framework of same university, because the students and teachers are slicked to faculties. Finally, all this is making weaker the position and external relations of higher education institutions. By that, the result is a high price paid in view of losing the quality, efficiency, responsibility and the states and international recognition and cooperation. That is why it is necessary to establish a modern, efficient quality system in which cocoon “the quality will mature”. By adapting the Bologna Declaration, which was accepted by all the signers countries as an official higher education policy and the goal, by almost all European countries in view of the organization and improvement of the quality of higher education, yet bigger interest have arose to apply known and recognised quality models and programmes. The University

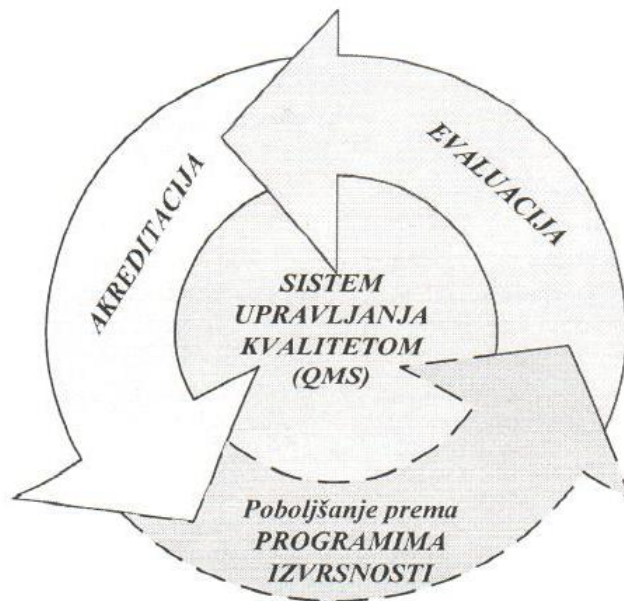


Figure 1. Integration of indispensable elements of continual improvement of the quality in a higher

of Zenica, as the most recent higher education institution of this type in B&H, accepted the challenge of developing the system of ruling the quality, based on the experience of one its member and of new legal regulations which regulate this field. The positive experiences of the Faculty of Mechanical Engineering in the implementation and certification of the ruling the quality system according to ISO 9001:2000 helped to create the institutional plan and further system development to assure and rule the quality at the University of Zenica. Although before its full implementation and establishment of QMS in whole University some time will pass yet, the strategic orientation alone indicates that the university is aware of the need for better definition and institutional improvement of the system of the quality assurance, respectively of the better ruling the quality in own high education work, and it is a reason why effort is made to introduce it.

2. BASICALLY ABOUT QMS IN HIGH EDUCATION

It is generally known that today various kinds of the evaluations and accreditations are considered as the basic elements of ruling the quality in higher education. However, variety

of evaluation and accreditation programmes of some EU and world countries makes importantly difficult an establishment of unified quality standards in higher education and a comparability of accredited courses, plans, programmes, or the institutions, as well as the mobility of the students and lecturing personnel. The cited elements are the key parameters of the development and of quality improvement in higher education, so in last decades important efforts are visible all over the world, specially in European Education Space, on making common criteria and methodologies of ruling the quality. By accepting the Bologna declaration a very big step forward is made in view of the harmonisation of the accrediting the higher education institution, but, for entire process implementation, together with forming the indispensable legal suppositions at each joined state level, it is necessary that each higher education institution creates an efficient system of quality management. Such a system use to be based on the standardising of all managing and other work processes, with basic sense creativity stimulation and participation of all participants in creating the stable, efficient and concurrent university surrounding. The system of quality management use to be permanently developed from an internal evaluation until an international accreditation and that be along

with modern achievements and development trends of cognitions on the quality. Their mutual relation can be illustrated by figure 1.

The quality management system, as a sub system of a business or organization system, does the integration of an organization structure, a responsibility, a procedure, a process and the resources to realize a ruling the quality. It does understand that such a system must assure the quality of the organization in all its segments, and not only the quality of the products or services. Historic presentation of the development of various quality conceptions demonstrates that, at actual development level of the consciousness about the quality, present is the concept the quality management system, shortened it is QMS. The philosophy of an integral reviewing the quality leads to a cognition that in reality ruling the quality can be considered as the ruling the organization. From an aspect of higher education, and based on previous definitions, the quality management represents a part, respectively a sub system of entire university system, and it encompasses a series of the processes and resources which are functioning in harmony to achieve the planned results. That is why each higher education institution (university, faculty, college, academy, institute) can be presented as a system which represents an ensemble of mutually depending processes (lecturing, research, support processes) which are functioning together and which, by using various resources (personnel, buildings, books, laboratories, financial and other resources), realise the planned result in education and research. By an integration of these elements the quality management system is established in the higher education institutions.(Maksimovic, 2005)

Consequently, a quality management system is related to curriculum, the ways and methods of lecturing, the literature, the choice, competence and pedagogical values of the lecturers and collaborators, hardware/software, library and laboratory resources, the organization of lecturing and research, the processes of bringing the decisions, the ruling the total resources, the registration policy, the informatics system, the way of following and

improving the established system and other elements of a higher education organization. Summarising the opinions of major part of the theoreticians and practice in this field and the empiric experiences of many organizations, as well as the own experiences of the Faculty of Mechanical Engineering in Zenica, since the accreditation until the establishing of a quality management system and until its further enlarging according to the TQM programmes, the academic institutions use to apply the generally known and confirmed methodology, and such one is contained in the standard ISO 9000. Its newest version ISO 9001:2000 and the process model which promotes this standard is equally valuable and it is applicable for different types of production and service organizations, the administration, the state governing, the banks, the hospitals, schools, faculties or other kinds of organizations and institutions.

Together with other principles of ISO 9000 concept, it is to be understood only as a framework or a general instruction, by help of which for each particular case own model of ruling the quality should be developed. For the needs of their work, and analysing the higher education space in B&H and based on presented graphic solution in the standard ISO 9001:2000, a complete systematic process model is developed of ruling the quality in higher education. Its graphic interpretation is presented in figure 2. In the presented figure horizontal and vertical integration of all processes is visible inside the higher education institutions. Four key processes are indicated according to their signs and demands and chapters of the standard which describes a chosen model, while inside of them the key elements are identifies of the quality management system in the higher education institutions.

3. COMPARATIVE RATIO OF THE BOLOGNA PROCESS DEMAND AND ISO 9001:2000 MODEL

Through a partial review of development of the idea of the establishing the unified European high education area, some key determinants can be induced which are important for choosing the

model and establishing the quality management system in higher education institutions. At the figure 2 is represented the ratio and similarity of particular regulations and demand's

They are contained in what follows:

- ◆ Assurance and management of the quality is one of key high positioned goals of the Bologna process and of establishing the EHEA,
- ◆ Aiming to assure and to manage the quality, each institution of higher education has to define, establish and further develop its own, internal mechanisms and programmes for that goal. In other words, each institution has to raise and apply its own, internal quality management system, the implementation of which will assure the quality of higher education services and its efficient managing.
- ◆ Established internal system of quality management must be directly connected with external evaluations and assessments by independent corps and agencies.

The previous consideration shows that the choice and establishment of a model of the quality management at the University, according to ISO 9001:2000, is in entire accordance with the regulations of the Bologna process in the segment of assuring and ruling the quality. At the same time, a very short comparative analyse, and partial too, of particular elements which are the object of Bologna process regulations and of the ISO 9001:2000 standard's demands, shows a high degree of similarity or even their entire equality.

Cited comparative demonstration oh similarity of particular elements of Bologna process and international standard ISO 9001:2000 shows that they have basically same final goal. Simply told, that goal is achievement high quality working process at the higher education institutions through an organized, systematic and standardised access. That is why the chosen model, as well as known and recognized methodology, but also due to a series of other reasons, a guaranteed good choice, reliable and efficient method of satisfying the

users and modern trends in higher education. (Plancic, 2006)

4. STRATEGIC STEPS AND DIRECTIONS OF FURTHER ACTIVITIES IN THE DEVELOPMENT OF QMS

Already before is enhanced that first, most important, but minimal too previous condition to establish the culture of quality at any higher education institution, and with that at a university too, is building an adequate and efficient quality management system. In this way the strategic steps and all following activities in the establishing of the quality culture cope with the strategic steps in developing the assurance system and quality management. That is why, by the decision alone and by constituting of the project of implementation of the quality management system according to standardised ISO 9001:2000 model, defined are the key steps, respectively the phases of its realisation, and with that the activities too on raising the quality culture in an university environment. The key phases and directions of further activities on entire implementation of QMS at the University can be cited as follows:

- defining the vision, mission, clear and precise quality policy, as well as short termed and long termed goals and the activities which enable the realisation of them. These elements must be accepted by whole leadership and all the employees ("the quality is the job and responsibility of all employed personnel")
- The change and adaptation of the organization structure to make institutional the care about the quality, and by that made divided the competences, authorisations and jobs connected with the quality.
- defining the roles and tasks, respectively the distribution of the competences and responsibilities in the assurance system at different levels,
- creating the documentation of the system of assurance and quality management, by which the best praxis applied solutions

BOLOGNA PROCESS	STANDARD ISO 9001:2000
◆ establish the EHEA and clearly define the position and role of each higher education institution in it,	◆ define the vision and mission of a higher education institution, as well as the quality policy
◆ assure the mobility of students, lecturing and administrative personnel through compatible curriculum and clear definition of imputes, outputs and mutual relations inside an institution and EHEA	◆ define the key and other own processes, their inputs, outputs and mutual relations inside the higher education institution and related to the surrounding,
◆ put in accord the standards and outputs of higher education institutions aiming their mutual recognition,	◆ define the goals of quality, plan their realisation and continuously re-examine them,
◆ assure corresponding resources to realise the principles of Bologna process	◆ assure necessary resources to realise defined goals and processes,
◆ define and establish the obligations, responsibilities and rules of the behaviour of all participants in higher education in a way of corresponding curriculum and of the credit system (ECTS) of evaluation, as well as corresponding models of following the progress of the students, lecturing and administrative personnel,	◆ define and establish the competences, responsibilities and rules of behaviour of all participants inside each identified process in a way of corresponding documentation,
◆ assure equal standards, easily understandable and comparable diplomas, to realise pass ability and equilibrate quality of higher education system,	◆ establish a system of collecting the information from the process and from the service users, as well as adequate methods of their satisfaction measurement, aiming continuous improvement of whole higher education activity,
◆ assure and promote whole life learning	◆ plan and perform continuous qualifying and additional education with the proves of their realisation
◆ do accreditation of curricula and programmes and higher education institution	◆ Certify the system of the quality management

Figure 2. Parallel demonstration of similarity of the more important elements of Bologna process

are standardised in higher education process. The former use to assure the definition and autoimmunization of university activities and operations, the identification of the quality problem,

as well as their correction, permanent improvements and perfection of the results achieved by academic institutions in a systematic way. The documentation is an efficient means by introducing new

- employees in higher education process, and by its application is facilitated the carrying out the lecturing and research in a road mapped direction,
- spreading the quality culture in academic and non academic public milieu through the marketing activity, the analyse of existing system acting, bringing out and synthesis local and foreign experiences and continuous public discussions, lecturing, assembles, conferences seminars, or the workshops dedicate to the quality, along with getting acknowledged all employees with defined quality policy, the goals, organization structure and with whole system of the quality management,
 - institutional including the students in all phases of deciding and forming the institutional communication models, to provide continual assuring of the feed back information from the users of higher education services, taking account of their suggestions, proposals or critics, and based on this manageable working process,
 - regular analyse of the registration policy at the University based on the needs of the society, economy, institution capacity, study price, respecting general strategy determination;
 - to define the procedures of evaluating and to get acknowledged in right time all the participants with the rules while the procedure is in course too,
 - to develop and gradually introduce an effective model of recognizing and awarding the excellence and achievements of the lecturing personnel and the students as well,
 - periodic and continuous effectuation of evaluation of the institutions, the curriculum, the lecturing, the university lecturers, the students and other indicators of the quality, then to compare and optimize in course all the university activities.

By the realisation of previously cited phases at the integral University, the good practice is realised and prevented are the deletes,

the uncertainness, the bribe, the corruption and other negativities which cause discontent with provided service, and in that way is assured the behaviour of all the employees according to established (documented) rules and norms of behaving. Procedural regulations of the behaviour of all employees precisely state the competences and responsibilities for particular activities and processes, and by established mechanisms of checking and supervising of the processes it is precisely assured who and what is he doing, how, when and why is he doing. With that it is to be expected the establishment of a better collaboration among the lecturing personnel, support and the students, because the quality management system is a link in this partnership.

In the middle of 2006. year at the University of Zenica, at every faculties were opened cell for quality (QA manager, faculty management, teacher's, other staff, students) and at the University level Department of QMS was opened. At the head of this department manager for QMS was appointed and whole office was equipped in the Rector's building. This manager together with vice-rector for science and development are responsible for QMS system implementation with Quality Cells (units) inside every department-faculty. (Petkovic, 2006)

5. CONCLUSION

The quality assurance and managing system understands an establishment of the standard and transparent procedures, conceived in the way to contribute to the realisation of certain goals and the mission of any organization, and with that of the high education institution too. That is why the establishment of the quality management system can be regarded as a basic and first more serious step of the promoting, raising and further development of the quality infrastructure inside certain higher education institution. Universality of the subjected model and practical experiences of its application are the decisive factors for its implementation at an integrated university too which promotes the bologna process. At the same time, such an access, besides it is conforming to given principles

of the Bologna process, it provides more simple application and easier implementation of the principles of quality management, the standardisation and harmonisation in view of the level of the efforts done to assure and manage the quality at whole university, respectively in all of its members, but also ever more needed rationality of the organization and decreasing of total resources indispensable for any developing activity in the field of higher education. In a strategic way with that the care for the quality is institutionalized at the highest level of academic organizing, consequently the further activities on promoting and establishing the quality culture in the field of higher education can be carried out at the same time and in the framework of the development of the quality management system at the university. One example of establishing such a system is presented in this work. The positive experiences of its application for many higher education institution can, first of all, delete the unclearness connected with the choice of an

adequate programme of the quality management, as well as with more present dilemmas and fears linked to entering the programme of establishing the quality management system, but also importantly facilitate the efforts on its practical realization. In that way they will adequately react on actual trends in European higher education area, which is the condition of their surviving and inevitable development question.

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