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To the issue of the development of the criteria for assessing the quality of education

Competitiveness is the level of the country in the international ratings and education, is the main component of competitive country. The literary analysis showed that the meaning of competitiveness in different sectors has different definition. For identifying the level of competitiveness of both education and the level of the country, as whole criteria are being formed, which are used as rules on the base of which the assessment is given. The quality of education is the main component of primary and higher education. In the article there are definitions of such notions as criteria and competitiveness, as well as the analysis of criteria development on the base of global competitive index (GCI), Programme for International Student Assessment (PISA) and Global Competitiveness of Russian Education and also the main methods of criteria development are identified. Each organization points out key criteria and indicators according to which the country's activity is assessed. The reason of choosing these materials is developing, goal of making such criteria have common similarities and are used in the international level.

Keywords: competitiveness, criterion, Global Competitiveness Index, Programme for International Student Assessment (PISA), Russian Education Global Competitiveness, evaluation, education.

The criteria of Global competitive index, Programme for International Student Assessment (PISA) and Russian Education Global Competitiveness were studied for the purpose of identifying the principals and mechanisms of developing criteria.

The analysis of notion «criteria» takes starting position. Well known and general notion is the understanding of criteria as a sign on the base of what the classification and evaluation are made, the advantage of any choice in comparison with others is distinguished, the correspondence of results of target goal is checked [1] or the mark of its realization level is given [2].

In this aspect each international organization points out key criteria and indicators according to what the estimate of country is done. So the structure of World Economic Forum (WEF) looks like this: there are three subindexes, each subindex is divided into criteria. GCI was distinguished in 1979 for taking exact picture of the potential international economic growth. The basis was an understanding of the essence of competitiveness. Literary analysis shows that in different fields the given notion has different definitions.

Firstly, it is associated with trade and service. However the variety of objects for evaluating competitive is sufficiently wide.

According to Porter (1990), «in every country competitiveness becomes one of the central government and industry interest». Lall (2001) expressed his opinion that «Many politics are seriously worried according to national competitiveness». Government and leaders of branches make efforts to answer why some firms or some countries can achieve success and why others meet with a reverse in the international competition. Nevertheless, before someone answers aforecited question, there should be clear understanding about the meaning of competitiveness and to know how to measure it.

So, for example, on the national level competitiveness is the set of structures, strategies and factors which identify the level of productiveness of the country [3, 4]. The level of productiveness sets sustainable prosperity which identifies economical level of the country.

Country competitiveness is a basket of factors, politics and institutions, which identify the level of productiveness in the country [5].

Earlier competitiveness was understood as a problem suited for corporates where it presents opportunities in creation, production, sales and services of products or business services [6].

For the country estimate in terms of competitive power many characteristics and ways of estimation were developed. Global competitive index reflects the positive and negative dynamics of the country development from the mathematical point of view. It includes not only economical and financial conclusions, but also analysis of political and social decisions, innovational progress, changes in healthcare and education.

Today global competitive index is used in 140 countries; the main goal is to identify the level of country productiveness. Consequently, main 12 referred bases are being foundational of the country. The experts of WEF consider that each basis influences on country competitiveness. From the main 12 bases in the given article such bases as primary and higher education will be considered.

In condition, when the main factor of socio-economic development, key cost generator and the tool of investment attraction are human resource, the question about global competitiveness of education is on the forefront. The components of global competitive index of primary education are:

- the quality of primary education;
- the number of students (statistics data);
- expenses for primary education (statistics data).

There are many arguments about quality, conceptions of education and about their measurement. The quality of education plays a big role for country development, workers without having compulsory primary education are able to do simple ordinary works, as so it is difficult to adapt to more difficult manufacturing processes and technologies. Main components identifying the quality of education system, the quality of material and scientific acquirements, the quality of school management and access to the Internet. Lack of basic education of staff can negatively govern on business, limiting its development meanwhile companies will face with difficulties to move forward in a chain of creation price, producing more difficult things or increasing their added value.

The second and third components of primary education are expenses for primary education and the number of students (statistics data) [7], as so for revealing essential sum of charges it is important to know the exact number of students. Financing of education means giving annual appropriation for education proving for its priorities and is main indicator of inputs in the quality of degree human capital of the country. The size of earmark for financing education must supply functioning of academic institution in accordance with government standard of education. There are many programs of financing education which are directed to create modern system of evaluation the quality of education, advance of education standards, introduction of new learning technologies and etc. So, for the development of quality education it is necessary to have good governmental financing, which allows supplying schools necessary material and technical base.

When funding such aspects as the type of school, the number of students is taken into account. With the decrease in the number of students in educational organizations, the cost of financing per student increases [7]. It shows general regularity called scale effect in economy: the greater the number of students, the lower the average expenditure on education per student.

The main criteria of higher education are:

- size of the education sector;
- quality of education;
- advanced training.

The quality of the given level of education has fundamental importance for countries which want to improve their economy. Particularly, globalization of economy demands highly-educated workers, who are able quickly adapted to the changes of environment and developing demands of manufacturing systems [6]. The orientation to the future world education is the main guarantee of country success in the sphere of human development. Continuing education is no longer just one of the aspects of education and professional development; it becomes the fundamental principle of educational system and personal participation throughout all the continuous process of person's educational activity [8].

Degree of employee training also takes into account in sight of professional importance and extended studies on the job (many countries disregard it), that allows maintain extended evaluating skills of workers. It is developing infrastructure for teachers' skill enhancement, engineering and teaching staff and head of educational organizations.

In turn, each criterion has its components, for example, when determining the size of the education sector, the number of students is taken into account (9–11 grades of general education schools and secondary specialized educational institutions), the number of students in higher educational institutions and the basic costs of education. This component assesses the level of enrollment in secondary schools and universities, the quality of education from the point of view of the business community.

Therefore, that criteria development of evaluation primary and higher education were based on the key moments, which were necessary for country developing.

In course of researching international report of global competitive index there was analyzed the report «Russian Education Global Competitiveness», where there was identified main criteria for evaluating quality of education. The analytical report indicates the criteria for determining the real global competitiveness of Russian education at each level; while the Global Competitiveness Index, when determining the level of a country's competitiveness, takes into account only primary and higher education.

The goal of the report is analysis of each level of Russian education, making criteria and identifying level of real global competitiveness [8].

It should be noted, that the school is the main core of educational system. Main criteria of school education are: *general access to the education; financing of education; planned educational results; international comparative study of quality of education; equality of educational opportunities; work with talented students; qualification of teachers and conditions of their work*. As it was mentioned in GCI so in the given report the quality and financing are dominated criteria for identifying competitiveness of education on the international level.

The causes of choosing given criteria proceed from the assumption that accessibility of free education is very important, as so in the world the duration of compulsory education rises and in different countries the given age is varied. Average period of compulsory education is 12–13 years. Nescience exact number of students unfinished compulsory education leads to the problem from the point of coverage of qualitative school education. Consequently, coverage of compulsory education its duration presents more obvious indicator for evaluation its accessibility.

Referring to financing of education the important moment is that depending on sum of spendings the connection of financing with education result is becoming closer. The given criteria also were used in GCI. So, its consequence was mentioned above. Competitive standards are aimed to education progress. As it was mentioned in international program PISA, today essential goal of school education is not only to lessons learned, but also prepare students to the living. Respectively, the more funding, the higher planned results.

In far as is concerned qualitative education it is impossible to take into account the qualification of teachers, work conditions and motivation of professional development. The quality of teachers and conditions of their work are main indicators of competitiveness school system. About importance of teachers' career growth also were told during analysis of GCI. The significance of career growth confines in preparing future personnel.

For Russia, ensuring the competitiveness of higher education means posing tasks, such as providing highly qualified personnel, exporting education and developing science and technology. The criteria that determine the competitiveness of higher education are: *international attractiveness, employment of graduates, scientific productivity and the number of foreign students*. As it was mentioned above, to be a highly qualified and sought-after specialist is an indicator not only of the level of the university, but of the country as a whole internationally.

By now for evaluation of higher education systems there are used such monitoring and ratings, as: *Lisbon Council Ranking, QS Higher Education System Strength Ranking, Universities 21 Ranking of National Higher Education System, Affordability and Accessibility Ranking*. Each monitoring contains its criteria and indicators for estimates. The number of criteria in each rating varies differently, but we chose more essential:

- 1) general expenses in educational process (cost of the study; expenses for living);
- 2) attractiveness: number of foreign students, come to the country;
- 3) general access (in comparison countries the number of students takes into account);
- 4) percentage of university research publications.

The given criteria are one of the essential in international ratings of higher education. In examining universities for compliance to international standard it is necessary to consider general expenses for education, for education institution and etc. As for the share of foreign students, this is one of the indicators of the quality and relevance of the educational program of university. Scientific activity plays an important role in evaluating the activities of universities. An important factor in the competitive advantage of a higher education institution is its reputation in the national and international educational services markets.

Also for the analysis there were chosen criteria of Programme for International Student Assessment (PISA). The aim of research is the estimation do students have knowledge and skills necessary for full functioning in the society (functional literacy) [9]. Given estimation focused on such subjects as science, reading and mathematics and shows how students can realize and use lessons learned as at school so out of school. This approach reflects the fact that modern economics reward people not for what they know, but for what they can do with knowledge.

The influence of different factors to educational achievements of students is being studied additionally. These are socio-economic aspects, characteristics of educational organizations and educational opportunities of students out of school. PISA project provides means to compare different educational systems and use the experience of leading Organization for Economic Co-operation and Development (OECD) countries during developing national strategies of education. The research conducts three years cycle. In each cycle priority direction is determined. As it was mentioned above, the given program checks the knowledge of students in three directions reading literacy, mathematical literacy and scientific literacy. These directions coincide to the particular school subjects [4].

Used term «literacy» means ability of students to practice received knowledge and skills in main subjects area, also to analyze, explain rationally, effectively interact in setting, solving and interpreting tasks in various life situations and reflect the knowledge and skills to be assessed [10].

Selected types of testing checks not only knowledge of students, it is directed to identify the readiness of teenagers to the adaptation to the modern society. Analysis of tasks according to each direction shows, that all of them are connected with living situations. So, for instance, reading literacy is directed to identify the ability of person to understand, to use, to estimate texts, think about them and do reading for achievement their goals, to extend knowledge and opportunities, to take part in social life.

The ability to comprehend and interpret extended fragments of continuous texts is key skills for full participation in the labor market, as well as in social and public life in the 21st century. So, as a successful citizen to effectively search, sort and filter a huge amount of information you need to use information from different subject areas.

Tasks for reading literacy are made with the aim to check such skills, as: 1) to find access to the information and abstract it, inspectional reading and emphasizing the part where it is the sought information; 2) general understanding of the text and the translation of the text information into the reader's language, definition of the main and secondary information; 3) reflections on the content and form of a text message and its evaluation. The latter helps to comprehend, link the content of the text with life experience and give its assessment.

Next direction of checking is mathematic literacy, the aim of which is to evaluate the readiness of students to use mathematics in everyday life. In the given direction there are included tasks close to real problematic situations. Generally while composing assignments 4 categories of context are used: *private life, educational / professional work, social life and scientific work*.

As it is concerned in titles, given categories are directly connected with real life. When it is talked about private life, such moments connected with trading, cooking, games, health and etc. are taken into account.

In PISA, the level of questions describes students' skills in solving everyday problems that require mathematics in solving them. This skill is referred to as mathematical literacy which refers to the ability of students to formulate problems mathematically based on the concepts and relationships inherent in the problem, and then apply mathematical procedures to obtain «mathematical results» and reinterpret the results into related forms with initial problems [11].

Educational / professional work includes such actions as measurement, cost calculation, order materials for construction, payment for bills, etc.

The situations of category *social life and scientific work* are taken from life of local community, touch on an issue appeared in students close surrounding. The given tasks help students to adapt to the life and avoid different difficulties.

The third direction of international educational program is scientific literacy, that shows the ability of human to take active citizenship according to the questions connected with development of social science and appliance their achievements, its readiness to be interested in social science ideas. As other types of functional literacy scientific literacy supposes capability to use knowledge in everyday life.

The tasks refer to check following competences: 1) scientifically explain phenomenon; 2) to understand peculiarities of scientific study; 3) to interpret data scientifically and use evidence to draw conclusions. Problem situations are based on such thematic field, as health, natural resources, environment, hazards and risks, the connection of science and technology. These skills can be considered as basic set of actions which can be done by scholar.

In modern world it is important not only have knowledge and information but also to be able to apply and formulate your point of view. Consequently PISA is not only unique monitoring of assessment of education quality but the usage of given skills and knowledge in solving life problems.

Therefore, developing criteria demands particular approach. They have to show the essence of assessment object also the characteristics of assessed object which are more actual and important for the definite context of assessment, its goals and tasks. In addition, each criterion should be measurable in quantitative and qualitative indicators.

References

- 1 Скворцов Л.И. Большой толковый словарь правильной русской речи: 8000 слов и выражений / Л.И. Скворцов. — М.: ООО Изд-во «Оникс»; ООО Изд-во «Мир и образование», 2009. — 355 с.
- 2 Критерии и показатели оценки эффективности функционирования воспитательной системы вуза [Электронный ресурс]. — Режим доступа: <https://www.fundamental-research.ru/ru/article/view?id=30949>
- 3 World Economic Forum (WEF), The Global Competitive Report, 2010–2011 [Электронный ресурс]. — Режим доступа: http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf.
- 4 Международная программа по оценке образовательных достижений учащихся [Электронный ресурс]. — 2015. — Режим доступа: http://centeroko.ru/pisa15/pisa15_pub.html
- 5 World Economic Forum — Всемирный экономический форум [Электронный ресурс]. — 2006. — Режим доступа: <https://gtmarket.ru/news/state/2006/10/10/503>
- 6 Kovacevic M. «Cause of decline and low level of Serbia economy competitiveness». In Proceeding of the symposia: How to increase level of competitiveness and export of Serbia, September 29–30. — Kragujevac: Economic Faculty in Belgrade, 2015. — С. 3–40.
- 7 Шарипбаева А. Подушевое финансирование: за и против. Аналитический отчет / А. Шарипбаева, Н. Байтугелова. — Астана, 2013. — С. 9, 10.
- 8 Zhetpisbayeva B.A. Continuity as an attribute characteristic for the process of polylingual professional education / B.A. Zhetpisbayeva1, G.T. Smagulova1, A.P. Stoianova // Вестн. Караганд. ун-та. Сер. Педагогика. — 2018. — № 1. — 2018. — С. 81–85.
- 9 PISA 2015 Results in Focus, OECD 2018. — 32 с.
- 10 «Анализ международной программы по оценке образовательных достижений учащихся PISA (Programme for International Student Assessment)», Аналитический обзор № 17 [Электронный ресурс]. — Режим доступа: http://charko.narod.ru/tekst/analitika/AO_17_2011.pdf (дата обращения: 25.03.2019)
- 11 Aini I.N. PISA-like mathematics problems using rice fields context in Karawang [Электронный ресурс] / I.N. Aini, R. Zulkardi, I.I. Putri, P. Yaniawati. — Режим доступа: <https://iopscience.iop.org/article/10.1088/1742-6596/1188/1/012073/pdf>

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Білім беру сапасын бағалаудың өлшемдерін жасау туралы мәселе

Бәсекеге қабілеттілік бұл мемлекеттің халықаралық рейтингтегі деңгейі және білім беру бәсекеге қабілетті мемлекеттің негізгі базисі болып табылады. Әдебиеттер талдауы бәсекеге қабілеттілік мағынасының әр салада әртүрлі қолданылатынын көрсетті. Мемлекеттің және білім берудің деңгейін анықтау үшін өлшемдер құрастырылды, яғни олар баға берудің негізгі ережесі болып табылады. Білім берудің сапасы — бастауыш және жоғарғы мектептің негізгі компоненті. Берілген мақалада өлшем (критерий), бәсекеге қабілеттілік ұғымдарының анықтамасы айқындалды, жаһандық бәсекеге қабілеттілік индексі, білім берудің сапасын бағалау мониторингі PISA және ресейлік білім берудің жаһандық бәсекеге қабілеттілік материалдары негізінде өлшемдердің жасау талдауы, сонымен қоса өлшемдерді талдау механизмі берілген. Мемлекет жұмысын бағалау үшін әр мекеме өзінің негізгі көрсеткіштерін ерекшелеп алады. Берілген материалдарды тандап алудың себебі мақалада көрсетілген көрсеткіштерді құрастырудың мақсатының бірі болып табылады.

Кілт сөздер: бәсекеге қабілеттілік, өлшем, жаһандық бәсекеге қабілеттілік индексі, PISA оқушылардың жетістіктерін халықаралық бағалау бағдарламасы, ресейлік білім берудің жаһандық бәсекеге қабілеттілігі, бағалау, білім беру.

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К вопросу о разработке критериев оценивания качества образования

Конкурентоспособность — это уровень страны в международных рейтингах, и образование является основным базисом конкурентоспособной страны. Анализ литературы показал, что значение конкурентоспособности в разных отраслях имеет разное определение. Для определения уровня конкурентоспособности как образования, так и, в целом, уровня страны создаются критерии, что,

в свою очередь, являются правилами, на основе которых дается оценка. Качество образования — основной компонент как начального, так и высшего образования. В статье дано определение таким понятиям, как критерий и конкурентоспособность, а также для определения основных методов разработки критериев был сделан анализ критериев материалов глобального индекса конкурентоспособности, мониторинга качества образования PISA и глобальной конкурентоспособности российского образования. Каждая организация выделяет ключевые критерии и показатели, по которым происходит оценка деятельности стран. Выбор данных материалов исходит из того, что разработка, цель создания указанных в статье критериев имеют общее сходство и используются на международном уровне.

Ключевые слова: конкурентоспособность, критерий, глобальный индекс конкурентоспособности, мониторинг качества образования, глобальная конкурентоспособность российского образования, оценка, образование.

References

- 1 Skvortsov, L.I. (2009). *Bolshoi tolkovyi slovar pravilnoi russkoi rechi: 8000 slov i vyrazhenii* [Large explanatory dictionary of correct Russian speech: 8000 words and expressions]. Moscow: OOO Izdatelstvo «Oniks»; OOO Izdatelstvo «Mir i obrazovanie» [in Russian].
- 2 Kriterii i pokazateli otsenki effektivnosti funktsionirovaniia vospitatelnoi sistemy vuza [Criteria and indicators for assessing the effectiveness of the functioning of the educational system of the university]. *fundamentalresearch.ru*. Retrieved from: <https://www.fundamentalresearch.ru/ru/article/view?id=30949>[in Russian].
- 3 World Economic Forum (WEF), The Global Competitive Report, 2010–2011. *weforum.org*. Retrieved from: http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf
- 4 Mezhdunarodnaia prohramma po otsenke obrazovatelnykh dostizhenii uchashchikhsia [International Program for the evaluation of educational achievement of students] (2015). *centeroko.ru*. Retrieved from http://centeroko.ru/pisa15/pisa15_pub.html
- 5 World Economic Forum (2006). *gmarket.ru*. Retrieved from: <https://gmarket.ru/news/state/2006/10/10/503>
- 6 Kovacevic, M.(2015). «Cause of decline and low level of Serbia economy competitiveness». In Proceeding of the symposia: How to increase level of competitiveness and export of Serbia, September 29–30.Kragujevac: Economic Faculty in Belgrade.
- 7 Sharipbaeva, A., & Bajtugelova, N. (2013). *Podushevoe finansirovanie: za i protiv. Analiticheskiy otchet* [Per capita financing: pros and cons. Analytical report]. Astana [in Russian].
- 8 Zhetpisbayeva, B.A., Smagulova, G.T., & Stoianova, A.P. (2018). Continuity as an attribute characteristic for the process of polylingual professional education. *Bulletin of the Karaganda university, Pedagogy series, 1*,81–85.
- 9 PISA 2015 Results in Focus, OECD 2018.
- 10 «Analiz mezhdunarodnoi prohrammy po otsenke obrazovatelnykh dostizhenii uchashchikhsia PISA [PISA Programme for International Student Assessment, analytical review No.17]. *charko.narod.ru*. Retrieved from http://charko.narod.ru/tekst/analitika/AO_17_2011.pdf [in Russian].
- 11 Aini, I.N., Zulkardi, R., Putri, I.I. & Yaniawati, P. PISA-like mathematics problems using rice fields context in Karawang. *iopscience.iop*. Retrieved from <https://iopscience.iop.org/article/10.1088/1742-6596/1188/1/012073/pdf>