

Peculiarities of Education Quality Assurance in Lithuania

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Abstract

Achievement of objectives of education and training is one of significant factors influencing quality of life. Higher education institutions use different work, teaching methods and tools; however they are inadequate in many cases. Today higher education institutions have problems concerning sustention and rise of certain level of education by giving the job for graduates, using of new technologies that help to present, manage, evaluate and control knowledge. The main objectives of quality management system (QMS) at higher education institutions are as follow: to assure continuous improvement of education quality; to demonstrate performance results and relevant facts to the interested parties (customers of college or university, social partners, administrative institutions) showing the abilities of education institution to prepare high qualification specialists that fully correspond to changing requirements of labour market.

The QMS at education institutions should be designed as continuous process, considering that the quality of final product is the result achieved in primary processes. The process shall involve all interested parties. Parameters and indicators of education quality can help to analyze the efficiency and effectiveness of existing QMS. The results of quality audits should be also taken into account when designing and implementing QMS at organization.

Literature review showed that for the assurance of education quality three different approaches prevail: total quality management (TQM); requirements of quality awards and assessment models; and QMS corresponding to the requirements of ISO 9001 standard. The case study of QMS design and implementation at Vilnius Law and Business College is presented in the paper. The peculiarities, difficulties and obstacles of QMS implementation in the higher educations institutions are analysed in more detail in this article.

Key Words: Quality in Education, Quality Management, TQM, ISO 9001

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1. Introduction

During global economic integration quality became one of the most important factors for survival and success of organizations. European Union's Programme for Quality considers quality as the tool for strategies for European organizations. In the period of European integration quality becomes important for Lithuanian business and service companies, as well as for higher education institutions. Quality determines efficiency of public sector organizations, economic stability of the country and quality of life of society members. Quality of life is each individual's subjective gauge by which they evaluate their life, encompassing their physical and psychological well-being, social and spiritual factors, their level of independence, and ties to the community. Quality of life is also determined by: (1) material status (the quality of commodities, services, home, economic quality, work and recreation conditions, average income, purchasing power, etc.); (2) environmental surrounds and the development of the economy in relation to the exploitation of natural resources, sustainable development; (3) community health; (4) the moral and psychological climate one finds oneself in; (5) personal security (body, legal, social); (6) self-expression possibilities; (7) *levels and quality of education* (Ruzevicius, 2005b).

The aim of this study is to show the importance of quality, TQM and QMS in the economics and social field and to highlight peculiarities, problems and interferences of education quality improvement at universities and colleges. *Methodology* - this article is prepared using scientific and methodological literature together with analysis and summary education practice at universities and colleges of Lithuania.

2. Quality In Higher Education

Organisations, movements and initiatives are being created in Europe and throughout the world that seek to guarantee the quality of higher education (the declaration from the UNESCO World Higher Education Conference in 1998, the 1997 Lisbon Convention on the Recognition of Qualifications concerning Higher Education in the European Region, the Salamanca Convention and Declaration, the Bologna Process, the ideas promoted by the European Network for Quality Assurance in Higher Education, etc.). The international agreements and documents mentioned above, along with the ever-changing higher education environment (rising demands of organisations and the public concerning the quality of education, changing student and employer expectations regarding study content and methods, growing financial pressure in the public sector, growing competition among universities, and the internationalisation and globalisation of higher education) not only encourage but force organizations to search for new systematic measures for the improvement and management of the

quality of education.

The main mission of a university education is to satisfy an individual's and society's requirements for the development of knowledge and the assurance that these requirements are in keeping with the highest levels of competency. In order to realise their mission, universities seek to fulfil the following tasks: to prepare highly-skilled employees that will be able to meet all reasonable demands as required in the workplace; to foster public spirit and encourage active involvement in society; to build, deepen and spread knowledge through research; to help understand, interpret, protect, strengthen, support and spread national, regional, international and historical cultural values; to help protect and strengthen social and humanitarian values; and to contribute to the development of education at all levels, including further training of lecturers.

There can be several possibilities improving and assuring quality at universities:

- To implement and use study quality indicators that can be found after the comprehensive analysis what are the priorities of university.
- To implement quality assurance system and delegate responsible for quality from top level managers. Then quality policy of university and standards for study organization processes, resources and results of processes should be created according to the policy. The system for maintenance of these standards that is the process of internal audit, the order of correction and prevention registration and fulfilment, the process of documents management and the process of continuous maintenance of quality policy should be implemented.
- To form quality culture assuring contribution of all employees in creation of high quality of education. Then permanent endeavours of organization are needed forming such principles of performance: creation of organization's community and employees identification with university; students' involvement into study quality improvement; fixing quality culture with internal relations, division of responsibilities, systematic change management; creation of processes and standards for quality maintenance; determination of important information of organization and its systemic gathering and analysis; involvement of all interested parties of organization; encouragement of systematic and periodical self-analysis seeking to find areas for improvement; assurance of revision of strategy with reference to results of self-analysis.

At higher education institutions the main principles and methods of TQM, models regarding quality requirements and evaluation, as well as QMS that meet international standard ISO 9001 requirements are most widely implemented (Dahlgaard *et al.*, 1998; Walsch *et al.*, 2002; Ruzevicius, 2005 a, b, c). The following summary comes from the quality management models, principles, methods applied and analysis done at universities in Europe and North America (Adomaitiene *et al.*, 2002). TQM principles can be successfully applied in universities to improve the quality of administration tasks, studies and processes. Improvement

of quality of administration at higher education institutions is one of the most important demands and needs to be met in order to satisfy the needs of clients and society at large, as well as to realise the goals of universities. However, the first step in this process is the widespread introduction of TQM concepts and methodologies within the whole organisation, as well as the formation of a new quality culture.

Most universities chose to implement the ISO 9001 quality management system for internal reasons, it is less often the case that the university's social partners would require its implementation, or that the organisation is seeking to adjust to significant changes in the market. The experiences of other universities show that ISO 9000 series standards and TQM can be combined. In this way, the ISO 9001 standard model (and especially the version reviewed in 2000) can be used as a base from which an organisation's continuous quality improvement concept and methodology can be further developed. In general being issued with the ISO 9001 certification is neither necessary nor sufficient enough on its own to guarantee the quality of education or its administration; however, the certification can confirm an organisation's attempts at continuous quality improvement and their most important results. National quality awards are a powerful incentive to commit to quality improvement. These awards can even be adapted to function as models for university quality assurance assessment and evaluation.

Models, principles and implementation methods for excellence and effectiveness are still little used at Lithuanian universities. Currently existing systems of quality assurance is more oriented to static quality assessment. Usually specific education products (programmes, subjects, exams, etc.) or processes or subdivisions of education institutions are certified. However under conditions of modern competition there is a need of systematic and dynamic quality management and creation of models for universities' quality improvement. Therefore this section will be devoted to analyse the application of excellence concept at some universities in Western Europe and United States of America in order to get the insight of the level of excellence in this sector. Of course, there are processes of education institutions, like administrative (for example, management of documents, information about students, and delivery of correspondence) and some training processes that are similar to the processes at consulting or other service organizations. Therefore the same methods and models of effectiveness and excellence at education institutions can be used, but the authors of the paper argue that universities are quite unique and it isn't possible to transfer excellence models from other industry branch.

Character of excellence model used at organization depends on value systems and on specific needs of organization. The analysis of activities at higher education institutions of Western Europe and North American countries showed that these organizations seek for quality using the excellence models of above mentioned quality awards, by implementing ISO 9000 series standards, or creating their own systems according to the principles and methods

taught by quality management guru.

Excellence models defined by national and international quality awards schemes are widely used by universities to seek for excellence. The usage of excellence models is very popular in United States. In 1995 Malcolm Baldrige National Quality Award over passed the borders of traditional business-the criteria ("Education Baldrige") to assess private and state education organizations were elaborated. Many states of US started to use "Education Baldrige" creating models for performance improvement. At some universities quality managers from business organizations that won Malcolm Baldrige Award work as advisers in implementation of criteria of quality award (Dew, 2000).

In Europe there are education institutions that already have created QMS according to requirements of ISO 9000 or done the preliminary work. However a small number of institutions have certificates of ISO 9000 QMS. Most of certified education institutions are in Great Britain, Germany, Holland and France. Certification against ISO 9000 series standards is neither necessary nor sufficient condition to achieve effectiveness. However QMS implemented at universities stiffen control of documents and management, point responsibility of employees, and give confidence that work is done according to standards and procedures. QMS implemented correctly endue the basis for striving for excellence. However as it is evident, QMS according to ISO 9000 standards series are used by technical universities more frequently than by humanitarian universities. It can be explained by the fact, that technical universities have more relationships with business organizations and use their practices-technical approach to ISO 9000 series standards, while in humanitarian universities' "human" approach shall prevail.

Some universities apply successfully their own excellence models developed using principles and guidelines of Deming, Crosby and other quality "guru" or adapting to higher education different quality management methods and tools. These models have become the role models for other universities seeking for excellence. Harvard University (USA) summarised its search for excellence into six core success factors, which are the leading principles for the activities at the university (Michael *et al.*, 1997). Oregon State University, the acknowledged leader of quality management in higher education in USA, has developed its organizational "success criteria" that are the conceptual background of its own excellence model, which is a combination of requirements of Malcolm Baldrige Award and Hoshin Planning Model (Michael *et al.*, 1997). Indiana University Southeast (USA) developed its own key concepts from the results of initial staff survey on quality management issues, mission statement and service standards. Priorities for service quality improvement projects are identified and led by service quality and staff development committee (Canic, McCarthy, 2000). Rutgers University's (USA) quality and communication improvement programme (Rutgers QCI), the purpose of which was to assure progress in education, research and supply of public services, is widely applied at other universities. After determining the main groups of customers

and vision and mission of organization, quality improvement projects were planned and executed all over the university (Orel, 1999; Ruben *et al.*, 2000).

Lamar University (USA) uses PDCA (plan, do, check, act) circle for performance planning. The phases of PDCA are implemented by analysing current status and flowcharting of existing processes, generating and analysing data on the output of the process and quality problems; preparing recommendations for effectiveness of the analysed process (Montano *et al.*, 1999). DeMontfort University (Great Britain) created higher education total quality management (TQM) excellence model (HETQMEX) that provided a step-by-step change for higher education institutions that are committed to improving customer satisfaction. Education institution can enter into any of seven stages of transformation applying either of these quality management tools: SERVQUAL, the 5-S (seiri-structurise; seiton-systemise; seiso-sanitise; seiketsu-standardise; shitsuke-self-discipline), marketing and education quality control, quality control circles, ISO 9000 QMS, total preventive maintenance and total quality management (Ho, Wearn, 1996).

The main excellence principles implemented at Western universities, as summarized, are: focus on satisfaction of requirements of customers of organization; continuous improvement of quality of products; systemic and sustained enhancement of organizational processes; participation of all personnel in the improvement processes; participation of organization's partners in quality management; top level management commitment to quality; vision of organization and its deployment; decisions based on systemic analysis of data; prevention of non-conformities; training of all personnel striving to change their attitudes to quality; teamwork.

To sum up, several ways improving effectiveness and choosing for the search of excellence are used by universities. Depending on the preferences and motivation of the particular institution the various goals for excellence can be determined. Quality improvement and maintenance are the reasons why universities should seek for excellence. Concerning ISO 9000 QMS internal needs of organization are the primary motivator at majority of universities for implementing it. Rarely universities' customers entail of the certificate or organization tries to correspond to market conditions. Universities seek for better image or are concerned about increase and sustention of market share because ISO 9000 certificate is supposed to be a signal for clients that organization strives for high quality (Adomaitiene, Ruzevicius, 2002).

For universities-the drivers of technological and economic achievements, it is increasingly important to be market oriented; and as the sponsorship for education system is limited, the actual drive for change is surely-economic effectiveness. It could be discussed whether to choose for university to implement QMS and to strive for ISO 9000 certificate or to develop its own excellence model. The motivation to choose the alternative could depend on expectations of change results and the potential of the university (the current status).

The university that is oriented achieving long term results and develops its image in the

long run, as the authors of the paper suppose, should use the third possibility - formation of quality culture and development of its own excellence model. All the possibilities discussed do not contradict each other; on the contrary, they complement each other. Therefore seeking for effective formation of quality culture it is needed to start from simple things. According to systematic management approach any improvement of study quality should be started from analysis of situation: detection of quality requirements of organization's interested parties. Then institution should proceed with creation of quality purposes and indicators, and take to more complex one: creating standards of processes, encouragement of teamwork, implementation of QMS elements etc.; afterwards continuous improvement could become the element of organizational culture.

When first starting to look at the improvement of the quality of education, it is of utmost importance that there is a clearly formulated and easily understandable (for both the university community as well as clients) organisation vision, mission, quality policy and outline of the main values where the "product" of the university and its quality parameters are clearly defined, the main clients and suppliers are identified, their proposed interaction and association

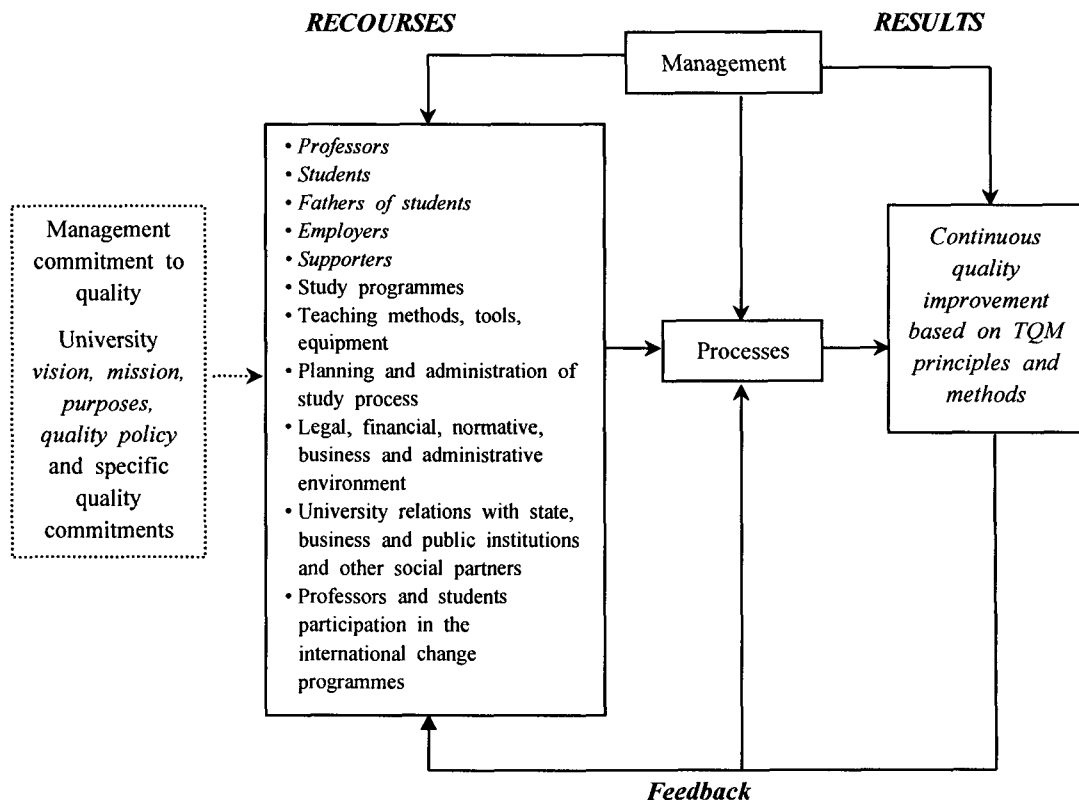


Figure 1. Model of university study quality assurance processes

is foreseen, and the main processes are identified and assigned with the appropriate administrators. See Figure 1 for a model of the management of university studies' quality assurance processes. Equally important is the quality management of the administration processes. The implementation of quality models to improve the quality of administration is simpler and less threatening to academic staff, which no doubt often sees any attempts at introducing new ideas as a restriction of their academic freedom. Having achieved success in improving administration quality it is usually easier to get lecturers to agree to suggested improvements regarding education processes and education quality.

Implementation of excellence principles at universities produces benefits. The benefits of discussed three possibilities improving and assuring quality at universities are compared in the Table 1.

Table 1. Benefits of possibilities improving quality at higher education institutions

Benefits improving quality at higher education institutions	Control of study quality indicators	Quality assurance system	Formed quality culture
Profound understanding of vision, mission, objectives and goals of university appears		*	*
Students and employees' rights and responsibilities are expressed in more detail	*	*	*
All employees are involved into the process of study quality improvement; quality of services is improved continuously in such way.			*
Teamwork assures cooperation among students and teachers, teachers and administration, facilitates ear of students wishes and needs, creates friendly environment			*
Communications between academic personnel and auxiliaries fasten with identification of internal clients' needs		*	*
The competence of personnel is better used			*
The confidence of business and society about the quality of products and services of university outgrows	*	*	*
Academic standards and examples of good practice are used more widely	*	*	*
The necessity to use the results of periodic internal audit as a mean for definition of level of organization's achievement and usage of the best practices of analogous organizations appears	*	*	*
Creation of study programmes and teaching process are improved continuously of		*	*
The necessity to make decisions using facts appears		*	*
The need for change and its management appears			*
Competitive advantage in national, regional and international markets is achieved			*

Higher education institutions' and their branch managers' commitment to quality-this is first and foremost when striving for improvements in the quality of university education, and the provision on which effective management of the ensuing changes will depend. Success will be assured only through the active and effective involvement of managers in this area, good recognition of the ever-changing demands of both the internal and external university users, the systematic assessment and attempt to meet these demands, systematic higher education clients' needs satisfaction analysis and evaluation, prioritisation of fundamental changes as required in the management of the organisation, and the further training and raising of professional qualifications of its employees at all levels.

3. Improvement of Quality of Education at Vilnius Law and Business College : A Case Study

3.1 Base Facts, Object, Methods and Scope

The purpose of this case study is to identify basis for and problems that occur when implementing ISO 9001 requirements in the management of institution of higher education. Object of study-existing management system of Vilnius Law and Business College. Research methods-analysis of existing processes through interviews and flowcharting, using specially designed questionnaire; review of management documents and facts provided in paper or electronically; expert surveys; metaanalysis.

Vilnius Law and Business College is a non-state higher education institution with prevailing non-university studies. It was established on 1 September 1998 as private higher business school. Steady growth of students reached 2500 in 2005, 2006 academic year. Management culture was developed by the staff itself-not inherited from big organisations. On August 24th, 2001 upon the Government decree Vilnius Law and Business College was given the status of an institution of higher non-university education. In order to provide higher education, college has to maintain license, issued by the ministry of education. The requirements are covering approval for certain study programs, qualification requirements for lecturers, and for the organization of study processes.

Vilnius Law and Business College is a modern institution of higher education that conforms to integrate both Lithuanian and European education system requirements.

There are 4 faculties at the College: Law, Economics, Informatics and Humanities. In 2005 students of the College have gone to study for the bachelor's degree at the University of Abertay of Dundee (Scotland) upon a mutual agreement.

3.2 Choosing of QMS Model.

Quality in education has to be achieved through systematic approach, maintaining QMS-no contra arguments are among the authors who analyse the topic. However many opinions are remaining how strict system should be and which standards to apply for such institutions. There are many considerations “for” and “against” ISO 9001 implementation in education institutions. The problem rise when people see ISO 9001 standard as a set of certain methods that shall be implemented. Discussions about “best” quality management methods are fruitless, because ISO 9001 : 2000 still have some residues relating to needs of “production” companies. In current research we found that it is important to skip the discussions about methods, and proceed to basics of quality management principles and philosophy. QMS principles and philosophy is very general and can lead to application of different QMS models, therefore the links between principles and ISO 9001 requirements were made. The relation between TQM principles and techniques/methods required by ISO 9001 is provided in the Table 2.

Table 2. Correlation between main TQM principles, those are important to higher education institutions versus ISO 9001 : 2000 standard requirements

TQM principles	ISO 9001 : 2000 requirements and chapter numbers (given in brackets)
The understanding of any message goes through consistent and systematic repeating of clear, unambiguous and up-to-date information.	Theoretical and practical training (6.2).
Different people fall into different categories of personalities, that have abilities to decode various information channels: a) by listening; b) by reading and imaging; c) by experiencing in practice; d) by monitoring visual examples (live or on screen); e) by sensing.	Documenting and visualising what was thought; controlling of documents and data. Assuring that any information (incl. documents) is clearly understandable; up-to-date; reflect real facts, but not desirable outcomes (4.2).
Management has to: - coach and direct people; - explain clear values of organisation; - give them understandable and affordable milestones and indicators; - allocate necessary resources for supporting of improvements and maintaining of system.	Write and communicate Quality policy (5.3). Define clear goals and deploy them to the ground level of organisation (5.4).
Support freedom, democracy within responsibility framework.	Define responsibilities, authorities and communication channels (5.5).
Ensure proper tools, facilities and environment to enable people to perform efficiently.	Control of infrastructure (6.3) and work environment (6.4).
Define clear processes.	Process control (7).
Analyse and improve-keep to the best practice.	Measuring, analysis and improvement (8).

By analysing relations, given in Table 2, comparing to the interview and document review results, we conclude, that quality management in higher education institutions exists regardless the fact how detailed it is documented. Level of documentation depends on: competence level, organizational culture, level of authorities and trust, and other.

3.3 Analysis of Existing System Documents

Table 3. Evaluation of quality assurance documentation of College

ISO 9001 Requirement	Evaluation of existing practice in higher education institution.
Defining of QMS-processes, improvements; [Chapter 4.1]	Good attitude and focus on main value added process-education. Related databases and forms are well maintained. Supportive processes are not defined nor structured. It is little authorities given for responsible managers.
Existing QMS documentation [4.2]	There is no clear structure of management documentation, no reference links. Conditional segregation of document types was done: - Vision and mission statements, announced in homepage bear Quality policy statements; - Quality targets are documented in Marketing plan, but communicated only to top management; - Improvement activities are documented in Self-Assessment report, that is required by Ministry of Education and Science; - Requirements for the main processes are defined in College Study regulations that cover: student admittance; study process management; testing and examination; failure control; monitoring of study programs; study mobility; finishing of studies. Responsibilities are defined in College Statute. Existing Job descriptions are formal documents, and are not used to define authorities in practice. There is formal organization structure in the College.
Quality manual [4.2.2]	Is not documented. Missing documents and clear understanding who belongs to "products", what are quality product parameters. Should be more clearly defined who are the clients, what are their needs, how to set priorities between the needs.
Document control [4.2.3]	Documents has been issued gradually, therefore some areas are overlapping in different documents. Analysis of new requirements impact to previous is not made; change control is not implemented. Ambiguous requirement spoils attitude of personnel to normative documents.
Management responsibility [5]	College Management defined Quality policy. The main purpose of the policy is to define stakeholders and their general needs. Targets and indicators are provided in detailed and structured Self-Assessment report (over 200 pages). Analysis of indicators is performed yearly. Improvement actions are documented in the same report. Self-Assessment as TQM tool gives significant impact into College improvement process. Improvement actions are supported by financial budgets. Self-Assessment and Budgeting as management methods are not required by ISO 9001, but are proved in practice.

Research team studied how existing documentation that reflects desired processes conforms to ISO 9001 requirements. Following documents were analysed in organisation: College Statute; College Regulation; College Study regulation; Marketing plan; Study programmes. Results of investigation are given in Table 3.

In the Table 3 analysis of ISO 9001 chapters 4 and 5 is given. Complete analysis is available in research documentation. This table reveals some general trends and problems in development of QMS, it's methods and relations to ISO 9001.

3.4 Analysis of Success and Failure Factors; Recommendations for the QMS Improvement Project

After analysis of existing management practice that was made solely by research team following conclusions were summarised:

- before the selection of models and methods, quality management principles and philosophy has to be clarified among the team;
- the need to document authorities and processes in order to set unified requirements increases in the growing organization of higher education;
- naturally developed existing system at higher education institutions conform only to some ISO 9001 requirements;
- the main education process of higher education institution is more complex comparing to other service industries, because usually end users' needs are unknown before the "product" (students knowledge) quality is tested in practice;
- ISO 9001 standard gives the framework for QMS at higher education institution, but not restricts the use of other management tools, originally known as TQM tools.

The authors of effective QMS for education organizations make the following recommendations those are introduced at the College:

- It will take time for a new quality culture to be accepted throughout the whole organisation and replace the routine work culture. The institutionalisation of these changes is a consciously managed process requiring preparation and specific skills.
 - Management-one of the most important elements when creating a quality system demanding utmost accountability-needs to be trusted to highly competent individuals in the field of quality management. The management principles need to be taken into account when developing a strategic plan by top level managers.
 - The lack of a clear strategic direction and the lack of a real understanding of the aim of quality system implementation will defeat the purpose of using a quality system in the first place.
 - The aims and expected results of QMS implementation need to be identified for each
-

organisation individually by first carrying out a series of tests and strategic calculations, the outcomes of which will be used to present a quality system vision, or ideal, that the organisation must work towards.

- In order to reach the highest level of effectiveness of QMS it is imperative that the initial ideal vision is not modified or adapted at later stages according to the situation or various possible barriers, so that the idealised result will still be reached.
- When elaborating on the potential variations in the quality system being implemented, it is important that at the same time employees are provided with timely information, training and that all channels of communication be open.

Most of education institutions implementing quality management tools and principles confront with such major *problems*:

- complication of description of study quality concept and content;
- multiplicity of study quality indicators and their measurement and assessment delicacy;
- lack of skills using TQM concept, its principles, ISO 9000 management models and quality methods;
- complication resolving university work into interdependent managed processes and process thinking formation;
- inertia and sometimes even resistance of part employees to fundamental changes.

3.5 Managing the Improvements of QMS in Higher Education Institution

Further case study analysis involved more respondents from Vilnius Law and Business College, and more active roles were performed by authors. However levels of activity as observers were different: participants as observers, observers as participants, and complete observer with no social interaction with College people. These different roles helped us to collect more information and different views at QMS. The main target for the research was to define which factors have influence to QMS implementation in organization of higher education.

Evaluation of external factors has to be linked to the time frame, as these factors in Lithuania are changing 6~10 times faster comparing to European developed countries (see figure 2).

External factors resulting to following current and future developments of QMS in Lithuanian institutions of higher education:

- further QMS expansion to other segments (e.g. from clearly defined to sophisticated services; from businesses to non-business organizations; from relatively stable organizations to single projects, etc.)
 - further integration with new organizational structures and new management areas;
 - more orientation to effectiveness, rather than formal compliance;
 - more efforts to meet social requirements of people;
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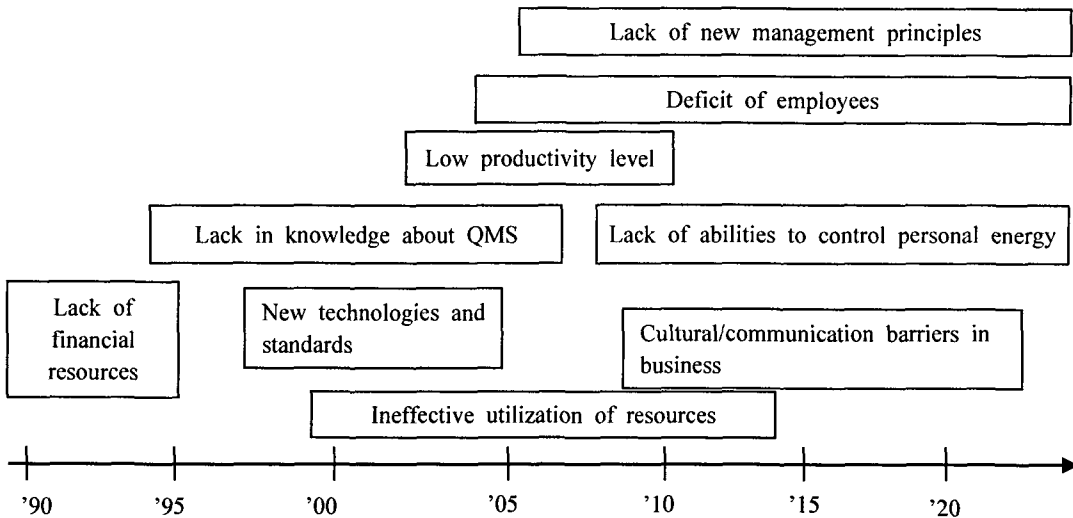


Figure 2. The dynamics of influencing factors to QMS development in Lithuania 1990~2005~2020 y. y.

- automation of collection and analysis of data and facts;
- expanding of terms “document” and “data records” from the point of view of ISO 9001.

By analysing external factors within QMS implementation team, strategical goals for the system were defined.

Internal factors-people, environment, processes and quality management. These were changed during the QMS improvement process in the college. Results were summarised in Table 4.

As indicated in the table above, implementation of QMS does not mean to break existing processes and to create something totally new. Focus of management was on quality and efficiency of main education processes-and result is obvious-just one out of six processes was newly designed. On the other hand, supported processes were not developed-and about 60% of them were newly developed.

During QMS implementation Ishikawa’s “fish bone” approach was widely used, striving to move attention from effect to causes, especially focusing on personnel. Later was discovered by authors, that cause-effect analysis is rather circular than linear e.g. in some moments effects became as a causes for further effect-it is like clock-wise rotation of squares shown in Figure 3.

As in literature analysis was stressing by majority of authors, the focal point of QMS improvement shall be customers (internal and external) and other stakeholders, and those people have to benefit from improvements. Benefits we mean in broad sense-e. g. by increasing values of individuals and teams. The “cause-effect” analysis and QMS improvement model Figure 3 in every square defines internal and external clients as a main cause for further results.

Table 4. The short summary of process improvements in College during QMS implementation

TQM principles	Process improvements in College
Consistent and systematic, clear, unambiguous and up-to-date information.	Developed training programs on QMS; introduced personal consultations.
Different information channels and their combinations: verbal, visual, sensomotoric, etc.	Improved use of server; systematic meetings with clear agenda and action plans.
Management abilities and commitment: - coach and direct people; - explain clear values of organisation; - give them understandable and affordable milestones and indicators; - allocate necessary resources for supporting of improvements and maintaining of system.	In-deep analysis of market research and self-assessment material, and defining targets for processes and departments; Created new structures: - to deal with continuous learning and feedback from former students and their employers; - to manage scientific research and international projects.
Support freedom, democracy within responsibility framework.	Defined and documented processes do not require to make extra activities "to maintain quality system"; processes define points of information sharing and monitoring to facilitate faster and more reliable data gathering, analysis and actions.
Ensure proper tools, facilities and environment to enable people to perform efficiently.	Feed-back system from lecturers to those, who responsible for proper functioning of tools, facilities and environment; annual budgeting to improve infrastructure.
Define clear processes.	Following processes were structurised: Main (value added) processes: Improved: 1) student admission; 2) student selection; 3) planning and organizing of studies; 4) control of study process; 5) final evaluation of students; New: 6) Collaboration with former students in the field of employment and further education. Supportive processes: Improved: Personnel management; preparation of methodical material for studies; control of infrastructure (incl. IT); New: Strategical planning, budgeting and review of system effectiveness; control of non-conformities; control of corrective and preventive actions; internal auditing; document and data control.
Analyse and improve-keep to the best practice.	Improved and expanded self-assessment system: - by involvement of all departments; - clarifying areas of improvement; - preparing and controlling action plans

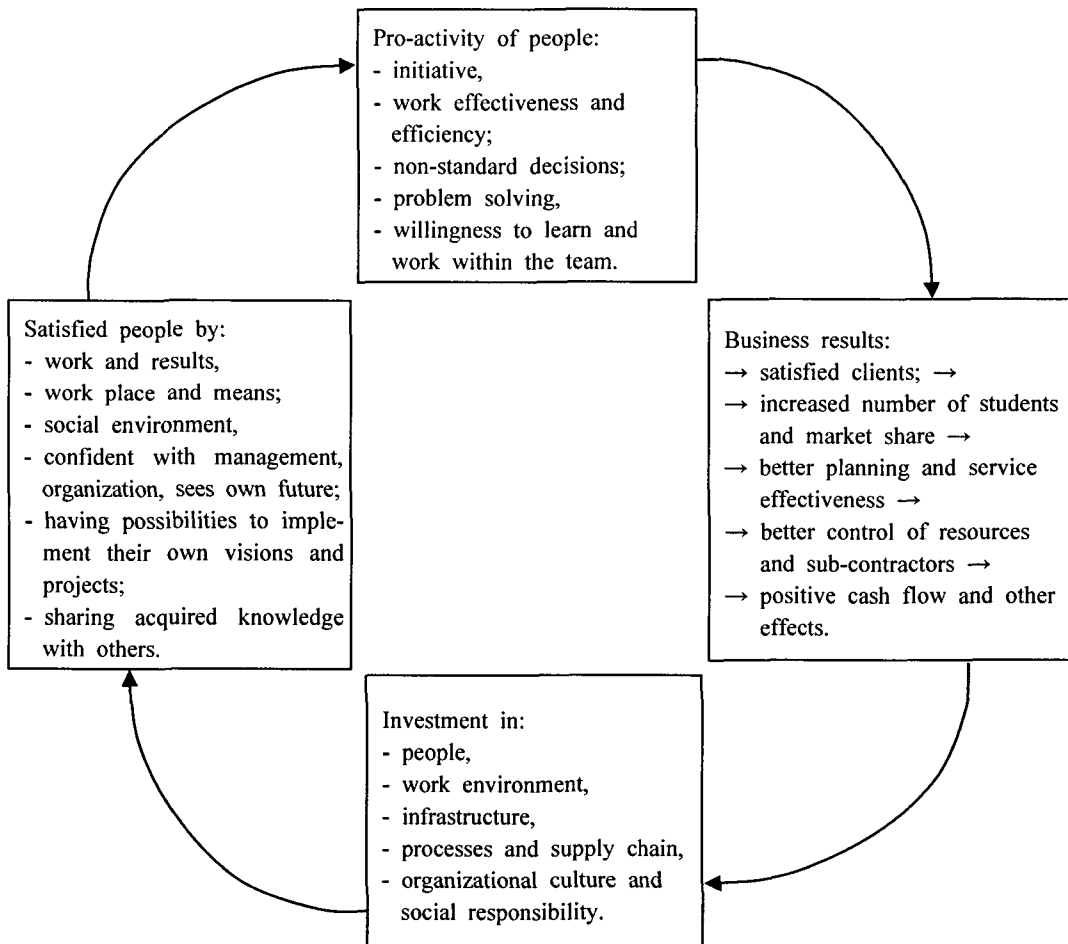


Figure 3. Cycle of “cause-effect” analysis and continuous improvement in higher education organization.

3.6 Developments and Further Research of QMS in the College

The QMS in College research started in September 2005. In June 2006 it was certified against ISO 9001 : 2000 by international certification body Bureau Veritas (BVQI); nevertheless it is still much to do to achieve TQM in education.

Further research is planned to do in following areas:

- perception of College QMS by internal and external clients;
- analysis of QMS driving factors;
- perception of educational quality via benchmarking, promotion, personal and experts' experience;
- correlation analysis between process performance indicators and educational results.

4. Conclusions

The analysis of activities at higher education institutions of Western Europe and North American countries highlighted that the organizations seek for excellence by implementing ISO 9000 series standards, using the criteria of quality awards or creating their own models according to the principles of quality management guru and using different methods of quality management.

The results of surveys at Lithuanian universities indicated that there are improvement areas to be tackled. The system of education quality improvement and excellence should be designed as continuous process considering that the quality of final product of university activities is the result of achievements of all stages of educational process. University leaders' commitment to quality, participation in the improvement process using excellence principles, methods and tools are the keystone for the success.

Administration quality improvement is very important requirement to higher education institutions, though the main aim of universities should be the application of TQM concept and methodology in the all organization.

The implementation of TQM and ISO 9001 systems at universities and colleges communicates such *benefits*: personnel involvement into the processes of education quality improvement; better usage of personnel competency; more precise measurement and assessment of work results; better identification and control of processes; rise of satisfaction of clients, social partners and society with universities work results.

QMS implementation in the College case study showed, that existing management tools, required by licensing process, and those implemented voluntary (before ISO 9001 project) are acceptable according ISO 9001.

Most of education institutions implementing quality management tools and principles confront with such major *problems*: complication of description of study quality concept and content; multiplicity of study quality indicators and their measurement and assessment delicacy; lack of skills using TQM concept, its principles, ISO 9000 management models and quality methods; complication resolving university work into interdependent managed processes and process thinking formation; inertia and sometimes even resistance of part employees to fundamental changes.

QMS improvement has to be an endless "cause-effect" solving process; "cause-effect" analysis has to be circular rather linear.

In order to be certified by ISO 9001:2000, there is no need to explain standard requirements in detail-it is enough to define, implemented systematically maintain TQM principles and common sense.

Vilnius Business and Law College case study showed, that in order to implement com-

plete QMS, and certify it against ISO 9001, more efforts need to be made on structuring of supportive processes and implementing new (60 % new processes), rather than main processes (16% new processes). The QMS in College research started in September 2005. In June 2006 it was certified against ISO 9001 : 2000 by international certification body Bureau Veritas (BVQI); nevertheless it is still much to do to achieve TQM in education.

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