LOOK ACADEMIC PUBLISHERS
OPEN ACCESS

INTERNATIONAL JOURNAL OF ENVIRONMENTAL & SCIENCE EDUCATION
2016, VOL.12 , NO.18,13167-13181

Distance Education Opportunities for Students with Disabilities in Russia: Problems and Solutions

Sergey Mikhailovich Vasin [a] & Leyla Ayvarovna Gamidullaeva [a]

[a]Penza State University, RUSSIA

This article aims to discuss the problems and solutions in the distance education of students with disabilities in Russian Federation. As a methodological basis of research at different stages the method of systems analysis was used. The methods of mathematical and multivariate statistics, factor analysis and benchmarking, as well as the method of questionnaire survey and expert estimates were applied in the course of the study. The objects of the research were 15 higher educational institutions operating in the Penza region of the Russian Federation. Authors calculated and constructed the integral index of the organizational potential in order to reduce the number of indicators into one index, minimize informational loss, and also to reveal the structure of organizational potential, which in turn makes it possible to draw conclusions on the contribution of a specific type of potential into the overall result. The research results may be implemented into managerial practices of institutions of higher education in order to improve and enhance the education process of students with disabilities. It would improve disabled people's living standards and provide their greater contribution to the Russian economy.

KEYWORDS
e-learning, distance education, higher education, students with disabilities

ARTICLE HISTORY
Received 10 October 2016
Accepted 28 December 2016

Introduction

The concept of modernization of Russian education proclaims the slogan of equal access for young people to a quality education that meets their interests and inclinations, regardless of the income of the family, place of residence and state of health. All over the world the spread and development of distance education is one of the areas of ensuring the implementation of this requirement.

CORRESPONDENCE Leyla Gamidullaeva ✉ ingamidullaeva@gmail.com

Standard and legal regulation of professional education for the disabled is provided by the legislation of the Russian Federation in the field of education, in accordance with international standards, including the Convention on the Rights of Persons with Disabilities, which provides guarantees equal rights to education for the disabled.

Letter of the Ministry of Education and Science of the Russian Federation "On the creation of conditions for the education of children with disabilities and children with disabilities," said that one of the components of the socialization of children with disabilities and special needs is to ensure of their socially useful significance in the future. In our view, this is possible only when they receive competitive professions. The low competitiveness of children with disabilities, which actually exists today, poses serious social and economic consequences, especially discourage the employment of people with disabilities and social activity.

Increasing the level of education and social integration of people with disabilities among their healthy peers on identity formation stages will allow to improve the level of their economic activity and will contribute to a high level of employment for this population, which will lead to their relative independence from social benefits (disability pension, monthly payments, and etc.).

For the last two decades the concept of education has been changed dramatically, more specifically, distance education has emerged as not only a reliable alternative to traditional education (Moore, 2003) but also a unique integrated system where learners can actively participate, create, and share in the educational process without being physically present at the school, university, or any other institutions. The term 'distance learning' is often used as a synonym of 'distance education', however they are not identical. Distance education is a system and process of presenting learning materials to the students. Distance learning can use varieties of form and usually characterized as the following: 1) separation of the teacher, the learner and learning materials in space and time and 2) interactions (teacher – learner, learner –learner, learner – materials) with the help one or several technologies (it is not necessary to use only electronic technologies). Distance education has recently been revolutionized by the recent development in information and communication technologies (ICTs) and it has emerged as a unique and integrated phenomenon of learning and teaching. Although many researchers have tried to define different forms of distance education, the word distance education, online learning, eLearning, and online education are often used interchangeably in the contemporary distance education literature.

Increasing survival rates in severe illnesses and traumatic injuries have led to an increase in the number of disabled people of working age or younger. According to the World Health Organization (WHO), there are about 650 million people with disabilities worldwide.

According to UN statistics, every tenth person on the planet has a disability, one out of 10 suffers from a physical, mental or sensory impairment, and at least 25% of the population suffer from health disorders.

According to official statistics, China has more than 60 million disabled people, that makes about 5% of the total population; in the US there are 54

million of the disabled (19%), in Russia - 10 million (about 7% of the total population). According to the Agency for Social Information, there are at least 15 million. Many young people with disabilities and children are among this group. At the beginning of 2014 in the Russian Federation 580,000 children with disabilities was registered.

Education is one of the factors that can help them overcome their own limitations. More specifically, distance education technology has opened up a new horizon for this disadvantaged group to receive education, develop self-confidence and become an active member of the society. In this article we are going to discuss disabilities issues in general and implications of distance education technology for disabled students in Russia.

Theoretical background

The UW Distance Learning program was established in 1912. In 1995, the first UW Distance Learning course was offered online. By the year 2000, all UW Distance Learning courses had been converted to Internet-based courses. The UW Distance Learning program now offers more than 300 courses serving more than 10,000 students each year. The program uses a course delivery system that was developed mostly internally with assistance from the central UW computing services organization, Computing & Communications. UW Distance Learning courses use tools for discussions, assignment submission, and peer review that were developed by the Educational Technology Group. The Educational Technology Group works closely with Computing & Communications in developing electronic tools, strategies, and training for faculty members and has a long history of working closely with the University's Access Technology Lab, which falls within the management structure of Computing & Communications. The Educational Technology Group, therefore, has always included accessibility considerations in product design and implementation, assuring that the Educational Technology Group tools used by the UW Distance Learning program have been for the most part accessible to students and instructors with disabilities.

Course content is delivered via MyUWCourse, an interface developed by Computing & Communications. Students log into MyUW with their network identification code; if they are enrolled in a distance learning course, they see a link to it on their MyUW course page. This link leads to a syllabus page with links to key course elements—lessons, assignments, and relevant Educational Technology Group activity pages. The course design is simple and straightforward, with few layers and links to follow to access the content.

They concluded that worldwide, distance learning programs offer opportunities for education and career enhancement for those who have access to a computer and the Internet. However, some potential students and instructors who have access to these technologies cannot fully participate because of the inaccessible design of courses. These individuals include those with visual and hearing impairments. The University of Washington Distance Learning program and the campus unit that provides computer access for students and instructors with disabilities teamed up with DO-IT (Disabilities, Opportunities, Internetworking, and Technology), a national center that promotes the use of accessible technology, to improve the accessibility of the University's distance learning courses. They also provide an overview of access

challenges and solutions for people with disabilities, legislation, accommodation and universal design approaches to accessibility, and standards and guidelines.

One of the software tools for creating and managing distance courses, widely used in our country, is Moodle (Modular Object-Oriented Dynamic Learning Environment). Moodle is a course management system with an open source, also known as a Learning Management System, or Virtual Learning Environment. It has become very popular among of teachers all over the world as a tool for creating dynamic Web sites for students regardless of level of a received education. To ensure its work, it must be installed on a web server or on own teacher's computer. More than two hundred universities in Russia, including Saint Petersburg State University of Economics and Finance and Higher School of Economics, have already switched to the active use of Moodle environment in the educational process. Moodle is translated into dozens of languages, including Russian, and is used in almost fifty thousand organizations in more than two hundred countries.

Similar information technologies opened new possibilities for the most unprotected part of our society – people with disabilities.

Not all universities in Russia have the opportunity to teach people with disabilities. The main reasons are usually the lack of ramps, elevators and spacious, wide doors, handrails and equipment for the hard of hearing etc. A survey conducted among students with disabilities in 200 universities of Russia, has shown that the most difficult thing in teaching is the lack of an accessible environment. In practice, 14% of institutions use distance technologies in teaching students with disabilities, although the technological readiness to distance learning students with disabilities according to the monitoring is at 36% of institutions. By applying the distance technology are trained about 6% of all students with disabilities in the sphere of higher education. The largest number of students with disabilities training by using distance technologies, study in the following universities: the Russian State Social University, University of Management "TISBI"; Orenburg State University and St. Petersburg State University of Economics (Kaganov, 2014).

Absolutely, the creation of an accessible environment should be a priority in the implementation of the Concept of modernization of Russian education. At the same time, we think that the process should be incremental with the gradual inclusion of a number of indicators to assess the availability of educational environment for people with disabilities in key indicators of an estimation the effectiveness of universities.

Lucy Barnard-Brak and Tracey Sulak (2010) directed a study to examine attitudes toward requesting accommodations in the online learning environment among college students with disabilities compared with requesting accommodations in the face-to-face learning environment. Accommodations refer to those adjustments and modification made to instructional and/or curricular requirements for students with disabilities to fully participate in a course (Rehabilitation Act of 1973). Results indicate that students with disabilities did not have significantly different attitudes toward requesting accommodations in the face-to-face versus online learning environments. Results, however, do indicate that students who report having visible disabilities appear to have more positive attitudes toward requesting accommodations in the online versus face-

to-face learning environment compared with students who report having hidden disabilities.

They further confirm with other researchers that increase in the number of students with disabilities in higher education can be viewed as the result of these legislative statutes and mandates. The Americans with Disabilities Act (ADA) of 1990 and the Rehabilitation Act of 1973 prohibit universities from discriminating against students with disabilities—acts that ostensibly include courses delivered online. These legislative mandates concerning higher education, however, are in contrast to laws (e.g., Individuals with Disabilities Education Act) governing elementary and secondary education for individuals with disabilities. In elementary and secondary education systems, public schools must seek out and identify students with special needs and provide them necessary accommodations and services. Accommodations refer to those adjustments and modification made to instructional and/or curricular requirements in order for students with disabilities to fully participate in a course (Rehabilitation Act of 1973). In higher education, students with disabilities must request these accommodations from their university in order to receive them.

Although students with disabilities may experience difficulties with this shift of responsibility on receiving accommodations and services, this difficulty does not appear to be more evident with respect to the online learning environment.

In examining 604 college students with disabilities enrolled in courses delivered at a distance, Moisey (2004) notes that only 7% of these students did not request necessary accommodations in the online learning environment.

Main focus of the research

Interuniversity research "Students with disabilities in Russian universities" showed that among the measures to ensure the training of disabled students in Russian universities, the most widespread is a health maintenance organization (noted more than 60% of respondents). As another measure the respondents mentioned the possibility of a free visit to dispensaries and sanatoria. More than 40% of those surveyed universities provide an infrastructure access, which, however, includes only the installation of ramps and special lifts.

A small number of universities is able to provide a solution to the issues of equipping classrooms with special equipment for disabled people, procuring adapted for the disabled literature.

In a study conducted among young people with disabilities, in order to identify plans for the future, it was revealed that the structure of value orientations of students with disabilities include the desire to receive higher education (47.1%). At the same time, about 84% of respondents would like to continue graduate studies in the university that uses distance learning.

The study conducted by researcher Kochetova T.A. (2007) reveals that for people with disabilities primary importance has knowledge and skills that contribute to the social and cultural mobility, improving the socio-economic status. The most popular programs of additional education in opinion of disabled people are distance learning programs. This is due to the fact that in modern social and economic conditions the distance education is directly related to

remote employment. Remote jobs and work through the Internet resources is, for many people with disabilities are the most convenient and perspective form of employment.

Solutions and Recommendations

Nowadays the most relevant decision we consider the widespread and adaptation gained significant experience of distance learning developed in foreign countries.

It is worth of noting the fact that currently in Russia the legislative basis for maintenance and assistance to dissemination of distance education has been created. However, there are no specific mechanisms for its implementation.

In our opinion, the solution to this problem is an implementation of the relevant requirements to the system for assessing and monitoring the effectiveness of the organizational capacity of Russian universities.

Thus, we consider that a new approach to organizational potential of the university may become a necessary mechanism, which will provide solutions to the revealed problems.

Under the term «organizational potential» we assume the maximum possible ability of the university to optimize the university operation process and internal interactions between structural elements to achieve strategic goals and objectives. At the same time the issues related to quantitative effectiveness of the processes occurring in the university management system, and the need to transfer them into specific indicators have become particularly topical. The proposed approach allows us to estimate the current level of development and identify existing reserves or the development potential of the university.

It seems necessary to start the process of developing the methods for the organizational potential assessment with the composition and structure of the university potential. As we see it, the structure should compose 8 enlarged blocks: 1. accessibility for the disabled; 2. human resources; 3. financial (economic) potential; 4. educational potential; 5. marketing potential; 6. international potential; 7. research potential; 8. innovative potential.

Innovation potential is the basis for all the structural elements of the organizational potential of the university.

Included into each block components are integrated and interconnected, depending on the nature of the element in the system of the university.

For the development of the methods of the organizational potential efficiency it is necessary to make a list of indicators that might characterize each of the factors affecting the efficiency in the best way.

The structure of indicators is determined on the basis of analysis and generalization of the works by Russian and foreign authors, legal literature and analysis of management practices of the most successful foreign universities (University of Edinburgh, Thammasat, San Diego, etc.). While developing the indicators there were interviews with the interested parties and inquiry of the teacher's staff.

Accessibility for the disabled reflects the capacity of creating an accessible learning environment where students with disabilities have an equal opportunity to participate in all aspects of learning programs, services and activities (Table 1).

Table 1. The list of indicators characterizing the accessibility for the disabled of the university

Designation	Indicator
a1	The share of university educational programs supported by distance technologies, %
a2	Number of distance-controlled auditoriums and laboratories, units
a3	The share of teachers and staff of the University, who went through retraining in ICT sphere, %
a4	The level of satisfaction of disabled students of university with the quality of distance education
a5	The level of satisfaction of disabled students with the quality of educational environment for people with disabilities

In their development programs universities characterize the staff as permitting to prepare graduates demanded on the labor market, produce competitive scientific output both on the domestic and international markets.

For the integrated assessment of the personnel potential three mutually complementary evaluations are used as a rule: price, quality and quantity. Price assessment is based on the theory of "human resources" which emerged in the 60s of the last century. One of the brightest representatives of this theory is the American scientist Likert (Likert, 1967) (Table 2).

Table 2. The list of indicators characterizing the human resources of the university

Designation	Indicator
k1	Percentage of university faculty (UF) of doctors and/or professors, %
k2	Percentage of Doctors of sciences under the age of 50 years of the total number of doctors (full-time), %
k3	Percentage of UF candidates and/or associate professors, %
k4	Percentage of UF teachers employed on a regular basis, %

Designation	Indicator
k5	Proportion of teachers with advanced training on the number of UF, %
k6	Number of postgraduates per 100 students brought to full-time education, people.
k7	Postgraduate efficiency percentage (quotient of thesis defence to the number of postgraduates), %
k8	Doctorate efficiency percentage (number of defences to the number of issued theses), %

Indicators characterizing the financial, educational, marketing, innovation, research and international potential of the university, are presented in Tables 3-8.

Table 3. The list of indicators characterizing the financial potential of the university

Designation	Indicator
f1	All sources income of high school per worker, thousand.
f2	The share of income received in addition to budgetary funds from the Russian Ministry of Education, %
f3	Share of administrative costs in the system of common academic expenses, %
f3	The ratio of actual and planned financing, %
f5	The proportion of the funds received from the sponsors on research activities, the total cost of research activities, %

Table 4. The list of indicators characterizing the educational potential of the university

Designation	Indicator
S1	The percentage of students enrolled in educational programs of higher education that have international accreditation, %

Designation	Indicator
S2	The percentage of students enrolled in educational programs HPE receiving presidential scholarship, the Russian Government scholarships, personal scholarships, established by regulatory legal acts of the Russian Federation, %
S3	The proportion of graduates employed within one year after graduation on the acquired in the course of study qualification on educational programs HPE, %
S4	The percentage of the magistrates enrolled in master's programs, the total number of students, %
S5	The percentage of students enrolled in the contracts with enterprises and organizations, total number of the above contingent of students, %
S6	The percentage of students enrolled in the program of applied bachelor degree, the total number of students, %

Table 5. The list of indicators characterizing the research potential of the university

Designation	Indicator
n1	The ratio of R & D financed from external sources to total R & D funding by one PPP), %
n2	The number of articles published in peer-reviewed journals for 100 people. PPP units.
n3	The number of textbooks and teaching aids (stamped), published during the last five years, per 100 major staff with academic degrees and titles, units.
n4	The number of citations in RISC per 1 scientific pedagogical worker, unit.
n5	The number of citations in Web of Science on 1 scientific pedagogical worker, unit.
n6	The number of citations in Scopus per 1 scientific pedagogical worker, unit.

Designation	Indicator
n7	The share of expenditure on research and development (R & D) of the total expenditure of the university, %
n8	The share of revenues from R & D in the total income of the university
n9	Revenues from university R & D funds from private or commercial enterprises of mixed ownership registered in the Russian Federation, on scientific and teaching staff, thous.
n10	The ratio of income from sales of university organizations and its innovative infrastructure of scientific and technical products, including the rights of intellectual property, federal budget expenditures on R & D performed by high school, %

Table 6. The list of indicators characterizing the international potential of the university

Designation	Indicator
m1	The share of foreign students in the total number of students enrolled in educational programs HPE full cost reimbursement, %
m2	The volume of R & D funds received as a result of work on international and foreign grants, contracts with non-resident organizations, thous.
m3	Number of academic staff who have received international grants and prizes, global and national awards, units.
m4	The share of foreign postgraduate students with full reimbursement of the total number of students graduate, %
m5	Number of full-time academic staff of the university who are leading research and teaching activities in universities abroad, ed.
m6	The share of scientific and pedagogical workers with a diploma or degree from foreign universities, units.

Table 7. The list of indicators characterizing the marketing potential of the university

Designation	Indicator
mk1	Brand recognition of the university
mk2	The uniqueness of the university from a consumer perspective
mk3	Optimality of educational services from the perspective of compliance with market demands
mk4	Acceptable level of prices on services
mk5	Teachers' qualification
mk6	The extent of use of public relations
mk7	Marketing tools flexibility

Table 8. The list of the indicators characterizing the innovative potential of the university

Designation	Indicator
i1	Financial flows per year, passing through specialized units outside the standard of the educational structure, the crucial task of bringing innovative ideas to industrial development, in relation to the annual budget of the university, %
i2	Percentage of the educational programs related to the total number of educational programs, %
i3	The share of the funds allocated for the advanced development, %

Direct measurement of the innovative potential of the university should cover the total financial income of the graduates (for a certain period, for example five years) and income of the university from its own scientific and innovative activity (for the same period), attributed to the total investment in the educational process and innovative scientific activity (for the same period). However, these measurements require the creation of the verified monitoring of the graduates' success, allowing it to conduct the effective evaluation.

As the organizational potential of the university-is a complex multidimensional category which is characterized by a great number of particular indicators that can be qualitatively incomparable, it is reasonable to use multidimensional statistical methods that allow to quantify multi-featured objects for its assessment (Sazhin & Saraikin, 2012).

The extent of "distance" from the reference or "proximity" to the worst value is determined by the complex index calculation, which is a function of the compared values, similar to that of the distance between the points in the multidimensional space. Multidimensional statistics methods help to obtain single expression characteristics of the non-uniformly scaled multidimensional phenomena preserving difference measures inherent to real values of parameters.

We suggest a five-point scale for each of the analyzed indicators referring to the following scoring system for assessment of the marketing potential and the level of satisfaction of students with disabilities: 0.1-0.2-"indicator has the worst lowest level"; 0.3-0.4-"indicator is low", 0.5-0.6-"indicator has an average level "; 0.7-0.8-"indicator is above the average level"; 0.9-1-"indicator has the best value". In this case it is possible to use the questionnaire method, where students, teachers, public representatives can serve as the respondents.

In order to obtain adequate results we suggest conducting comparison of the universities, united on the territorial basis, for example, a particular region or a federal district.

After the selection of the initial characteristics of the estimated object a choice of model indicators as well as the efficiency of the particular indicators characterizing the organizational potential of the university is carried out.

At the next stage while designing the integrated indicator the problem of the function choice turns up. It allows to get a set of separate indexes out of an integrated one. We propose to use the following model as the function:

$$I = \sum_{i=1}^{n} \tilde{x}_i w_i \qquad (1)$$

where $\tilde{x}_i$ -is the normalized value of the corresponding index;

$\tilde{w}_i$ -weight of the corresponding index;

i - ordinal number of the private-factor index;

n - number of factors used.

$$\tilde{x}_i = \frac{Xj - X_j^{\min}}{x_j^{\max} - x_j^{\min}} \qquad (2)$$

where x_j - the actual value of the factor for the tested university;

$x_j^{\min}$ and $x_j^{\max}$ - respectively the minimum and maximum value of this factor among the tested universities over the period.

For each of the seven blocks of the organizational potential of the university, private integral index was designed, and the value of the integral index of the composite will be the arithmetic mean value of the private block of indicators.

$$I_{cons} = \sum_{i=1}^{n} I_i \quad (3)$$

The weighting factors in this study were calculated as a result of correlation and regression analysis of the impact of the proposed factors on the productive efficiency of the university-disposable income (profit) as % of net income.

The objects of the research were 15 higher education institutions operating in the Penza region of the Russian Federation.

Thus, we obtain the following algorithm of the organizational potential assessment of the institution of high education:

Step 1: Identification of the factors affecting the efficiency of the institution of high education.

Step 2: Inventory of indicators that describe each of the factors affecting the efficiency in the best way.

Step 3: Selection of leading indicator values.

Step 4: Formation models-standard.

Step 5: Calculation of weighting coefficients.

Step 6: Estimation of the block integral indicators.

Step 7: Estimation of the integral composite index.

Step 8: Summarizing conclusions about the effectiveness of management with either form of the university potential in order to improve low levels indexes and reveal the prospects of the further development.

Calculation and construction of the integral index of organizational potential is able to reduce the number of indicators into one index, minimize informational loss, and also to reveal the structure of organizational potential, which in turn makes it possible to draw conclusions on the contribution of a specific type of potential into the overall result.

The research results may be implemented into managerial practices of higher education in order to improve the education process of students with disabilities. This in turn will improve disabled people's living standards and provide their greater contribution into Russian economy.

Future research directions

Throughout the world, it is increasingly recognized that effort should be made to ensure that people with disabilities receive their education in an integrating setting either in public universities or private institutions. As a direction for future research, we consider it necessary to conduct solid research among the students with disabilities to identify the main barriers that they encounter on the way to higher professional education in Russia. Received results can be used to develop additional evaluation indicators and monitoring the effectiveness of use the organizational capacity of university as a tool to achieve the objectives of most unprotected parts of our society.

Conclusion

Distance education technology has the capacity to change paradigm of education for disabled students. The rapid development of ICT has accelerated the development process and facilitated new learning opportunities for the group of people with restricted abilities. Developed countries have already achieved a significant progress in providing access to postsecondary or higher education for students with disabilities in conventional and distance education mode. In recent years, across the world, there is a sharp increase in the enrolment of students with disabilities in higher education, more specifically in higher distance educational institutes. Meanwhile, disability-specific support services receive little attention in distance education system in developing and underdeveloped countries as compared to on-campus education. Available research studies in the field show that only fewer than half of the enrolled students with disabilities receive support for their higher education and in most cases universities lack adaptive learning materials specially designed for people with various physical and mental disability. In developed countries application of adaptive technology to assist learning of disabled has shown positive results in reaching out the disabled and it had improved their retention and success rate, students with disabilities are facilitated through various forms of e-learning that had increased their access and success in learning.

Acknowledgements

The results were received while working on order of the Ministry of Education and Science of the Russian Federation.

Disclosure statement

The Authors reported that no competing financial interest.

References.

Gamidullaeva, L.A. (2015). Modeling of innovative cluster management system. Creative Economy, 9(2), P. 225. doi:10.18334/ce.9.2.122

Interuniversity research "Students with disabilities in Russian universities". (2010). Russian Union of Rectors. Moscow. Retried from http://www.rsr-online.ru/doc/2010_12_03/2.pdf

Kataev, M., Korikov, A., & Mkrttchian, V. (2013a). The Concept of e-education on the Basis of the Avatar Technology. Journal Lectures of TUSUR, Vol. 2, 95-100.

Kataev, M., Korikov, A., & Mkrttchian, V. (2013b). Technological Aspects of the Virtual Integrated Educational Environment Designing. Journal Lectures of TUSUR, Vol. 4, 125-129.

Kataev, M., Korikov, A., & Mkrttchian, V. (2013c). Education Technology in Virtual Space with help of Avatars. In E. Cooper, G. Kobzev, A. Kobzev, & V. Kryssanov (Eds.), In Innovations in Information and Communication Science and Technology, Third Postgraduate Consortium International Workshop (pp. 253-258). Tomsk- Kusatsu: TUSUR Press.

Kaganov, V.Sh. (2014). Materials for the meeting of the Commission on the issue "On the implementation of measures aimed at promoting the employment disabled and ensure their access to professional education". Retried from http://www.smolin.ru/news/3/3615/

Kochetova, T.A. (2007). Additional education of persons with disabilities in the context of social transformations. Saratov State Technical University. Saratov, 161 p.

Likert, R. (1967). Human Organization: Its Management and Value (p. 258). McGraw-Hill.

Mkrttchian, V. (2013). Training of Avatar Moderator in Sliding Mode Control Environment for Virtual Project Management. In Enterprise Resource Planning: Concepts, Methodologies, Tools, and Applications (pp. 1376-1405). IRMA, IGI Global.

Mkrttchian, V., Kataev, M., Hwang, W., Bedi, S., & Fedotova, A. (2014a). Using Plug-Avatars “hhh” Technology Education as Service-Oriented Virtual Learning Environment in Sliding Mode. In G.

Eby & T. Vokan Yuzer (Eds.), Emerging Priorities and Trends in Distance Education: Communication, Pedagogy, and Technology. Hershey: PA: IGI Global.

Mkrttchian, V. (2015). Modelling using of Triple H-Avatar Technology in online Multi-Cloud Platform Lab. In M. Khosrow-Pour (Ed.), Encyclopedia of Information Science and Technology (3rd Ed.). (pp. 4162-4170). Hershey: PA: IGI Global

Mkrttchian, V., Kataev, M., Shih,T., Kumar, M., & Fedotova, A. (2014b). Avatars "HHH" Technology Education Cloud Platform on Sliding Mode Based Plug- Ontology as a Gateway to Improvement of Feedback Control Online Society. International Journal of Information Communication Technologies and Human Development, 6(3), pp. 13-31, July-September 2014. Hershey, PA: IGI Global

Sazhin, Y. V., & Saraikin, Y. V. (2012). The application of the multivariate analysis conformity for the structural analysis of the pedagogical staff of the research university. Vestnik NSUEM, 3, pp. 121-131.

Vasilyev, N.V. (2007). Higher education accessible to persons with disabilities. Education and educational potential of the twenty-first century, 4, pp. 65-66

Vasin, S.M. & Gamidullaeva, L.A. (2015). Methodical approach to the assessment of organizational capacity higher education institutions. Regional economy: theory and practice, 13(388), pp. 16-28

Vasin, S.M., Gamidullaeva, L.A. (2015). Innovation potential of modernization of Volga Federal District. Theoretical and Applied Economy, 3(3), 16-42, from http://doi:10.7256/2409-8647.2015.3.15478.

Vasin S.M., Gamidullaeva L.A. (2014). The Development of the Assessment Methods of the Organizational Potential of the Institutions of High Education. Asian Social Science, 10(24), pp. 285-296.

Voronov, V.N. & Tolkachev, V.A. (2010). Internet in modern education: problems and prospects. Higher education in Russia, 8(9), pp. 50-55