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Projection of Deming Principles to the Kazakhstani Higher School

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Abstract

In the conditions of emerging competition, the consumer (applicant) gets the opportunity to consciously and responsibly choose the necessary educational products from a huge list of similar services, and an institution that produces low-quality educational services that does not suit the modern consumer increasingly finds itself without sales markets and means for existence and development.

The main provisions of the quality management philosophy, which were produced by E. Deming, and they have found mass application and confirmation of high efficiency. A brief description of these provisions helps to draw attention to the main thing in the philosophy of quality management and the importance of its practical application. This philosophy is universal and suitable for not only the organizations or industries and administrative services, but also they are applicable to the service sector, primarily in education field.

The article presents a thorough analysis of the essence and the content of 14 quality management principles created by Professor E. Deming, functioning in relation to the conditions of the Kazakhstani system of higher and postgraduate education. The article also presents the QMS based on the Shuhart-Deming cycle and its' effectiveness in quality management practical solutions. It investigates relevance and significance of the problem with a due regard to the influence of modern university external and internal environment. It is concluded that it is necessary to simultaneously use these interrelated Deming principles, only after deep understanding and adaptation of their content to the specifics, organizational culture and management capabilities of each university.

Key words: principles, processes, systems, management, quality, Deming, Shewhart-Deming cycle management, ISO standards, university, higher education.

Introduction

William Edwards Deming is an eminent American scientist, the founder of the applied science of “quality management”, the author of the theory of a systems approach to quality management, deep knowledge, 14 principles of quality management, chain reaction, PDSA cycle, 5 “fatal diseases” of US companies, etc., which are the basis of international standards, such as ISO 9000, and are successfully used by effective companies in developed countries, to ensure their competitiveness and sustainable development. He is deservedly considered the leader of the Japanese “miracle”, for his contribution to the development of its economy in 1950-1980, “Revolutionary of capitalism”, “Pioneer of quality”, and the founder of Sony Akio Morito (Morito, 1993) called him “The patron saint of quality.”

The principles of E. Deming's management aimed at radically changing Western management are relevant to the Kazakhstani Higher Education, because according to the President of the Republic of Kazakhstan N.A. Nazarbayev, "We should adopt the half-century experience of Western countries in quality management in the shortest time, as soon as possible". Quality management in education plays a special role in the transition to the informational society, which is due to two factors circumstances (Dyatlova et.al, 2007).

Firstly, educational organizations act as the primary link in which future specialists, their professional thinking, principles and approaches to solving modern business problems are forming. Education is a unique institution with the ability to replicate its internal institutional rules for economic life as a whole. From these positions, it is important to educational organizations to be advanced, "exemplary" in terms of the quality management systems implementation, in demand at modern enterprises. It is a macro-level factor, which is regulated by the state structures efforts at the governmental and regional levels, industry professional associations and unions.

Secondly, the development of market relations in our country, non-governmental educational organizations emergence which have exacerbated competition in the education system. Due to the issues related to society and economy transformation, the quality level of educational services provided in Kazakhstan has decreased. As a result, it is directly affected graduates of educational institutions. Therefore, educational institutions need to look for ways to create and develop competitive advantages, and above all to improve provided educational services quality. Here we are dealing with a micro-level factor, which is managed at the higher educational institution level.

Thus, there is a need of implementing quality management systems, which is connected with the main aim of modern Kazakhstan education— to improve the quality of educational services in order to meet the society needs and train specialists who meet the modern world requirements for economic development. This circumstance determines the relevance of research related to the construction and development of management systems in Kazakhstani Higher School based on quality management systems (QMS).

The causes of the current crisis in the field of higher education in Kazakhstan are different. At the same time, a prerequisite for getting out of this situation is the production of only competitive products. Of course, not all universities will be able to withstand competition. Moreover, it is important to recognize this at all levels of government. However, it is beneficial for the society of any country that its' universities work successfully. Therefore, the experience of the best universities was analyzed and enriched as a result of the many outstanding specialists research, primarily American, and later Japan and other countries.

Research hypothesis: if we use the 14 principles of quality management and Shewhart-Deming cycle formulated by E. Deming in the Kazakh system of higher and postgraduate education conditions, the higher education quality may increase.

Literature Review

The main postulates of modern quality management by E. Deming were formulated more than 60 years ago in his famous 14 principles - the basis of the evolutionary transformation of enterprises to modern management models, such as QMS, TQM, kaizen, kairyo, lean manufacturing, six sigma, kanban, 20 keys, etc. The text of these principles was continuously perfected by E. Deming for 40-45 years; therefore, the scientific literature contains more than 10 variants of their interpretation (Deming, 2019).

The principles of E. Deming that enable the constant improvement of the quality of products, improve the manageability of the enterprise while reducing costs, are relevant to this day for Kazakhstani management, because in his Letter to the people of Kazakhstan dated January 2017, the first President Nazarbayev N.A., stressing the need to ensure the transformation of state holdings, emphasizes that "The quality of management and corporate governance needs to be brought up to the international level" (Nazarbayev, 2017).

In modern conditions, the quality of higher education is one of the important characteristics of its competitiveness. One of the priority tasks in solving this problem, adopted by the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020-2025, is the transformation of the education management system at all levels. In addition, the modernization of higher education and science in the country in the context of global trends cannot be imagined without the scaled use of the principles of the named management (Resolution, 2019). Therefore, the article describes the 14 principles of E. Deming with his comments at the time of the publication of the book "Overcoming the Crisis" (1982), as well as my version of the explanations, first adapted in relation to the Kazakhstani system of higher education, reflecting the modern vision of the problem in a global digitalization of the world economy, a new understanding of the context of universities, the transition of certified educational institutions of the country from 2018 to new versions of ST RK ISO 9001-2016 and ST RK ISO 9000-2016 (Management systems, 2016).

It should be noted that initially the methods of quality management became widespread in the industry. Now according to a series of international ISO standards 9000 quality control philosophy and standards of its provision are used in providing services in health care, tourism, education etc.

Until mid of 1995 only 4 foreign educational institutions were certified in accordance with the ISO 9000 standard requirements, at the present time work on the quality system elements implementation and the quality guidelines for educational organizations creation are being conducted in almost all countries of Europe, USA and Kazakhstan as well (Puzankov et.al ., 1999). The development and implementation of quality management systems in the universities of our country were "spurred" by decisions related to the Bologna process. The choice of development concepts based on the creation and improvement of the QMS particularly important for Kazakhstani higher schools. While developing the concept of the education quality, it is necessary to answer the following questions: What should be understood by the education quality? What role should the university's quality system play in solving the overall task of improving the education level? How such system can be built?

The construction of the university's QMS has important differences from similar systems developed and implemented in organizations or other industries and fields of activity (Petrova, 2001). This is because organizations engaged in the educational services provision have a number of distinctive characteristics:

1. For example, industrial enterprises, they do not produce materialized products.

The consumption of services begins immediately during their production. This requires increased demands on education quality, since it is either extremely difficult or impossible to correct the "defects" of education.

2. In organizations engaged in the provision of educational services, the absolute majority of staff (faculty and educational staff) directly contacts the consumer (students). In the process of rendering the service, the consumer perceives and evaluates academic level, professional knowledge, and social skills of educational organization employees at the subconscious level and according to many other

parameters. This affects the integral consumer assessment of the education quality, making it stable and difficult to change in a short period due to efforts aimed only at improving the education quality process itself.

3. The boundaries of the services provided by the university vary in a wide range. They can be reorganized based on a standard educational or curriculum. In many cases services are provided based on an agreement between an educational organization and a consumer (governmental or private), which determines the need for integrated quality management.

4. Since specialists (including teachers, department directors) of an educational organization have a certain freedom in the development and implementation of educational programs and curricula, their personal competence is important for obtaining required results. On the other hand, it can have a decisive influence on the education quality. Finally, it is quality management that is required. Any other approach professed by the university may be ineffective.

5. The management of the educational services implementation has a nature similar to project management. Under these conditions, the stages of obtaining and evaluating intermediate results should be defined. Individual business processes should be clearly identified, recorded, and their contribution to quality education should be evaluated.

To give a new quality to the educational process and its products not just new systems should be implemented, but a set of management technologies supported by appropriate tools.

Its composition depends on the existing level of university development as a whole and on the level of management main business processes. Taking into account the tightening competition in the educational market should ensure not only the promotion of the university to the next level of development, but also create prerequisites for further growth and improvement of the educational activities quality.

What exactly should the educational quality management system include in, and how exactly should it function? According to State Educational Standard ISO

9000:2001 (the official translation of the international quality standard ISO 9001:2000) the quality management system — is a system designed to develop policies, goals and achieve these goals for the organizational quality management improvement. Such a system is a combination of the university organizational structure, documentation, processes and resources required to carry out general management and education quality guidance.

Based on the above-mentioned features of the educational services provision and the implementation of QMS in the management, it is advisable to distinguish the system individual stages, which we are considering.

The first stage of QMS construction is analytical. Its content is the study about the construction and functioning of the system being created. Here semantic, conceptual modeling of the system being developed is carried out. Concepts, principles, standard procedures, etc. of quality management are studied and adapted according to the conditions of a particular university. There is also an analysis of QMS already implemented in other universities and, possibly, at industrial enterprises. Its results is a clearly formulated and approved by the majority of university leaders plan for the QMS creation and functioning, including a description of its goals, working principles and main tasks.

The second stage of QMS construction is a project. Its main content consists of building a system model, which is based on the concepts of "system quality" and "result quality".

It is based, on the principles of quality management, and on the specific methods of higher educational institution work. The nodal elements of the model are the processes description, their regulation order, indicators and evaluation criteria systems, methods and procedures for evaluating business processes, the quality of which must be ensured.

The third stage of the QMS construction is a working one, when theoretical schemes and quality management models of the university's activities is implementing, it is the quality management system practical deployment.

As follows from the description of the QMS construction stages, the most important of them is the design stage. The success of QMS design largely depends on the correctness business processes allocated within educational institution. It is customary to define the following conditions, which are necessary for building a university processes system:

consideration of activities within the organization from the consumer's point of view; implementation of the system "from top to bottom";

providing optimal connections between the functions of the organization's divisions from the client's point of view;

transformation input data as a result of the process operations into output data execution which implies the use of various resources (Nikitin, 2002).

The quality of educational activities results, which is the purpose of creating a QMS, is determined by university graduates knowledge, skills and abilities, their active civic position, level of culture and morality. High quality of the activity results can be achieved only with a sufficient quality of the educational process, which is determined by its content and consumer orientation, and on the organization and security level.

All this suggests the need for active deterministic interactions between and within processes. To model complex process systems when building a QMS in our country and abroad, it is customary to use a methodology based on Shewhart-Deming cycle or PDCA (Shewhart, 1939). It allows determining the processes sequence and key aspects of their interactions, it can be used at different levels of leadership and management.

The PDCA (Plan-Do-Check-Act) Deming cycle, which is sometimes called "Deming Cycle", was developed by the William Edwards Deming in the 50s of the last century. Deming himself called his model the "Shewhart Cycle" because it was based on the ideas of his mentor Walter Shewhart.

Deming wanted to develop a reliable algorithm for determining the reasons why the quality of goods and services may not meet customer expectations. The solution

he created helps companies to make assumptions about the necessary changes, and then check their guesses during a continuous repeating cycle of processes.

The Shewhart -Deming cycle consists of four stages: P - plan, D - do, C - check, A-act (as a result, it turns out abbreviation PDCA). This rather simple and effective approach to quality management, which is also appropriate to use in the QMS being created. For this purpose, I will highlight the main processes (processes of the first level) of the educational organization activity (Lapidus, 2000). These processes include "Planning", "Resource Management", "Business Processes", "Measurement, Analysis and Improvement", "Management analysis".

The system of these processes is cyclic, when the output of one process is simultaneously the input of the next one. According to this, the output of the "Management Analysis" process is the input of the "Planning" process, but at a new stage in the organization quality development. "Planning" and "Management Analysis" are considered as separate due to the fact that they give completely different results and perform different functions. "Measurement, analysis and improvement" and "Management analysis" are considered also separately, due to the peculiarities of the university hierarchical management. Managers of different levels are responsible for these processes, where the output of the first one is the input of the second one.

Methodology

The research results are based on the observations of the authors, based on more than twenty-years of practical experience in the development and management of the university's QMS in the positions of vice-rector for educational work and the head of the management systems department of WKATU named after Zhangir Khan (Uralsk) in 2002-2011, as well as experience in teaching in the disciplines “Management”, “Quality Management Systems” and “Quality Management in the Service Sector” at this university and at the University of International Business (Almaty). The work used research methods such as observation, collection, comparison, description, analysis, generalization, evaluation, synthesis and

description of the essence and mechanism of operation of various Deming principles, which have been practiced in certified firms and companies over the past 15-20 years, based on materials from domestic and foreign publications.

Results and Discussion

Correlating the identified processes with the elements the Shewhart-Deming cycle: "Planning" is directly related to the stage of the Plan cycle", "Resource Management" and "Business Processes" correspond to the Do standard, "Measurement, analysis and improvement" and "Management analysis" are relevant to the Check stage, the specificity of the university cycle is that between "Management Analysis" and "Planning" there should be an Act stage, since it is advisable to carry out the impact within a large system through planning based on a thorough analysis and data synthesis. The analysis shows that the process approach to the construction of the university QMS using the Shewhart-Deming cycle has a certain specificity due to the characteristics of the processes of the educational organization.

According to V. S. Sobolev and S. A. Stepanov, the assessment (quality) of the university's activities excellent level should be carried out according to the following six "dimensions":

1. The degree of customer orientation.
2. The degree of the applied approach consistency.
3. The degree of the applied approach prevalence by management levels, various sub-divisions and processes.
4. The degree of the university staff involvement in the relevant processes.
5. The degree of processes documentation.
6. The degree of focus on the inconsistencies prevention and continuous improvement.

Thus, the QMS based on the Shewhart-Deming cycle makes it possible to achieve an increase in the degree of at least more than four of the above "dimensions" (2,3,5 and 6), which ultimately allows us to talk about the growth of the quality of both processes and the system itself as a whole.

The main work of the university with the consumer of educational services takes place within the "Business processes" element of the cycle modified. Therefore, it is necessary to consider these processes in more detail, as a unique element of the system, which sets the other processes in customer orientation. The most important results of the universities' activities are educational services, scientific and technical products, integrated products based on scientific and technical products and educational services, educational and methodological products (Katchalov, 2001). Publishing products should be added to this list, and then the listed results will correspond to the directions of the university's work. Thus, the main directions of the university's work, in my opinion, should be considered educational, research, methodological and publishing activities. From the educational services consumer perspective, educational activities consisting in the provision of appropriate services as a priority. Consequently, it is advisable to consider the full life cycle of the educational service. To determine the interaction between processes the Shewhart-Deming cycle was used and the classic "quality loop". The results of analysis are presented in Figure 1.

The full life cycle of an educational service consists of processes divided into three main blocks. Block "A" performs the function of planning an educational service. Block "B" displays the activity of providing educational services and the direct educational process. Block "C" performs the controlling function. Basic interactions are carried out between blocks "B" and "C" by the impact of accumulated and analyzed information on the planning and service development.

Below we will consider the principles of Deming applicable to improving the education quality in our country.

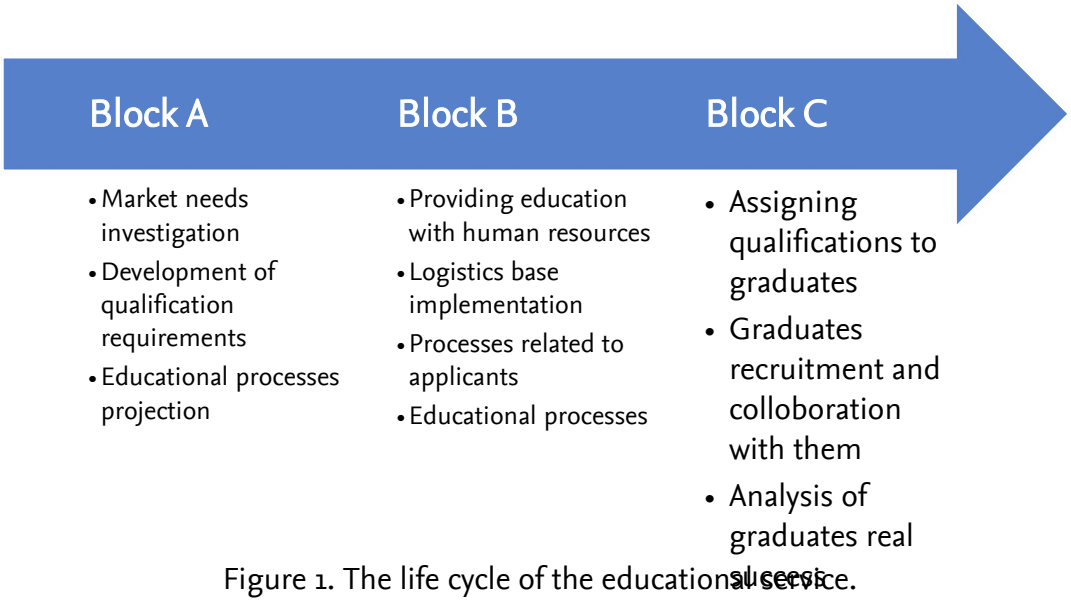

Figure 1. The life cycle of the educational service.

1. *"Strive for consistency of goals. Make it your constant goal to continuously improve the quality of products and services in order to become a competitive company, keep the business and provide people with jobs."*

According to Deming, "There is no system without a goal" (Adler, 2018). Hence, the implementation of the first principle means the need for each university to develop and fulfill its own mission, vision, long-term and medium-term development goals, which serve as a guideline for the development of annual plans - indicators of current activities. The principle guides the management of the university to ensure continuous improvement of the quality of educational and scientific services, in fact, demonstrating the desire to continuously improve the corporate culture, and not to deal with it from time to time. You cannot assume that once you find the right solution, you can use it forever. According to the PDSA, quality management is similar to cycling; you should pedal continuously so as not to fall and not go broke.

Therefore, the principle of constancy of goals for the leadership of the university means:

- to establish, through personal example, a corporate culture of commitment to the constancy of positive change based on the development and implementation of its strategic and tactical goals, values and guiding principles;

- not get carried away with short-term goals, profits, quick results, current and long-standing problems, to the detriment of long-term goals of improving processes, i.e. you should keep a course for transformation;
- to be ahead of clients (students) - planning and satisfying not only their present, but also future needs in 10 or more years;
- management of personnel and students only by orders is not effective, but more ethically - through the setting of measurable and achievable goals that inspire and unite the team;
- a teacher, employee and student who has realized the goal will move towards it himself.

2. *"Adopt a new management philosophy. We are living in a new economic era started in Japan. One can no longer accept the generally accepted level of errors and defects in work. A transformation of Western management style is needed to stop the continuing decline of the economy."*

The principle is basic and the most difficult to implement, since all the other 13 can be mastered only if it is fulfilled. The essence of the principle of traditional "carrot and stick" management has exhausted its capabilities, in order to achieve positive changes adequate to the requirements of the external environment, the rector should master and implement a new management philosophy of a human-centered approach to management. At the same time, he should radically change the management style by 180 degrees, in the form of:

- refusal to perceive people as devices for fulfilling orders from their superiors, because each of them has his own opinion, experience and feelings and requires a delicate approach to himself, based on respect and cooperation;
- rejection of the tradition of searching for and punishing those responsible;
- the establishment of the principle of leadership and focus on consumer needs.

3. *"Eliminate the need for mass inspection as a way to achieve quality by building "quality" into products."*

Unfortunately, in the minds of many leaders, "the words "quality" and "control" coexist in about the same way as the words "sausages" and "mustard" - somehow I don't want to use one without the other" (Mazur, 2016). However, the quality of educational and scientific services of the university does not depend on the total control of educational and pedagogical activities of the teaching staff and students,

because quality (good and bad) is already contained in the service, which is on the conveyor. Hence, control is a belated measure, because the educational process has started. Mass control of the work of subordinates is a laborious process, it causes fear, teaching staff and students feel suspicious, do not show initiative in their work, they are waiting for commands from above. Therefore, the management of the university should "build in" quality:

- in the description of processes and services at the stage of designing the content of the "competence" model of innovative education, in the development of educational programs for bachelor's, master's, doctoral studies;
- into the minds of teachers and students in the form of a gene of "morality" on the basis of improving the elements of credit and distance learning technology, personality-oriented pedagogy of cooperation.

Quality control of educational services should be transformed into the process of internal audits of the QMS, i.e. move from control to process management.

4. "Stop shopping for the cheapest price. End the practice of selecting suppliers based on the price of their products alone. Keep your total cost to a minimum and strive to have one supplier for each component."

It follows from the principle that it is impossible to staff and infrastructure of the university on cheap resources, because saving on them will inevitably result in additional costs for correcting defects (the avaricious pays twice). Therefore, universities should continuously invest in the development of human resources and the renewal of infrastructure that meets the best international standards. This will create the preconditions for the future training of competitive specialists of a new formation at the level of international educational standards, both in terms of competence indicators and in terms of the cost of training.

5. "Continuously improve every process. Continuously improve the planning, production and service systems to improve every process of the company."

Deming recommends creating a managed system for continuous improvement of all core processes, linking them with each other and the functions of the owner-processes, i.e. heads of key departments (7 +/- 2 people). They must manage, and therefore design, create, implement and continuously improve their business

processes by analyzing their condition and identifying the causes of potential problems, taking into account the needs of consumers, stakeholders and eliminating them with proactive actions before they occur.

6. "Create an in-the-workplace training system - TWI program. Put into practice modern methods of training, including managers of all levels, in order to better use the opportunities of each of them."

The essence of the postulate is that quality management is first taught by the management of the university - external consultants, and then all personnel are trained by their immediate supervisors in the workplace, continuously through mentoring and practical activity on the personal example of improving processes and respecting subordinates. The costs of training AUP, CEP and teaching staff to perform their official duties are not costs, but an investment in the future of the university (Moldashev, 2019). Thus, research by scientists has established that every dollar invested in vocational education returns 40 dollars to the state's GDP!

7. "Establish 'leadership' as a way of working for managers at all levels. Managers at all levels must help employees do their best, be accountable for quality results, and become leaders in improving company performance."

The principle guides leaders of all levels to transform into leaders, because they are not supervisors, but are obliged to systematically improve the quality of the main processes of the university and donate to their wards creative experience and knowledge of humanistic management through mentoring in the role of a coach, mentor and psychologist (Deming, 2019). Unfortunately, the institution of leadership in Kazakhstani management is not always encouraged, but suppressed. Most rectors believe that a university should have one leader. But, according to Deming, the "leadership" of managers at all levels is the foundation of a comprehensive motivation for team and free activity of all personnel, a trigger mechanism for mastering a new management philosophy, leading to an improvement in the corporate culture of the team.

8. "Avoid the atmosphere of fear. Eliminate the atmosphere of fear so that everyone can work more productively for the good of the company."

Deming recommends managing staff based on leadership, mutual respect, trust, cooperation, freedom of discussion and delegation of authority in order to liberate and open up the inner spiritual world of people, because fear and threats of job loss, control, criticism and humiliation of an employee by management destroy their dignity and motivation for effective work, leads to concealment of problems, offended obedience, evasion of responsibility, exaggerated numbers, mutual responsibility, etc. Therefore, it is necessary to abandon the administrative approach in the relationship between management and the individual, teaching staff and students, from the tradition of searching and punishing the guilty, and turns the management process to a person on a motivational basis, identify and eliminate the reasons causing the system failure. The teaching staff and employees should be encouraged for identifying inconsistencies, defects and complaints from consumers, and inconsistencies should be perceived as invaluable experience, "points of growth" and self-cleaning of the university. According to this principle, it was not in vain that E. Deming once wrote: “New ideas are generated by people who owe nothing to anyone and are accountable only to themselves” (Niv, 2005).

9. *“Break down barriers between departments. Researchers, developers, manufacturing, commercial and administrative representatives must work in teams to jointly solve problems with products and services.”*

In the interests of the common cause of the team, it is necessary to eliminate barriers or dissociation between departments and achieve work in a single team of employees of various structures of the university using the effect of synergy (1 + 1> 2), mutual support, a sense of community, complementing and compensating for each other's weaknesses on the basis of a systematic approach to management, spiritual community and management of cooperation, instead of management based on internal competition, conflicts.

10. *“Give up empty slogans and appeals. Avoid using slogans to employees calling for zero flaws and elevated productivity. They provoke opposition, because low quality and productivity of labor are generated by the system, and their solution is beyond the competence of an employee.”*

Obsessive admonitions, advice and calls from above to work well, not supported by resources, cause hidden negative emotions of teaching staff and students, because the low quality of educational and scientific services almost does not depend on the performers, and 98% depends on the initially improperly created management system for the educational and scientific process, i.e. the problem is systemic. The unreasonable slogans at the meetings show the desire of the management to shift the responsibility for poor quality onto the performers. Therefore, from the point of view of Deming, the university administration should first establish clear rules of the game, an action plan, quality standards and goals, a system of training, motivation and involvement of personnel and students in quality management, the procedure for resource provision, i.e. create your own system, mechanism and management processes, and only then require their implementation.

11. *"Eliminate arbitrary numeric norms and assignments. Eliminate the practice of issuing randomly set quantitative assignments to employees and managers, since. their achievement becomes more important than customer satisfaction and is achieved at the cost of quality reduction".*

In accordance with the thesis, the management of the university only in terms of quantitative indicators and ratings, if their implementation does not depend on the performers, and the norms are overestimated and unattainable, it humiliates people, suppresses their initiative. The pursuit of digital indicators leads to subscripts, distortion of facts, percentage obsession, window dressing and lowering of education quality standards. Therefore, the management of the university should abandon management only on the basis of "dry numbers", strengthening the expert assessment of the activities of structural units on the basis of knowing the essence of things, optimizing processes, agreeing with performers and formulating measurable goals, finding compromises between "doing a lot" and "doing OK".

12. *"Give employees the opportunity to be proud of their work. Remove barriers that prevent people in your organization from being proud of their work. This means refusal from annual personnel certification in terms of quantitative indicators".*

The administration is obliged to instill in teachers, staff and students a sense of professional pride in the university academic community and love for Alma Mater,

based on the creation of an atmosphere of mutual respect, trust, support, recognition of merits and skill of any of them. In this case, they are proud of their university and strive to improve the quality of their activities. According to Deming, it is necessary to abandon the annual certification and ranking of personnel according to formal indicators, and create conditions for joint educational and cognitive activities of teaching staff and students, when their cooperation would satisfy the interests of both parties.

13. "Encourage the pursuit of education. Implement an extensive self-education program for all employees. Knowledge is the source of success in achieving competitiveness."

The principle is a continuation and development of the 6th, but the aim is higher here - for Deming is talking not just about improving the qualifications of personnel, but about creating conditions for lifelong learning and improving the level of intelligence of all personnel. The competitiveness of the university is the fruit of the implementation of new knowledge, competencies and know-how of all personnel, therefore their training in managerial and pedagogical innovations should be massive, advanced and systematic (throughout life), since education does not reach the saturation point and becomes obsolete every 2-3 years. It is important to create an atmosphere of aspiration of all teachers, staff and students for regular self-education without coercion, a cult of new knowledge and professional excellence, encourage and inspire them with career advancement, as well as "... create a" learning organization "and an intra-university knowledge management system for involvement in the process of self-education of all personnel and all students, which is cheaper, profitable and will lead it to long-term success, and formal education will only help him survive " (Astrakhansky, 1993).

14. "Hold top management accountable for solving quality problems in the organization. Clearly define top management's unwavering commitment to continuous quality and performance improvement."

The meaning of the principle is that quality begins not at the department, but at the very top of team management. The rector of the university should take personal responsibility to consumers and the state for the creation and continuous improvement of a really functioning QMS or TQM, not to delegate them to

subordinates, but to personify positive changes in the team by personal example of adherence to all the principles set out above. Only with such a position of top management, each teacher, employee and student can be motivated and voluntarily involved in systemic transformations, take responsibility and initiative in solving the problems of the quality of educational and scientific services of the university and become a true leader in his workplace.

Conclusion

The analysis provided allows concluding that the usage of the Shewhart-Deming cycle in the university's QMS construction facilitates the practical solution of process allocation and their decomposition issues by constructing the main blocks and distributing the intended processes within them. It allows concentrating efforts and resources on key processes that have the greatest impact on results, as well as ensuring total quality achievements. It is essential that the system built using the Shewhart-Deming cycle contains principles and mechanisms continuous improvement. At the same time, the management of the university is informed in advance about the "bottlenecks" in quality management that arise "at the junctions" of the blocks and processes allocated.

The author's development of approaches to the university QMS construction, presented in the article, is not limited to theoretical constructions. The third, working, stage of building the QMS was also passed observing private universities in Almaty city.

The practical implementation of the QMS in the management of Kazakhstani educational organizations has revealed a number of problems caused by the specifics of educational activities:

- higher education is characterized by a duality of organizational structure (relatively independent implementation of administrative, economic and educational functions), which makes it difficult to form an integral QMS;
- in many universities there are "centrifugal" tendencies, when "loyalty" to an academic discipline or to their department (faculty) of teaching the composition prevails does not

contribute to activities in the interests of the university as a whole, which causes damage the quality of educational activities;

- universities often focus on the achievements of individual employees (researchers and teachers), the status, promotions and salary increase, as a rule, are based on the assessment of the activities and results of an individual, not a group of employees, which contradicts the integrated quality ideology.

In order to solve the listed issues, in my opinion it is necessary to concentrate the main efforts aimed at development and improvement QMS of educational organizations.

In summary, the analysis and generalization of Deming's 14 principles in relation to the domestic higher education shows that they are common universal philosophical imperatives for the management of universities (what to do?), but they do not represent ready-made recipes and mechanisms for intra-university management (how to do?). Many of them, at the first cursory acquaintance, seem absurd and unacceptable. Indeed, an average university leader with a clear mind and solid memory is very unlikely to agree with such creative Deming's views as, rejection of: mass control of students, staff and teachers, numerical management, the tradition of finding and punishing the guilty, advice and edification from above, etc. Therefore, they should be applied in practice only after careful understanding them as part of a single interconnected system and adaptation of their content to the specifics, culture and management capabilities of each university. Moreover, the connecting link of these principles is not the prioritization of the quality of educational, scientific and technical services, but the philosophy of morality, elementary respect and trust in employees, students and their teaching activities... The managers' core goal is not in the adoption of all 14 principles, but in forming a strong corporate culture that would be optimally compatible with them. Therefore, the above-stated principles do not represent a new project of effective management, but a permanent process and philosophy of systemic improvement of the management culture at a university.

References

1. Adler, Yu. & Shper, V. (2018). Testament of Edwards Deming. In the book of Deming E. “The new economics for industry, government, education”, 9-15.
2. Astrakhansky, Yu., (1993). Official web-site of Deming Association http:// www.deming.ru
3. Cecelia, S. (1992). The World of W. Edwards Deming. SPC Press.
4. Deming, E. (2019). Out of the Crisis: A New Paradigm for Managing People, Systems and Processes. Moscow: Alpina Publisher, 370.
5. Deming, E. (2019). The new economics for industry, government, education: Simple mechanisms leading to growth, innovation and market dominance / Edwards Deming; Trans. from English. M.: Alpina Publisher, 182.
6. Dyatlov, S. A., Miropolsky, D. Y., & Plotnikov, V. A. (2007). State and market: a new quality of interaction in the information and network economy. Monograph in Education. Quality problems in education (1).
7. Kachalov, V. A. (2001). ISO 9000 standards and quality management issues in universities. Moscow: IzdAT, 2001
8. Konareva, L. (2002). The theory of E. Deming. *Standards and quality,15* (11), 46-49.
9. Lapidus, V. A. (2000). General quality (TQM) in companies. M.: OAO "Typography " news.
10. Mazur, I., (2016). Quality management: a study guide. M.: Publishing house Omega, 400.
11. Moldashev, G. (2019). Quality management systems: A study guide. Almaty: Evero Publishing House, 272.
12. Morito, A. (1993). Made in Japan: trans. from English / Morito A. M.: Progress, 413.
13. Nazarbayev, N. (2017). Message to the Kazakhstani people of the President “The third modernization of Kazakhstan: global competitiveness”. *Kazakhstanskaya Pravda, 30* (20), 5-8.
14. Nikitin, V. A. (2002). Quality management based on standards ISO 9000-2000. St. Petersburg: St. Petersburg.

15. Niv, G., (2005). E. Deming's Space: trans. from English by Yu.T. Rubanik. Alpina Business Books, 376.
16. Petrov, A.P. (2001). Educational services and quality management .M.: LATMES.
17. Puzankov, D. V., Stepanov, S. A., & Shaposhnikov, S. O. (1999). The use of the principles of universal quality management and ISO 9000 series standards in engineering
18. Resolution of the Government of the Republic of Kazakhstan (2019). "State program for the development of education and science of the Republic of Kazakhstan for 2020-2025". https://adilet.zan.kz/rus/docs/P1900000988/history
19. Shewhart, W. (1939). Statistical Method from the Viewpoint of Quality Control. N. Y.: Dover Publ., Inc.
20. Sobolev, S. V. & Stepanov S. A. (2004). Concept, model, and criteria internal control system of the quality of higher professional education effectiveness. University management: Practice and analysis, 2 (30).
21. ST RK ISO 9000-2016. Quality management systems - Fundamentals and vocabulary. (2016). Astana, 56.
22. ST RK ISO 9001-2016. Quality Management Systems – Requirements. (2016). Astana, 36.