Problems of improving the quality of education

Bakhyt Baitanayeva[1], *Zhanara* Aubakirova[1*], *Aida* Aitbembetova[1], *Aida* Sansyzbayeva[1]

[1]Al-Farabi Kazakh National University, al-Farabi Ave. 71, 050040 Almaty, Republic of Kazakhstan

Abstract. The article deals with actual problems of improving the quality in higher education school, taking into account the world experience. First of all, attention is paid to the concept of the quality of education, interpretations of various scientists and specialists are given. It is noted that the quality of education in first of all, it depends on the competence and experience of the teacher and the modern technologies used teaching method. The article, based on international experience, concludes about the effectiveness of group learning methods. The article draws a conclusion about the effectiveness of group training methods based on international experience. Special attention is paid to the need to comply with the principles TQM and ISO series quality standards in the educational process. The need to implement a quality management system (QMS) in all universities of the country is emphasized. The article proposes to select students according to their abilities and inclinations to scientific -research activities or work in business structures. The educational process in universities should be aimed at the integration of science, education, industry (business). The article provides examples of successful activities of this chain.

1 Introduction

At present, the quality and accessibility of education is a key factor in the country's competitiveness. Scientists have come to the conclusion that in the current conditions of the information revolution, the competitive advantages are determined neither by the size of the country, nor by its rich natural resources, or by significant amounts of financial capital. The most important thing is the level of education and the amount of knowledge accumulated by society. Moreover, knowledge is rapidly becoming obsolete, new knowledge is replacing it, and this process will be repeated endlessly. Therefore, people need to learn throughout their lives in order to meet modern requirements.

The Republic of Kazakhstan is in the process of reforming and modernizing the education sector. The main objectives of the development of the education system are identified in the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020–2025. The purpose of this program is to achieve a high level of quality of higher

---

* Corresponding author: korn1000@mail.ru

education that meets the needs of the labor market, the tasks of industrial and innovative development of the country, the individual and the relevant international best practices in the field of education.

The state has set an ambitious goal for the country-to enter the top 30 competitive countries in the world. This goal can only be achieved by training a new type of personnel.

In today's rapidly changing technological world, competitive advantages, depend largely on the quality of labor resources and investments in human capital, which are provided through education. In this regard, issues related to factors, criteria for determining the quality of training of higher education institutions, and the main trends in their development are becoming relevant.

2 Results and Discussion

Modern requirements of the world community to the level of education and professional competence of the individual place a great responsibility on the field of science and education in the training of highly qualified specialists. In this regard, it is necessary to constantly improve the education system and introduce innovative technologies and teaching methods. Kazakhstan has a credit training technology that allows our students to study for a semester in the best foreign countries under the program of double-degree education within the framework of academic mobility. In addition, the country conducts state monitoring of universities on the degree of compliance with modern requirements. Universities whose graduates are unable to get a job in their specialty, if their teaching staff, as well as the material and technical base do not meet the requirements, are deprived of a license for educational activities.

Kazakhstan has set an ambitious strategic goal-to enter the top 30 developed countries of the world by the middle of the XXI century, which cannot be achieved without a strong economy that requires highly qualified personnel.

In this regard, we are interested in the experience of foreign countries in improving the quality of higher education.

First, it is necessary to consider the concept of "quality of education" and its interpretation by scientists and specialists.

Fred A. Koslowski III [1] classified the quality of higher education as follows:

- ‘excellent quality’ as a result of the reputation and experience of academic staff;
- ‘quality based on production’, since the service meets the specifications and can thus be used by those for which it was developed;
- ‘product-based quality’, as the level of student learning on the basis of an appropriate curriculum and academic staff increases;
- ‘value-based quality’ is acceptable for achieving productivity at an affordable price;
- ‘based on user satisfaction’, taking into account the needs, desires and preferences of students.

Regina L. Garza Mitchell defined the quality of education from four perspectives: stakeholder perceptions, quantitative elements, course design elements, and external standards. She recommended that the definition of the quality of education should be aligned with the requirement of external agencies [2].

In this regard, the main goal of education, in our opinion, is not just the transfer of knowledge, but also the ability to teach a future specialist to independently analyze and correctly use information to make the right decisions, to work in a competitive business structure and business environment.

The modern market economy requires a radical change in the methods of training an economic specialist. The country's economy needs competent specialists, professionals who

are able to analyze complex situations in a short time and make optimal decisions taking into account the degree of possible risk when making wrong decisions. It is widely believed that the state of higher education in a country is an indicator of its future well-being.

The quality of education based on the improvement of educational technologies depends primarily on the competence and experience of the teacher. It is the competence of the teacher that determines the development of high-quality curricula for disciplines included in the state educational standard and curricula of specialties. It is also necessary to monitor curricula, including current courses of employers focused on the formation of competencies provided by the industry qualification framework and professional standards [3].

In their research, Akareem and Hossain identified aspects of quality higher education as the quality of students, faculty diplomas, academic features, and administrative support. At the same time, students ' qualifications and education, individual characteristics such as age, research interests, make a significant contribution to determining the quality of education. The following factors also have a great influence on the quality of education: socio-economic (including marital status, income), environment, and cultural [4].

Research shows that quality education is necessarily focused on students. Therefore, attention should be paid not only to the teacher's skills, but also to the learning environment, which should take into account the personal needs of students and, if necessary, provide them with assistance (financial, social and academic support, consulting services, etc.) [5].

According to ISO (International Standards Organization) standards, quality should be understood as the degree of compliance of the properties of an object (product, service, process) with certain requirements (norms, standards). Thus, the quality of higher education is a balanced correspondence of all aspects of higher education to certain goals, needs, requirements, norms and standards.

The group of standards of the ISO 9000: 2000 series is one of the criteria for creating a system of University management in general and the quality of education in particular. It focuses on monitoring processes and measurements that are necessary to obtain objective data on the implementation of processes and the functioning of the institution as a whole, as well as to make informed decisions on improving activities [6].

Today, in many countries, work has been carried out to introduce elements of the quality system and create a quality guide for educational institutions. The need to implement TQM (Total Quality Management) is related to the main task of education - improving educational programs and the quality of educational services in order to meet the needs of society and training specialists who meet the requirements of the current stage of development of the country's economy.
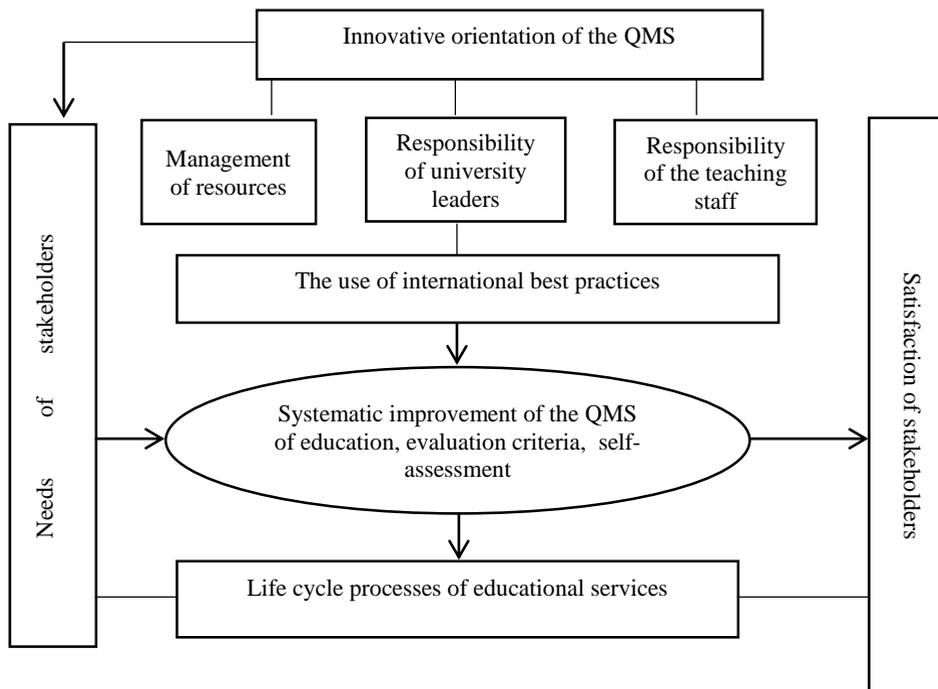
According to the principle of consumer orientation (ISO), an important and necessary element in managing the quality of education is the requirements of all stakeholders, including employers, to the level of training of specialists in higher education. These requirements, first of all, represent a set of professional characteristics that a specialist must possess in the field of their professional activity in order to most accurately correspond to the specialty and successfully perform professional duties.

Quality is considered as a relative concept that meets the priorities of different interest groups of beneficiaries. These beneficiaries are students, teachers, technical and administrative staff, parents, potential employees, funding institutions, and society [7].

On April 10, 2018, an international expert seminar on quality assurance and development of higher education was held in Berlin (Germany), where the accreditation system, approaches to quality, and issues of quality assurance in the international context were discussed [8].

Given the importance of improving the quality of educational services, it is necessary to develop and systematically improve a comprehensive system of quality management of

education (QMS) in each higher education institution in Kazakhstan. In our opinion, the basic principles of this system should be the interrelated elements and requirements presented in Figure 1. This model can be improved in accordance with the principles and requirements of a particular University.

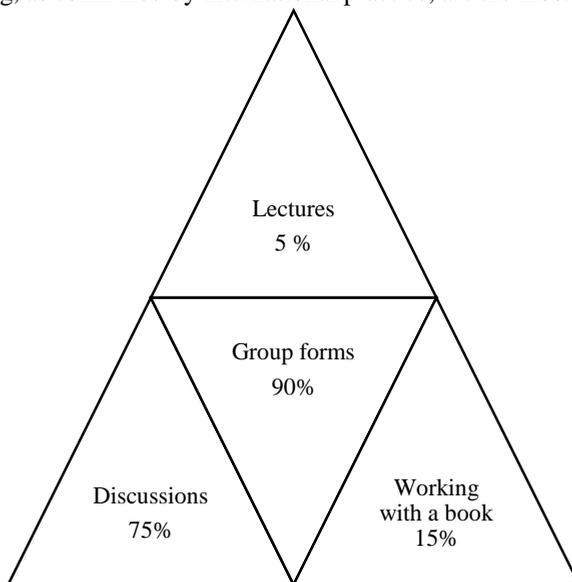**Fig. 1.** Conceptual approach to the implementation and development of the University's QMS [8].

In accordance with the increasing requirements for the quality of education, training technologies should be changed and improved. At present, the development of science and education is rapid, and new knowledge is rapidly becoming obsolete. Learning technology refers to a specific method of learning in which the main load for the implementation of various functions is performed by a human-controlled learning tool. When introducing new technologies into the educational process, the leading role is given to the means of education. The teacher does not teach students, but stimulates and coordinates their activities and manages the means of learning. The main task of the teacher, reflecting his pedagogical skills – is to choose the necessary content, apply the best methods and means of training in accordance with the program and the tasks set.

Regardless of the teaching methods, in order to increase the effectiveness of the educational process, it is necessary to create such psychological and pedagogical conditions under which the student can take an active personal position and fully reveal their abilities.

The main forms and methods of training aimed at improving the quality of training: role-playing games, business games, seminars, disputes, dialogs, independent work, defense of abstracts, term papers, reports, essays, testing, research, etc.

The use of interactive teaching methods in the educational process is associated with the maximum involvement of the student in the process, which further enhances the effectiveness of the material development and uses a personal-oriented training. The relevance and

importance of this issue is confirmed by the materials of scientific research, since group methods of training, as confirmed by international practice, are the most effective (Figure 2).

Fig. 2. The effectiveness of teaching methods used in the educational process (based on research materials).

The use of educational technologies is improving the efficiency of education and training and focused on the result of educational process - preparation of highly qualified specialists with fundamental and applied knowledge, the ability to successfully develop new, professional and management skills, flexible and respond rapidly to the changing socio-economic conditions. The choice of the most effective methods and means of training is one of the important points of the educational process. It is necessary to use various methods and means of training, constantly improving them.

In our opinion, among the innovative teaching methods and technologies that contribute to the qualitative development of the material, we can distinguish crosswords (especially effective for studying terms and concepts), as well as business games, creating clusters, and tests.

Crossword puzzles contribute to the development of students ' logical thinking. In the process of making a crossword puzzle, the student must carefully study the theoretical and practical material, refer not only to lectures and to textbooks, but also to additional and reference literature. In the course of this work, the student, no doubt, more deeply assimilates the received theoretical material and acquires additional information, which gradually accumulates and forms a higher level of knowledge. In addition, the non-standard form of the task stimulates a logical and creative approach to the task; therefore, not only cognitive activity is activated, but also the creative beginning of future specialists.

Educational technologies using business games include analysis of production situations, solving situational problems, and modeling professional activities in the educational process. The main goal of such technologies is to develop professional practical skills and the basics of professionally solving professional problems. Orientation in the development of these technologies is aimed at forming a system of professional practical skills, in relation to which educational information is a tool that provides an opportunity to dive into professional activities.

In our opinion, when preparing bachelor students, it is necessary to select students according to their inclinations and abilities from the 2nd to 3rd courses. Students who actively participate in scientific research (Olympiads, competitions, projects, etc.) can then enter the master's program in the scientific and pedagogical direction (the term of study is 2 years). Then they can continue studying for a doctorate. Students who want to pursue a professional career after graduation can apply for a master's degree in a specialized field with a period of 1 year.

Innovative activities of higher education institutions are based on the integration of science and education.

Currently, large state universities in Kazakhstan are being transferred to the status of research universities. For example, the Kazakh national technical University named after K. I. Satbayev was assigned the category of research technical University in 2014 (in 2017, the University was renamed Satbayev University).

Al-Farabi Kazakh National University is a leading national university. Al-Farabi KazNU entered the top 210 of the best universities in the world. In the near future, our University will also become a research one.

Thus, an important task of national research universities is the development of scientific research and its inclusion in industry in cooperation with leading scientific centers of the world, which will contribute to increasing the competitiveness of Kazakhstan in the international arena.

The analysis of scientific literature and practice has shown that the number of major scientists in universities is one of the conditions for the active influence of University science on the development of scientific knowledge and practice in General. The presence of doctors of science and scientific schools in the University is a strong factor in the development of research activities in them. The second factor is the teaching activity itself, which contributes to the active development of scientific thinking: new ideas are formulated, new arguments are made, and generalizations become more global and accurate. The third factor is the increasing status of the University as an initiator in the development of the regional economy and culture. The fourth factor in the development of research activities of a University teacher is to increase the prestige and provide additional financial income to the family budget. The fifth factor of research in higher education is the main way of training young scientists. Thus, the development of scientific activity in a university is, first of all, an effective training of scientific personnel.

In Japan, a study was conducted at the prestigious Waseda University to determine whether teachers in Japan have the conceptual understanding and methodological skills to participate in research activities. According to the results of the research, it is concluded that the training program does not include obligatory courses on research methodology. Apparently, there are only one or two elective courses that relate to one part of research education. According to the results of surveys of students, it was found that their teachers know their subjects well, encourage discussion, respect the opinions of students, give clear instructions and appreciate the contribution of students. On the other hand, students reported that their teachers did not ask them to conduct research and did not give credits for research projects. The professors believed that teachers should be given enough information about the research methodology in their education. They reported that the lack of professional scientific and pedagogical staff is one of the difficulties faced by schools of pedagogical education in trying to overcome this weakness. They believed that the curriculum for teachers should cover various aspects of scientific research, and that practical research should be given special attention in the curriculum for teachers. The professors also noted that students face difficulties when writing research papers, and believed that action research can help teachers successfully comprehend their own teaching practices. In particular, they believed that this

could improve teachers ' self-esteem skills and that research approaches could make learning more focused and constructive (i.e., students would be more actively involved in the learning process) [10]. It is interesting Russia's experience in integrating science, education, and industry is interesting. In 1990-2000, an effective innovative scientific and educational infrastructure was built in Tomsk on the basis of strategic development programs. It represented not only the educational institutions but also offices of commercialization of innovations created in universities and academic institutions, business incubators, innovative-technological centers, cluster development, special economic zone of technical innovation type "Tomsk". Currently, the Tomsk scientific and educational complex provides systematic support for the commercialization of research results and the creation of high-tech businesses. Two leading Tomsk universities - Tomsk Polytechnic University and Tomsk state University with the status of "national research University" - have become the integrating basis of the region's innovation infrastructure. In addition, in 2013, both universities were included in the list of 15 higher education institutions named " leading universities", aimed at improving the competitiveness of Russian universities by entering the list of 100 leading universities in the world [11].

Many discussions in international academic journals on management research relate to the gap between business research and practice. Some authors argue that little has changed since the publication of a Harvard Business Review article in 2005 in which the authors described business schools as being "on the wrong track" as a result of their focus on so-called research and hiring professors with no business experience. The business press regularly comments on the gap between teaching and research in business and the limited impact of research on the business profession. For example, the Financial Times notes 'the difficulty of quantifying and analyzing the impact of business schools on the business world' adding that 'the vast majority of managers will never knowingly come into contact with a business Academy' [12]. Similarly, the percentage of business school teachers who have significant contact with the business community is probably quite low.

Some authors offer to review and analyze the research topics of master's and doctoral dissertations in recent years in a sample of business schools from around the world and assess the degree of their practicality. Similarly, a detailed comparison of the most popular textbooks currently used in basic undergraduate and MBA courses (strategy, marketing, Accounting, Finance, human resources Management, etc.) with those used 10 or 20 years ago can also be informative [13]. All these measures will help bring academic education closer to practice and business organizations.

Of course, the gap between business research and practice is constantly narrowing. For example, in the al-Farabi KazNU, the opinion of employers is taken into account when drawing up curricula, and modern elective courses are included. Special attention is paid to the development of entrepreneurial abilities of students at al-Farabi KazNU. Courses "Entrepreneurship", "Innovative entrepreneurship" are taught not only to students of economic specialties, but also at other faculties. Students are involved in research projects, project development, and participate in start-up business project competitions.

In addition, employers, mostly University graduates, invite students practice. This is done on mutually beneficial terms, since employers can sign employment contracts with able graduates in the future. Currently, work is underway for the opening of departments of the University directly in manufacturing and in business organizations.

In Kazakhstan, until January 1, 2019, along with full-time education, there was an extramural form. This was convenient for working people who came to the University twice a year for the examination session. At present, all higher education institutions in the country have abolished the extramural form of education. The Ministry of education and science of the Republic of Kazakhstan has taken such measures to improve the quality of education,

since part-time students mastered only 65% of the volume that is provided for in full-time education. This affected their professional activities, especially since the higher education diploma was issued to all graduates of the same sample, without specifying the form of training. The Ministry offers a part-time system as an alternative to extramural learning, which provides a flexible schedule - lectures can be listened to in the evening and on weekends. In addition, it is planned to make some changes to this system. Students will study not 65%, but 100% of the amount of credits for the corresponding program, according to the State Compulsory Education Standard (SCES). At the same time, extensive use of remote technologies is envisaged. For this purpose, it is planned to develop proctoring (online support and control of the student). Currently, the Ministry is preparing a legal framework.

As you know, distance learning in the world has expanded significantly by the 1990s thanks to the use of satellite virtual classes, mobile phones, video conferences and the Internet.

In modern conditions, in the most General terms, higher education around the world is characterized as becoming more global, corporate and competitive. European universities face serious problems related to the world changes of the XXI century. There is currently a paradigm of lifelong learning, using flexible ways of providing knowledge, which replaces the traditional ways of learning at University. To solve the problem of transformation in learning the European Association of Distance Teaching Universities (EADTU) launched the EMPOWER project in 2015 to enable EADTU to share the experience of distance education universities in this area. The EADTU project is organized in 12 areas, one of which is to support students as a basis for their success. The goal of the project is to enable students to become independent learners throughout their lives in open, online, and mixed learning environments, as well as to improve academic performance, integration, and satisfaction [14]. It must be remembered that distance education has both advantages and disadvantages [15].

The main advantages of distance education:

1.   Students continue to work in parallel with their studies: the majority of students who choose distance education are those who do not want to leave their jobs, but also want to get a higher education.

2.   Saving money: for any given program, distance education fees can be much more affordable than paying for a regular degree on campus. Students who are looking for cost-effective options can opt for a distance learning program.

3.   No time is spent on the way to the University (College) and back, waiting for a bus or train. The class is at home, the study material is on the table, and the electronic material is on the computer. Students who do not have enough free time can turn to distance education as a choice and continue it without leaving home.

4.   Distance education allows self-disciplined and self-motivated people to learn at their own pace, regardless of other students in the class or group. Assignments for term papers are issued in advance, you need to pass it on time, but you can study and work daily. If there are doubts or questions when performing the work, there are discussion forums, chat centers with teachers and full support from the distance education provider.

5.   Except when you have to attend an online tutorial at a specific time or a lecture via video conference, students can study whenever they want and wherever they want (in their garden, on the sofa in the living room).

Disadvantages of distance education:

1.   Without the teaching staff nearby for personal interaction and without classmates who can help with constant reminders of upcoming tasks, the chances of distraction and losing control of deadlines are high. You must remain motivated and focused to successfully complete the distance learning course.

2.   Although the cost of a distance education program is generally cheaper than a regular program, hidden costs may be involved. For example, if a distance learning course is offered online, the upfront cost is installing a computer and getting a reliable Internet connection. You may need to purchase additional resources: printer, webcam. Costs may be recurring, such as maintenance and electricity costs.

3.   Over-reliance on technology can be a serious flaw in distance learning, especially when learning takes place in an online environment. Any malfunction of software or hardware can lead to a halt in the class and interrupt the learning process. Similarly, if a student does not understand computers and technology, his learning experience may be unsatisfactory.

4.   Distance education often suffers from a lack of good enough teachers. In other cases, even if the teacher is good, he or she may not feel comfortable teaching in an online environment. Sometimes the technology may not fully meet the requirements for the organization and design of the course. The student loses in all these scenarios. Distance education providers should understand that it is not technology that teaches students, but good and effective teachers.

5.   Despite the fact that distance and online education is beginning to gain recognition, there are still many fraudulent and non-accredited providers. With the increase in the number of distance / online programs, the number of fraudulent operators is growing. This affects the credibility of recognized degrees of distance learning among potential students.

Despite these obvious drawbacks, distance learning is gaining popularity among students like never before, and many students are happy with their learning experience. With further development of technologies and advanced training to adapt teachers to this new way of learning, the disadvantages of distance learning can soon be eliminated [15].

In addition to credit courses, major universities now offer 'MOOC' or massive open online courses - a training course with very interactive participation using e-learning technologies and open Internet access, a form of distance education. MOOC is characterized by short videos, interesting tasks, and active communication between teachers and students on interactive forums.

MOOC (s), a term introduced in 2008 to describe an open online course offered by the University of Manitoba in Canada. Since then, a number of topics and platforms have emerged, and the term has been described as 'the educational buzzword of 2012' by Daniel (2012), reflecting a broad interest in the concept. MOOC has been widely discussed in various media, including blogs and specialized and popular press, however this includes 'thinly disguised promotional material by commercial interests … and articles by practitioners whose perspective is their own MOOC courses' according to Daniel (2012) - [16].

Currently, thanks to the MOOC, it has become possible to get knowledge from the best universities in the world. Anyone who has at least a little free time and a computer with Internet access, who speaks English well, can start studying with the best teachers of Harvard University, Stanford University, and Massachusetts Institute of Technology, which are among the top three universities in the world (QS). The Udacity platform has implemented a 'Job Placement Program' to facilitate the employment of its listeners. This platform automatically records student activity (academic performance, social activity within the course, etc.) and generates detailed profiles and Resumes. Potential employer's sign a contract with Udacity and for a fee get the opportunity to select the best students from any geographical area of the world and fill vacant places with them [17].

In 2016, Al-Farabi KazNU and the National Academy of Sciences of higher education with the support of the MES of Kazakhstan presented the national platform for open education. This initiative to create the first domestic online education platform was joined by

12 leading universities in Kazakhstan. On the basis of Al-Farabi Kazakh National University, technological and methodological support, advanced training courses for other universities of the country are carried out. All this will allow domestic universities to create and exchange high-quality educational programs using modern information and communication technologies, and increase competitiveness in the international educational environment.

3 Conclusion

Ensuring high quality education is a key issue, as the development of technology and economic growth require highly qualified personnel. In the context of global competition in the market of educational services, the problem of ensuring the high quality of education is being paid increasing attention not only to participants in the educational process, but also to scientists and researchers involved in the development of education. The quality of educational services directly affects not only the demand for graduates in the labor market, but also the effectiveness of the educational organization.

In Kazakhstan, as in other countries, the problem of improving the quality of education is faced by all universities, the number of which is steadily decreasing as a result of comprehensive state certification.

The quality of educational services must comply with the global standards of the ISO series, and the quality management process of educational services must comply with the TQM system.

Reducing the gap between business research and practice is an important issue and the integration of science, education, and industry. The task of constantly updating knowledge throughout life, as required by modern conditions, on-the-job training is solved with the introduction of new methods of training using information technologies. MOOC or Massive open online courses, a training course with very interactive participation using e-learning technologies and open Internet access, also contribute to improving the quality of knowledge. The world's leading universities Harvard, Stanford , and Massachusetts Institute of Technology, which are among the top three universities in the world according to QS World University Rankings, are actively working on their platforms, attracting students from anywhere in the world.

Kazakh universities, the list of which is headed by the Al-Farabi Kazakh National University, included in the top 210 best universities in the world, also tend to improve the quality of education for training highly qualified competitive specialists. The level of training and knowledge of foreign languages allows students and undergraduates in the framework of the external mobility program to gain international experience in the educational field, expand professional skills, gain experience in international culture and useful language practice.

In order to attract foreign students, undergraduates and doctoral students to the Al-Farabi KazNU, groups with English language training have been created, the national open education platform (MOOC) has been opened, and interesting online courses are being created by teachers of various faculties. All these measures are aimed at improving the quality of education and the competitiveness of graduates.

References

1. F. A. Koslowski III, Quality Assurance in Education, **14(3),** 277-288 (2006)
2. R. L. G. Mitchell, New Directions for Community Colleges, 89-94 (2010)

3. G. Manarbek, S. Kondybayeva, G. Sadykhanova, G. Zhakupova, B. Baitanayeva, Proceeding of the 33rd International Business Information Management Association Conference, 4936-4945 (2020)
4. H. S. Akareem, & S. S. Hossain, Journal of Marketing for Higher Education, 11-33 (2012)
5. H. Fabrice, & L-R. Soleine, Review of literature on Quality Teaching. Psychology, 1-50 (2008)
6. N. O. Yakovleva, E. V. Yakovlev, Proceeding Pacific Science Review, 1-6 (2015)
7. V. A. Haseena, A. P. Mohammed, Journal of Education and Practice, **6 (4),** 100-106 (2015)
8. O. Bartz, International Peer Learning Conference, 1-27 (2018)
9. V. Furcov, VI International Conference. Business Education Quality Assurance Systems in the RK: Innovative Approaches, 111-114 (2006)
10. F. H. Eid, Research in Higher Education Journal, 1-25 (2014)
11. A. Kartashova, T. Shirko, I. Khomenko, L. Naumova, Proceeding Worldwide trends in the development of education and academic research, 619-627 (2015)
12. D. Bradshaw, The business of knowledge. The Financial Times (2009). Retrieved from http://www.ft.com/businesseducation/future-of-business-schools
13. I. Dostaler, T. J. Tomberlin, Canadian Journal of Higher Education, **43(1),** 115-128 (2013)
14. A. Sànchez, E. Paniagua, & O. Simpson, Journal of Interactive Media in Education, 1-10 (2018)
15. N. A. Bijeesh, Advantages and Disadvantages of Distance Learning. Retrieved from https://www.indiaeducation.net
16. T. R. Liyanagunawardena, A. A. Adams, & S. A. Williams, *MOOCs: A Systematic Study of the Published Literature 2008-2012* (2013). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1455/2531
17. Abdrakhmanova, M., Mutanov, G., Mamykova, Z., & Tukeyev, U. Springer, Cham.G. (2018, September). **DOI:** 10.1007/978-3-319-98443-8_32