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QUALITY MANAGEMENT OF HIGHER EDUCATION FOR INCREASING THE COMPETITIVENESS OF LABOUR RESOURCES

Abstract: *The objective of the research is empirical investigation of the priority components of increasing the competitiveness of labour resources in the quality management system of higher education based on the TQM concept. The methodology is based on the methods of comparative analysis, synthesis of strategic plans for the development of Ukrainian universities, the method of situational analysis (Case method) based on strategies and reports of universities' leaders in the market of educational services in Ukraine. Results. In the process of empirical research, it has been proved that educational institutions are implementing the philosophy of total quality management (TQM) at three levels, namely: process, organizational and "a quality management principles level". It has been determined that the classical universities of Ukraine are transformed into scientific and research centres that carry out innovative activities and cooperation at the international level, taking into account the requirements of the interested parties in order to ensure the competitiveness of graduates and their own competitive position in the educational market.*

Keywords: *Quality Management; Total Quality Management; Quality of Higher Education; Competitiveness; Quality of Specialists' Training*

1. Introduction

During 2000-2020, the higher education sector was characterized by a number of fundamental issues and challenges due to liberalization policies, increasing competition, the introduction of corporate governance into management practice like the private sector. Previously, education was considered a public good provided by non-profit organizations with clear social missions and no competitive pressure. However, over time, education has become a global service; university budgets are growing rapidly, exceeding the budgets of individual countries

(Pucciarelli & Kaplan, 2016). Universities are being transformed into quasi-companies with marketable educational products; their activities are subordinated to various interested parties in an increasingly complex and competitive knowledge market. The outlined changes in the functioning of universities have led to the active implementation of quality management in higher education based on the TQM philosophy. Over the last decade, the higher education sector has implemented this new approach to quality management, based on public and private sector management models. This has led to strengthening

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management control of HEIs, government control and organizational restructuring, increased market competition, ranking of higher educational institutions according to competitiveness indicators (Jones et al., 2012). The quality of specialists' training for labour markets is one of the indicators for comparing higher educational institutions (HEIs) in terms of competitive advantages. The mentioned tendencies in the higher education actualize the study of the features of quality management in this area in order to determine the most effective components of increasing the competitiveness of labour resources.

The purpose of the academic paper lies in empirical investigation of the priority components of increasing the competitiveness of labour resources in the quality management system of higher education based on the TQM concept.

2. Literature Review

Quality management of higher education takes place at three levels of higher educational institutions: process, organizational and "a quality management principles level" (Manatos et al., 2017). The quality management practice is implemented on the basis of an integrated holistic approach and, accordingly, the strategic plans for the development of the HEI (Manatos et al., 2017). In the scientific literature, the discussions are taking place on the quality of higher education in the areas as follows: teaching and learning, research, services, approaches at the institutional level (Stensaker et al., 2011). The introduction of total quality management (TQM) practice is related to the necessity to reduce the level of fragmentation of educational institutions and establish cooperation between universities for the exchange of experience, knowledge and research. TQM has necessitated HEIs to develop strategies, development plans based on requirements, the problems of the market environment, which increasingly needs a workforce with a wide range of

competencies. As a result of the implementation of strategic development plans, international rankings for assessing the quality of universities are emerging and developing according to various components, including the management one. An example is the development at the international, national levels of tools for the classification and ranking of HEIs, the adoption of a wide range of measurements and performance indicators (Van Vught & Westerheijden, 2010; Duque, 2013). The management context of universities is becoming increasingly integrated, leading to the centralization of power in a small number of bodies involved in decision-making and managing higher educational institutions (HEIs) (Melo et al., 2010). In practice, universities follow the tendencies of TQM implementation in order to increase the integration of different management practices into the global quality management system (Manatos et al., 2017).

According to the literature on HEIs' studies (Barnett, 1990), there are four main dimensions at the process level: teaching and learning, research and scholarship, third mission, and support processes. Teaching and learning, together with research and scholarship, are core activities within HEIs. The third mission reflects the engagement of universities in business-related activities, local and regional development, economic growth, and societal development in general (Laredo, 2007). The support processes cover all sorts of services and processes, ranging from administrative services to other support processes and activities (Yeo & Li, 2014). In turn, the literature on quality in HEIs (Brennan & Shah, 2000) refers to three organisational levels: a program level, a unit level, and an institutional level. Finally, the literature on QM (Evans & Lindsay, 2004) consensually presents eight principles of QM, namely: customer focus, leadership, involvement of people, process approach, system approach, continual improvement, factual approach to decision-making and mutually beneficial supplier relationships.

Pucciarelli & Kaplan (2016), based on SWOT analysis, examine eight key tendencies that will affect higher education and the workforce of HEIs in the short and medium term. Based on the trends outlined, the authors have identified three main problems of HEIs that have the greatest impact on practical investigations, namely: (1) the need to increase the prestige and market share; (2) the need to adopt business practices; (3) the need to increase the level of interaction and joint value formation with key stakeholders.

In order to increase the level of competitiveness of the country's labour force, universities are actively implementing total quality management (TQM) (Kleijnen et al., 2011; Zakuan et al., 2012; Sahney, 2016). The studies identify the advantages, disadvantages and barriers to TQM implementation, among which the main ones are the lack of commitment to the top management of universities, the lack of coordination between university departments. These principal barriers are the drivers of other challenges towards the quality management of higher educational institutions, namely: high staff turnover at the management level, lack of a culture of continuous improvement, resistance of HEIs' staff to changes (Talib et al., 2011).

Market orientation is among the main trends in quality management of higher education, which has been called the theory of academic capitalism. (Slaughter & Cantwell, 2012). This tendency includes the processes of creating and expanding intermediary organizations external to universities in order to improve relations between universities and markets; intermediate organizations that arise in universities and implement various market-oriented projects (Tarí & Dick, 2016); development of marketing for ensuring the competitiveness of universities; expansion of managerial capacity (Todorut, 2013); new streams of funding for conducting investigations and implementation of programs meeting market requirements (Leiber et al., 2018); dissemination of new knowledge based on the assessments of

experts and professionals in relevant fields (In'airat & Al-Kassem, 2014).

3. Methodology

The qualitative methodology has been used in the research based on methods of comparative analysis, synthesis of strategic development plans of Ukrainian universities, following the global tendency of TQM practice, which is enhanced by European integration processes. In order to conduct the comparative analysis, the method of situational analysis (case method) has been chosen on the basis of strategies and reports of the universities' leaders in the market of educational services of Ukraine, which are included in the world rankings for competitive positions. Additional sources of data on the quality of HEIs are selected as follows: the rating of HEIs of Ukraine "Top-200 Ukraine 2021", developed by the Centre for International Projects "Euroeducation" and the international group of experts IREG Observatory on Academic Ranking and Excellence; 2) the rating of Times Higher Education World University Rankings 2022, measuring more than 1 600 HEIs in 99 countries around the world in terms of efficiency and competitiveness.

4. Results

Institutional changes in Ukraine, the globalization of education and integration into the EU increase the competitive tension among higher educational institutions (HEIs), necessitating the need for strategic management of competitive advantages. In addition to the constantly growing level of competition in the educational services market, HEIs of Ukraine are also faced with the problems of a demographic crisis, transformation of needs, labour market requirements in relation to the specialists' professional competencies, and the introduction of new rules for the assignment of professional qualifications; reduction in the number of foreign citizens requiring

educational services, inconsistency of regulatory documents in the field of education, lack of updated, new regulatory acts in accordance with laws, etc.

The problems outlined are exacerbated by changes in approaches to the financing of the education system, in particular, through the introduction of unified indicators of the activity of HEIs, which do not fully take into account the specifics of the functioning. As a result, the competitive positions of Ukrainian HEIs in the international market are deteriorating. The coronavirus pandemic has induced to reconsider the mechanisms for enhancing the competitive position of HEIs, primarily, to intensify the integration of digital technologies into educational activities, to optimize the forms of interaction between students and teachers.

The rating of HEIs of Ukraine “Top-200 Ukraine 2021”, developed by the Centre for International Projects “Euroeducation” and the international group of experts IREG Observatory on Academic Ranking and

Excellence, compares higher educational institutions (HEIs) in terms of competitive advantages as follows (Figure1): scientific-publishing, academic, international activity and cooperation, evaluation of scientific and research successes by comparing official sites, the level of citation of scientific works of HEIs’ scientists in scientific publications with the highest ratings, popularity in the Internet space, quality of training, educational and scientific work, inventive activities, attractiveness of the university for applicants (Euroeducation, 2021a). The rating of the Times Higher Education World University Rankings 2022, evaluating more than 1 600 HEIs in 99 countries around the world, identifies indicators of efficiency and competitiveness as follows: indicators for assessing teaching, research, knowledge transfer, international perspectives (Euroeducation, 2021b). Thus, the strengthening of the competitive position of HEIs depends on the quality of functioning of the main subsystems of the educational institution.

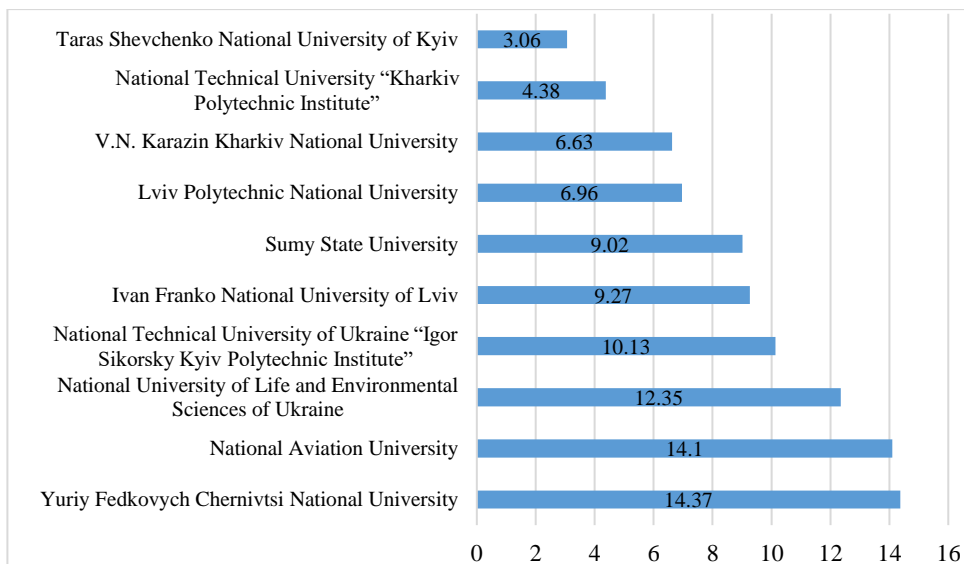


Figure 1. Rating of HEIs of Ukraine 2021

Source: Euroeducation (2021a).

Highly rated HEIs are characterized by the following high competitive positions, namely: a high rating of OS, Scopus, Webometrics, Erasmus+, Nature Index, UniRank, awards of the President of Ukraine, Academic Council of young scientists, patents. HEIs with the best rating “Top 200 Ukraine 2021” are also leaders among universities in Ukraine 2021 in the subject areas as follows: “Economics and Business” (in particular, in the sub-sectors – “Business and Management”, “Accounting and Finance”, “Economics and Econometrics”): Lviv Polytechnic National University - with a rating of 301-400, Sumy State University - with a rating of 401-500, National Technical University “Kharkiv Polytechnic Institute” - with a rating of 601+, Taras Shevchenko National University of Kyiv with a rating of 601+, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” with a rating of 601+. These HEIs are also leaders in other subject areas, meaning high quality specialists’ training programs.

The high competitive positions of HEIs in the face of growing pressure from the external environment can be ensured through well-functioning mechanisms of competitiveness. For instance, according to the report on the activities of Taras Shevchenko National University of Kyiv in 2020-2021, the Academic Council on the organization of the educational process operates on a permanent basis in the institution; the Strategic

Development Plan of the University for the period 2018-2025 has been approved meeting the provisions of the Law of Ukraine “On Higher Education”. This ensures the continuity of implementing measures on strengthening competitive positions by creating different subsystems, elimination or reorganization of insufficiently efficient subsystems, optimizing the operation of different subsystems. In 2020-2021, the following institutions have been established, namely: the Center of Digital Competences; the Interdisciplinary Analytical Center for Social-Economic Welfare and Mental Health with a grant from the International Renaissance Foundation; Baltic Studies Centre of the Institute of Philology; Centre for Croatian Language and Culture of the Institute of Philology of Taras Shevchenko National University of Kyiv and other structures (Official site of Taras Shevchenko National University of Kyiv, 2021).

The Charter of Taras Shevchenko National University of Kyiv defines the concept of educational activity as follows: “The main goal of educational activities is to train highly qualified and competitive specialists on the national and international labour market for organizations of all forms of ownership ... at all levels of higher education ... in all spheres of education ... the establishment of national, cultural and universal values”. This concept determines the functioning of other levels of quality management in HEIs (Table 1).

Table 1. Components of the quality management system of higher education

Level of quality management	Taras Shevchenko National University of Kyiv	Lviv Polytechnic National University
Organizational		
Program level (programmes offered by HEIs)	At the program level, universities develop and implement educational (scientific) programs within licensed specialties, determine forms of education, organization of the educational process; independently develop and implement educational training programs in accordance with the International Standard Classification of Education.	
Unit level (a department, a faculty or other basic unit of HEIs)	Centralized formation, reorganization and liquidation of structural units	

Table 1. Components of the quality management system of higher education (continued)

Institutional level (the organisational structure of HEIs)	Positioning as a classical research-type university, a leading modern research and training centre of Ukraine	Positioning as a powerful educational and scientific centre of Ukraine
	13 faculties, 8 educational institutes, 1 educational - scientific institute, 1 educational - scientific centre, 2 colleges, Ukrainian Physical and Mathematical Lyceum, preparatory department, Centre for Ukrainian Studies, Geological and Zoological Museums, University History Museum, Interfaculty Linguistic Museum, Information and Computing Centre, Astronomical Observatory, Publishing and Printing Centre “Kyiv University” and Scientific Library named after M. Maksymovych.	16 educational and scientific institutes, Institute of Distance Learning, International Institute of Education, Culture and Diaspora Relations, 10 colleges, 101 departments, scientific and research department, scientific and technical library, publishing house, design association of students “Polytechnic”, People’s House “Education”, 4 educational and health camps, a unique environment for the production and implementation of creative ideas and successful startups - Tech StartUp School. SID CITY Science Park has been established.
Process		
Teaching and learning	Permanent improvement through reviewing the compliance of the University’s educational programs with the requirements of the labour market, the state and the society.	The high level of teaching is ensured by the teaching staff, the involvement of professionals from various fields of activity for transferring knowledge and experience to specialists.
Research and scholarship	Joint activities with educational institutions, research institutions and other legal entities.	Cooperation with universities of Germany, the USA, Canada, Great Britain, Poland, France, Austria, Slovakia, Cyprus, Bulgaria and other countries.
Third mission	Involvement of employers’ representatives in the process of developing the content of educational programs, in the definition of evaluation procedures, in participation in the educational process and final certification. Integration with enterprises through the creation of training, research and production complexes.	More than 30 educational and research centres and laboratories have been opened with the support of the private sector, in particular, with the support of the Lviv IT Cluster, ROSHEN Management Company, IT companies GlobalLogic, Eleks, SoftServe, Sigma Software, PLVision LLC, Intellias, Perfectial, Conscensia and Vakoms, AMC Bridge, Leoni Holding; Siemens Medicine LLC, etc.
Support processes	A number of support departments operate, namely: accounting, academic mobility department, internal control and audit department, targeted training department, international cooperation department, etc.	
Principles of quality management and HEIs’ activities		
Compliance with TQM principles (+/-)	Do not comply with principles. Continuity of processes, high guaranteed quality of education, construction of educational programs on the basis of competence, establishing the responsibility of all participants in the educational process, etc.	High professionalism, academic freedom, institutional autonomy, innovation in research, teaching, trust, respect, justice.

Source: compiled by the author on the basis of the Official Website of Taras Shevchenko National University of Kyiv (2021b); Official site of Lviv Polytechnic National University (2021a; 2021c; 2021d).

For instance, the content of educational programs (curricula) is subject to a specific main goal of the university. In addition to professional training at the global level, the HEI should provide students with the formation of key competencies for further employment, self-fulfillment, active citizenship, social harmony.

The basic principles of functioning of Ukrainian HEIs differ from the common practice of implementing TQM principles (customer focus, leadership, involvement of people, process approach, system approach, continual improvement). The Charter of Taras Shevchenko National University of Kyiv defines the following principles of functioning, namely: continuity of learning, research and production processes; high guaranteed quality of education in order to ensure competitiveness in the national and international market of educational services; development of educational programs on a competency basis, taking into account professional standards, labour market needs and prospects for industry development; recognition of high-quality practical training of students as a necessary condition for obtaining qualifications at all levels; establishing the responsibility of all participants in the educational process, involving all categories of the University employees and students in measures in order to ensure the quality of educational programs.

The Charter of Lviv Polytechnic National University defines the following principles of functioning, namely: 1) autonomy and self-government; 2) delimitation of rights, powers and responsibilities of the Ministry of Education and Science of Ukraine, governing bodies of the University and its structural units; 3) a combination of collegial and unanimous principles; 4) independence from political parties, public and religious organizations.

This discrepancy is explained by the fact that HEI is developing and implementing a national system for ensuring the quality of higher education based on monitoring trends in the development of the world educational and scientific space. At the same time, in order to increase the competitiveness of labour resources, HEIs study the modern labour market in Ukraine and provide marketing support for educational services, monitoring the employment and career growth of graduates.

The development strategy “Lviv Polytechnic – 2025” provides the implementation as follows:

1. Missions - the formation of future leaders who work wisely, creatively, effectively; future specialists of relevant professional competencies based on a systematic approach, critical and creative thinking, willingness to communicate, moral responsibility and patriotism.
2. Visions - the movement towards the status of the best university in Ukraine in terms of international and national rankings.
2. Adherence to values (professionalism, patriotism, integrity, academic freedom, desire for change, spirituality, traditions).
3. Implementation of specific measures in order to achieve strategic goals (Table 2), which are aimed at implementing the following components of quality management of HEIs.

The major purpose of Lviv Polytechnic National University lies in providing quality multilevel education, training of competitive professionals, research and scientific - pedagogical staff, transferring new knowledge and new technologies, development of world-class innovative products, implementation of the results of scientific research, technical, technological and design developments, joining the world's leading research and educational centres.

Table 2. Plan of measures of Lviv Polytechnic National University for 2021

Deadline for implementation of the measure	Measure	Status of execution
Until January 1, 2021	2.4.1.8. International certification of the international laboratory for startups Fablab.	+
	2.4.1.9. Creating and stuffing a corporate platform for the implementation of startups.	+
	2.7.3.3. Modernization of reading rooms of the Scientific and Technical Library (building № 28): II floor (reading room of social and economic literature).	+
Until March 1, 2021	1.2.2.1. Annual monitoring of procedures and measures of the system of quality assurance of educational activities and quality of higher education (internal quality assurance system), in particular, the results of current control, semester control, assessment of residual knowledge, etc.	+
	2.1.2.3. Monitoring the state and level of corporate culture of the university, conducting surveys on corporate identity.	-
Until April 1, 2021	1.2.1.4. Conducting an annual survey of first-year students in order to clarify and further address issues related to their adaptation, interaction with the teaching staff and administration.	-
Until April 30, 2021	5.2.2.2. Implementing informational events for domestic media.	
Until June 30, 2021	3.3.1.2. Development and implementation of a system of staff evaluation and certification.	+
	4.1.4.3. Every semi-annual monitoring of h-indices of full-time employees in the NBD Scopus, Web of Science.	+
	5.2.2.3. Establishing contacts with well-known bloggers and journalists of the leading national mass media.	+
Until August 31, 2021	5.2.2.2. Implementing informational events for domestic media.	-
Until November 30, 2021	2.4.1.1. Launch of the first production of the science park.	+
Until December 31, 2021	1.2.1.1. Organizing additional classes on fundamental training.	-
	2.9.1.5. Establishment of a cooperative for the construction of a cooperative building for university employees.	-
	2.9.1.7. Carrying out of energy saving actions (at Kniazia Romana Street, 1).	+
	2.9.3.1. Construction of a sports complex at Lukasha Street, 4.	+
	2.9.3.2. Reconstruction and modernization of sports complexes and rooms of the sports complex at Samchuk Street, 14.	+
	4.1.4.3. Every semi-annual monitoring of h-indices of full-time employees in the NBD Scopus, Web of Science.	+
	5.2.1.2. Modernization of the Museum of the History of Lviv Polytechnic.	+
	5.2.2.2. Implementing informational events for domestic media.	-
5.2.2.3. Establishing contacts with well-known bloggers and journalists of the leading national mass media.	-	

Source: compiled by the author on the basis of the Official Website of Lviv Polytechnic National University (2021b)

The strategic directions of Lviv Polytechnic National University include as follows: the constant development and improvement of educational services and scientific activities;

systematic analysis of the requirements and expectations of all stakeholders and their satisfaction with the services provided by the university; ensuring effective and permanent

improvement of the system of internal quality assurance of educational activities and the quality of higher education.

The internal documentation of Lviv Polytechnic National University on ensuring the quality of educational activities and higher education provides for the implementation of management activities in the following directions, namely: 1) the formation of educational programs and curricula, their monitoring and periodic revision; 2) student-centered learning; 3) formation of the contingent of students, assessment, recognition of learning outcomes and certification of students; 4) staffing of educational activities; 5) training and information resources; 6) information management.

Quality management of higher education towards strengthening the competitive position of Ukrainian HEIs also includes measures as follows:

- 1) introduction of elements of the internal quality assurance system, tools to promote transparency of the educational process and decision-making by management;
- 2) improvement and permanent implementation of feedback tools with various participants in educational activities, employers and graduates;
- 3) reorganization, optimization of various subsystems of HEIs, development of internal regulations in order to regulate activities;
- 4) expanding the use of technologies, in particular, for external independent evaluation, distance learning and assessment technologies.

Quality management of HEIs includes procedures for ensuring academic ethical code by participants in the educational process, information management tools, continuous development of opinion polls of stakeholders, improvement of methods and procedures for assessing, solving staffing problems, connected with the need for professional development of personnel of HEIs.

Thus, the competitive positions of HEIs are ensured with high marks in the world rankings of universities, indicators of publication activity, a powerful teaching staff, and significant volumes of scientific investigations, international activity and cooperation. The major mechanisms for enhancing the competitiveness of HEIs are the introduction of elements of the internal quality assurance system, the improvement and constant introduction of feedback tools, the reorganization, optimization of various subsystems of HEIs, and the expansion of the use of technologies.

5. Discussion

European integration processes accelerate the transition of Ukrainian HEIs to new models of quality management and the inclusion of educational institutions in the international knowledge system. Institutional changes accompany these processes, as a result of which the level of competition in the market of educational services is growing. HEIs are strengthening their own competitive position through: 1) optimization of the internal quality assurance system; 2) implementation of the principles of transparency; 3) strengthening the centralization of management decisions in accordance with the corporate practice of strategic management, taking into account current market problems related to the competitiveness of labour resources; 4) implementation of the practice of assessing the quality of higher education and feedback tools by stakeholders; 5) reorganization and optimization of the subsystems of HEIs in order to achieve certain strategic goals; 6) active use of technologies. The strategic plans of HEIs take into account the challenges of the Ukrainian labour market and the requirements for workers' competencies, recognizing the problem of low labour productivity of Ukraine, migration of workers to countries with higher wages, low level of qualification of workers in Ukraine compared to advanced EU countries.

In Ukraine, quality management of higher education takes place at three levels of HEI: process, organizational and “a quality management principles level”. (Manatos et al., 2017). The implementation of quality management practice is conducted on the basis of international standards and an integrated approach, as well as in accordance with the strategic plans for the development of HEIs (Manatos et al., 2017). In addition to traditional practices at the process level, relating to teaching and learning, research, services, approaches at the institutional level (Stensaker et al., 2011), Ukrainian HEIs are implementing innovative quality assurance practices, creating unique environments with the involvement of professionals from various fields of practice. An example of innovation is a unique environment for the production and implementation of creative ideas and successful startups - Tech StartUp School, the creation of the SID CITY Science Park in the framework of Lviv Polytechnic National University.

The introduction of the practice of total quality management (TQM) in the Ukrainian HEIs is accompanied by the establishment of cooperation between universities, the private sector at the international level in order to exchange experience, knowledge and conducting studies. It is difficult to determine the cause-effect relationship: whether TQM has led to the need for universities to develop strategies, development plans taking into account the requirements, problems of the market environment, or vice versa, the desire to ensure quality has been as a prerequisite for the implementation of the philosophy of TQM by HEIs. The discrepancy between the principles of universities’ activities and the principles of TQM indicates to the fact that

Ukrainian universities are implementing their own innovative competitive strategy that meets the requirements of the domestic market. These principles overlap somewhat with the TQM concept, but are more innovative.

6. Conclusion

The empirical research of the priority components of increasing the competitiveness of labour resources in the quality management system of higher education based on the TQM concept indicates the importance of changing the institutional organization of HEIs’ activities as a prerequisite for improving education quality management. The European integration processes of Ukraine have accelerated institutional changes, contributing to other levels of process, organizational changes and the implementation of TQM principles. Classical universities of Ukraine are transformed into research centres conducting innovation activities and cooperation at the international level, taking into account the requirements of stakeholders in order to ensure the competitiveness of graduates and their own high competitive position in the education market.

The theoretical value of the research lies in supplementing knowledge of the basic levels of implementation of TQM philosophy: changes at the institutional level of the organization of higher education lead to transformations at the program level and the level of individual HEIs; integration of TQM principles is possible under the condition of gradual change of institutions.

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