In modern conditions, it becomes more obvious that national higher education systems can not develop beyond global processes and trends, beyond the demands of the world labor market. In this regard, multidimensional education, the internationalization of education becomes a purposeful policy of the state. The priority goals included both state responsibility for higher education and global academic mobility.

With the development of ICT, the concept of mobility has become seriously enriched. Nowadays mobility has more to do with the movement through the virtual space. Today, under the mobility of a specialist, we increasingly mean its virtual mobility. The problem of organization of virtual mobility is brand new for Kostanai region, and Kazakhstan in general.

The aim of the research is to analyse the present state of academic mobility in Kostanai region, and to define the challenges brought in by new demands of 21st century education, namely organizational problems of virtual form of academic mobility.

Scientific literature review, critical analysis of the results of international activities of the institutions, analysis of the professional activities of the academic staff, monitoring, observation, and a sociological survey were used to answer the questions of the research.

As a result, virtual mobility challenges for Kostanai regional higher educational institutions were defined. Topics that are considered key issues to be solved before being able to really implement virtual mobility into mainstream education include accreditation and credit transfer, overlap and compliance of academic calendars, compliance with number of credit hours given for particular course implementation, and joint curriculum development. Furthermore, virtual mobility competences of higher education teachers (including intercultural competence, language management, digital literacies and skills) need improvement. At the same time, there is a lack of concrete scenarios, models and implementation procedures, and best practice examples for implementing virtual mobility. Therefore, virtual mobility programs remain a challenge for all actors involved.

**Keywords:** multidimensional education, academic mobility, physical mobility, virtual mobility, curriculum development, joint project.

The challenges for the field of education in the 21st century are to prepare all students to learn and to enter a global world able to be competitive specialists, and lifelong learners. The effectiveness of educational activities is largely determined by academic mobility, without which it becomes increasingly difficult to implement multi-dimensional educational functions related to the training and development of a competitive person.

**Multidimensional Education and Virtual Mobility.** Classical education with its orientation to books can give a small amount of knowledge in comparison with what is now available in the Internet. In these conditions, a new philosophy of multidimensional education is being formed. There is no unified definition of multidimensional education. As the adjective “multidimensional” describes anything with many different parts or aspects, some scientists consider multidimensional education from education aspects as target, system, process, value, and result.

Describing something as “multidimensional” implies that it is complex. Thus, multidimensional education is studied through its elements: the interacting successive educational programs and state educational standards of different levels and directions; the networks of educational institutions implementing them, different in organizational and legal forms, and types; the system of
educational management bodies and their subordinate institutions, enterprises and organizations; educational sub-systems of different levels, aimed at achieving the goals of education, upbringing and development of the individual.

The adjective “multidimensional” also means “having or involving or marked by several dimensions or aspects”. In this regard Colbeck speaks about two education dimensions:

1) Space-Time dimension, i.e. *when, where* and *how* the educational process is being conducted;
2) Human and Personal dimension, which he reveals through heart (*emotion*), mind (*intellect*), soul (*spirit*), strength (*body, action*) and neighbour (*other people*) [6].

Corrigan, Grove and Vincent when describing their practical and integrated model for using data to inform school improvement initiatives, suggest seven dimensions of education, i.e. community engagement, curriculum expectations, developmental perspectives, educational attitudes, faculty fidelity, leadership potential, and school climate [7].

Developing Colbeck’s idea of multidimensional education, we consider it through scientific-educational space, within which social relations are carried out and efforts are coordinated between the subjects (educational actors) of the scientific-educational space in order to meet the needs of the society and the individual. Scientific-educational space promotes flexible learning in an interactive educational environment with the use of content from around the world (Fig. 1). The flexible learning can provide not only a multidimensional content of training, but also a high quality education, corresponding to the international level.

With the advancements of ICT the mobility of both educators and learners is becoming more widely implemented. The Internet not only provides access to educational content, but also provides the teacher with multi-dimensional forms of remote interaction using such digital tools as Skype, chats, forums, blogs, webinars, social networking, etc. In these conditions, virtual mobility is becoming the leading competence of modern specialists. The virtual mobility of the teacher is the ability to apply several types of information and telecommunication educational technologies in pedagogical activity.

**Virtual Mobility: Definition, Characteristics, Elements.** As it was mentioned above, the concept of mobility was widely used in the XX century with the advent of cars and other vehicles that allow a person to move physically in space quickly. With the development of information technology, the concept of mobility has become seriously enriched. Nowadays mobility has more to do with the movement through the virtual space. Today, under the mobility of a specialist, we increasingly mean its virtual mobility.

One of the first sources, in which there were ideas of virtual mobility, became a widely cited research papers by S. Van de Bunt-Kokhuis, where an interesting, albeit specific, definition of the virtual mobility is given: “the collaborative communication between a faculty member and his/her counterpart(s) mediated by a computer. More often, these meetings will be interactive and take place across national borders and across time zones” [5]. More fully the conception was presented in the report on the “Humanities” project [10], which distinguishes the following elements of virtual mobility: inter-faculty lectures and/or educational materials; international student selection; intensity of information flows; international accreditation of achievements; multilingualism; international recognition and accreditation of academic achievements; the complementarity of various types of physical mobility, traditional lectures and virtual mobility. In the “Humanities” project the concept of virtual mobility is considered to be “effective networking” whereas the “Spot+” project team widens the understanding of this concept and brings in two forms of mobility: physical and virtual [13, p. 12].

In 2003–2005, a new approach appeared, describing virtual mobility in terms of mobility as an expression of physical mobility existing in virtual space. J. Silvio (2003) characterizes...
virtual mobility as a new phenomenon and points to the fact that it is a movement “from one place to another in a new space called virtual space” enabled by computer-mediated communication” [12, p. 3]. Similarly to J. Silvio, Vilhelmsen and Thulin [18, p. 1] defined virtual mobility as “physical transportation and face-to-face contacts, replaced, complemented, or even generated by virtual ones”. In a much later publication by Vriens et al. [20, p. 1] an absolutely opposite approach to virtual mobility is proposed: “virtual mobility different from physical mobility, but it can be used as an alternative for it”. They defined virtual mobility as the set of ICT-supported activities that realize cross-border, collaborative experiences in a context of teaching and/or learning.

Beginning approximately with 2006, approaches to virtual mobility on the basis of education became more inseparable from mobility in general, and the two approaches were brought together. Virtual mobility is considered as “the opportunity to take a course abroad without leaving the country” [4], or “the use of information and telecommunication technologies (ICT) to obtain the same benefits that can be obtained through physical mobility, but without the need to move” [8]. Other authors expand the definition of the virtual mobility concept, supplementing it with new characteristics, such as the ability to choose duration, international measurement, the possibility of various forms of organization of activities [11, p. 4], intercultural experience [16], agreements on cooperation between educational institutions [9] and others.

M. Tereseviciene, A. Volungeviciene and E. Dauksiene [15] suggest the following characteristics of virtual mobility:

1) the form of learning or collaboration;
2) the cooperation of universities as well as students and teachers;
3) international study experience with the stress on cultural aspects, and different kinds of activities that lead to virtual mobility;
4) the form of mobility, which can be a supplement or substitute for physical mobility.

A more comprehensive interpretation of virtual mobility, which includes various aspects and can be considered as a generalization of the concept, is given in the frames of the “TeaCamp” project [14], where virtual mobility on the level of higher education is defined as a form of learning, research, communication and collaboration, based on the following characteristics:

- cooperation of at least 2 higher education institutions;
- ICT supported learning environment;
- collaboration of people from different background and cultures working and studying together, creating a virtual community;
- a clear goal and clearly defined learning outcomes;
- exchange of knowledge and improvement of intercultural competences as its main purpose;
- as a result of which the participants may obtain ECTS credits and/or its academic recognition will be assumed by the home university;
- visibility of university in higher education area;
- integration of ICT into their mainstream academic and business processes.

Based on the above analysis of virtual mobility definitions, it is possible to define and classify different types of virtual mobility activities or elements. In the absence of common agreed or established categorization of virtual mobility activities, we suggest classification in accordance with the approach of H. Bijnens and I.O. de Beeck [3] and the developments and findings of the working group on the “Being mobile” project [2]:

1) Virtual course or seminar:
- participation in courses or seminars conducted by an international educational institution, being at home, and vice versa;
- joint development and/or conduct of courses by two or more educational institutions or groups of teachers of these institutions;

2) Virtual curriculum:
- a training program provided by a virtual educational institution;
- joint development and/or implementation of training programs by two or more institutions/group of teachers from different educational institutions;

3) Virtual student practice/internship;

4) Virtual activity in support of physical mobility.

Thus, summarizing virtual mobility characteristics, practices and concepts, as defined by various authors and project consortiums, virtual mobility can be interpreted as educational opportunities that are no longer location dependent and allow for collaboration with foreign students and teachers [11].

**Combining Virtual and Physical Mobility.** Of course, virtual collaboration should not take place in isolation of physical mobility programs.

Students of Kostanai State Pedagogical Institute (further – KSPI) are given the unique opportunity not only to learn from leading professors of the universities-partners, such as the Univer-
Cooperation with foreign and Russian universities is an important part of the modern educational process. For several years, the Department of Foreign Languages of KSPI has been developing scientific and educational contacts with Shadrinsk State Pedagogical University. Educators from Russian partner university conduct lectures, seminars and workshops both face-to-face and on-line for students and institute staff.

In the framework of the program ERASMUS + A. Baitursynov Kostanai State University (further – A. Baitursynov KSU) signed inter-institutional agreements with such institutions as the University of Ostrava (Ostravská univerzita, the Czech Republic); the University of Lodz (Uniwersytet Łódzki, Poland) and the University of Neuhausheim (Universität Hohenheim, Germany).

Students and staff of the A. Baitursynov KSU have the opportunity to do an internship as part of academic mobility at the partner-universities of the CASIA project: the University of Natural Resources and Life Sciences (Vienna, Austria); the University of Hohenheim (Stuttgart, Germany); Slovak University of Agriculture (Nitra, Slovakia); the University of Granada (Granada, Spain); Wageningen University (Wageningen, Netherlands); Czech University of Life Sciences (Prague, the Czech Republic); the Swedish University of Agricultural Sciences (Uppsala, Sweden). The partner universities of A. Baitursynov KSU within the MARCOXXI project are the following: the University of Göttingen (Georg-August-Universität Göttingen, Göttingen, Germany); Warsaw University of Life Sciences (Warsaw, Poland); the University of Santiago de Compostela (Universidade de Santiago de Compostela, La Coruña, Spain); Masaryk University (Masarykova Univerzita, Brno, the Czech Republic); the University of Chemical Technology and Metallurgy (Sofia, Bulgaria); the International School of Law and Business (Vilnius, Lithuania); Vrije Universiteit Brussel (Ixelles, Belgium).

It is also possible to use the form of virtual exchange to support and contextualise physical mobility with considerable success. So, within the framework of the joint project ACADEMICA (Accessibility and Harmonization of Higher Education in Central Asia through Curriculum Modernization and Development ACADEMICA Project № 561553-EPP-1-2015-1-BG-EPPKA2-CBHE-JP) co-financed by the European Union Erasmus +, combines phases of virtual and physical mobility of the academic staff of KSPI. This year KSPI has hosted a guest lecturer, Michela Tramonti, from the partner university. KSPI's ACADEMICA team visited Guglielmo Marconi University (Rome, Italy) to participate in the discussion group of the results of the current development of the training course for the formation of digital competence. The e-learning course for KSPI lecturers was held within the framework of the joint project.

During two study years at the Department of Foreign Languages, KSPI, “TOEFL Format. Strategies and Tips” virtual course is held together with Arun Dahi, the undergraduate of Deakin University (Australia). Students have an opportunity to get first-hand information on individual strategies of behavior in the exam and the most effective methods of preparation for the TOEFL test.

As the experience shows such combination of virtual and physical mobility facilitates intercultural experience between students and their staff, through the organization of trans-border discussion groups, international seminars, or by setting up of an international learning community; whereby staff and students acquire interpersonal and intercultural skills and get a chance to broaden their cultural, social and political boundaries. By providing supplementary courses virtual mobility enables students to further individualize and specialize their portfolios.

Thus, the incorporation of information technologies in educational process is the best way to create a professional multidimensionality of specialists, their ability to combine several directions, and simultaneously carry out several types of activities. Due to the virtual mobility of specialists, there must be a significant intensification of professional activity, a significant increase in labor productivity.

**New Challenges.** Virtual mobility of teachers and students enables them to benefit linguistically, culturally, and educationally from the experience of other European countries and of their (academic) fields of study. Furthermore, virtual mobility encourages (international) collaborations and facilitates the building of partnerships among individuals and among institutions.

Nevertheless, virtual mobility of students and the academic staff of both A. Baitursynov
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KSU and KSPI sets new challenges for the institutions to adapt and further develop their pedagogical models: the change in content delivery and the change of learning tools require different pedagogical and didactical strategies and approaches when compared with the traditional classroom instruction. Educators that are used to teach in a traditional classroom environment find teaching in online and distance based environment more difficult as it requires different competences and new attitudes towards student learning and the learning process itself. Aly [1] refers to behaviours that may occur and competences which are needed to be devolved when teachers change their classroom teaching to teaching in an online learning environment. They include:

- anxiety about the use of technology: apprehension associated with change can be a serious setback in moving towards effective online learning; teachers are frequently apprehensive of using tools they are not so comfortable with when compared to their students. The use of these new tools promotes a sense of anxiety that leads to insecurity;

- management acceptance: if higher education teachers find that the new educational approach reduces the importance of their role as teachers and mentors, and their key role in the learning process they might interfere negatively with the use of online learning;

- instructional design: working in an online learning environment requires changes in both pedagogical and technological competences urging the development of new curriculum design and the promotion of a lifelong learning attitude.

Another challenge is the curriculum development in virtual mobility educational contexts requires from higher education teachers to think differently when facing paradigms such as the development of a new teaching presence, the design of new curricula, the design of learning materials adapted to different learning environments, the application of different learning strategies and the development of new assessment approaches, models and tools.

By jointly creating courses special attention has to be paid to need to respect intellectual property rights. Currently there is little or no control over individual contribution rights, or a clearing system for re-using existing materials, which makes it difficult to create a truly open and mobile market of people with the necessary skills.

The development of virtual learning technologies has the potential to facilitate more flexible curricula and new modes of study, which in turn may require new approaches to validating and accrediting learning. If students receive credits for a course their motivation to participate actively is higher. But credit transfer remains a problem. The European Credit Transfer System has been proven an excellent tool for the creation of transparency of the study programmes, for “building bridges” between institutions and widening the choices available to students. The system makes it easier for institutions to recognise the learning achievements of students through the use of commonly understood measurements – credits and grades – and it also provides a means to interpret national systems of higher education. But we notice that ECTS is not yet incorporated in some universities, and if so, similar courses may have different number of credits in home university and host university.

Moreover, the ECTS is based on the workload of the students so it may not be appropriate for online learning where students might be free to learn at their own speed. The addition of levels of study and the adoption of learning outcomes as the criteria upon which it is based are urgently needed [17]. Within the scope of Virtual Mobility we also need to add that the workload of students usually differs a lot from university to university. As practice shows, credit transfer is often based on existing bilateral partnerships, or on personal links (at managerial level). Bilateral partnerships can be formal, i.e. strictly following the rules of each university, while exchange of credits based on personal links is more the result of “bargaining” between individual professors. This is not a solution for the long-run [17].

To organize virtual mobility and give students the opportunity to work with foreign teachers and students, the academic calendars must overlap. When studying abroad students move to the host country and adapt to the academic calendar of the host country. But to collaborate virtually – while staying in your home country – it is much harder to adapt to the academic calendar of the host country, not only for the students, but also for the teachers. Sometimes, while trying to create virtual e-modules, the main factor of failure is timing.

In the context of professional activities, virtual mobility is the ability to apply several kinds of information and telecommunication technologies to professional activities. This is the ability to use the content of the Internet globally, to be in contact to ensure the presence effect, to exchange
The actual information over various wire and wireless channels, using multidimensional forms of virtual communications: E-mail, ICQ, Skype, Adobe, Talk Fusion, etc. Unfortunately, the survey conducted at KSPI in 2016–2017 proved that only a small part of its teachers and students have the necessary level of digital skills and digital literacies to effectively collaborate in virtual classrooms. Thus, the importance of teachers and learners’ digital skills development is unquestioned. However, teaching digital skills and literacies does not mean teaching them in a vacuum, but doing so in an authentic context that makes sense to learners. It means a bigger number of both students and staff should be involved in virtual mobility.

Thus, the necessity to shift from traditional classroom teaching to virtual classroom environment brought forward challenges not only for teachers and students, but also for universities. All educational actors have to adapt to the new requirements, new opportunities, and also to new practices.

Conclusions
1. The existing initiatives, practices, and empirical research results acknowledge the fact that not only face-to-face academic learning is valued and that universities not only create knowledge, but they also build bridges between various cultures and create a new potential for the organization to offer an international experience for students and teachers. And Kostanai region higher educational institutions are not exception in these attempts. The institutions have an effective networking for the traditional form of academic mobility of students and faculty members.

2. The introduction of new information and communication technologies enhanced the potential for “virtual” cooperation. It is fair to admit that virtual educational environment is newer to some countries than others. In the US or European countries, for example, virtual mobility only to some extent is really a novel phenomenon. Although in the eyes of many, “virtual” or online learning is an educational revolution.

3. If summarizing all definitions of virtual mobility, it can be addressed in two possible ways. On the one hand, virtual mobility is a valuable alternative for physical mobility. It enables students to take part in courses at other universities without having to leave their home university. On the other hand, virtual mobility will not replace traditional international exchanges and cooperation, so can be used to prepare, support and follow-up physical mobility. Both with physical and virtual mobility students can gain linguistic, cultural and educational experiences that increase their value in the labor market.

4. The reality of A. Baitursynov KSU and KSPI suggests that lack of practice in organizing and implementing virtual mobility studies require improvements in competences of Kostanai higher education teachers and changes in teacher training. Designing a technology enhanced curriculum and the organizational process of teaching/learning for the purposes of international virtual mobility should be based on a certain methodology and theoretical dispositions.

5. Summarising, we want to refer to what the students of the BEST symposium in 2006 on virtual mobility formulated as follows: “There are several advantages of virtual mobility such as having much more easily cultural exchanges interactions between students, a very large flexibility coming with it and low costs of this mobility system. Virtual mobility can bring a development of different skills and also a huge individual progress” [19].

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АКАДЕМИЧЕСКАЯ МОБИЛЬНОСТЬ В КОСТАНАЙСКОЙ ОБЛАСТИ: ПРОБЛЕМЫ ХХI ВЕКА

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В современных условиях становится все более очевидным, что национальные системы высшего образования не могут развиваться вне глобальных процессов и тенденций, вне рамок требований мирового рынка труда. В этом отношении многомерное образование, интернационализация образования становятся целенаправленной политикой государства. В этих условиях приоритетными целями становятся ответственность государства за высшее образование и глобальная академическая мобильность.
Теория и методика профессионального образования

С появлением информационных технологий серьезно обогатился смысл понятия мобильность. Теперь мобильность больше связана с виртуальным перемещением в пространстве. Сегодня под мобильностью специалиста мы все больше подразумеваем его виртуальную мобильность. Проблема организации виртуальной мобильности совершенно нова для Костанайской области и Казахстана в целом.

Целью исследования является анализ современного состояния академической мобильности в Костанайской области и определение проблем, связанных с новыми требованиями образования в XXI веке, а именно организацией проблемами виртуальной формы академической мобильности. В процессе исследования были использованы следующие методы исследования: обзор научной литературы, критический анализ результатов международной деятельности учреждений, анализ профессиональной деятельности академического персонала, мониторинг, наблюдение и социологический опрос.

В результате были определены следующие проблемы организации виртуальной формы академической мобильности в высших учебных заведениях Костанайской области: соответствие учебных планов; одинаковое количество кредитов (часов), отводимых для изучения конкретного курса; учет кредитов; совместная разработка учебных планов. Кроме того, рассматривая виртуальную мобильность как профессиональную компетенцию временного педагога, необходимо отметить необходимость формирования таких ее составляющих как межкультурной компетенции, иноязычной коммуникативной компетенции и ИКТ грамотности. В то же время, ощущается нехватка конкретных сценариев, моделей и процедур внедрения, а также примеров передового опыта реализации виртуальной мобильности в вузах Казахстана. Таким образом, программы виртуальной мобильности остаются проблемой для всех участников образовательного процесса.

Ключевые слова: многообразное образование, академическая мобильность, физическая мобильность, виртуальная мобильность, разработка учебных программ, совместный проект.

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