

Russian Universities and Global Ratings

Boris Zemtsov

National Research University
N.E. Bauman Moscow State Technical University (BMSTU)
5/1, 2nd Baumanskaya st.
Moscow, Russia 105005
E-mail: zemtsovbn@mail.ru

Tatyana Suzdaleva

National Research University
N.E. Bauman Moscow State Technical University (BMSTU)
5/1, 2nd Baumanskaya st.
Moscow, Russia 105005
E-mail: syzdalev@list.ru

Abstract—The paper covers high school reform in Russia. It considers the problem of university ranking. The world rating systems' influence and their application in the assessment of higher education in Russia are analyzed. The discussion goes into complicated questions of indexing and synthesis between our country's tradition and modern practices used worldwide. The authors make a point on the importance of the correlation between the international scientometrics and the features of Russian higher education in order to successfully integrate the latter into the highly competitive environment of the world-leading centers for science and education.

Keywords—science; ranking; universities; higher education; THE; QS; ARWU

I. INTRODUCTION

F. Frebel, German education theorist, once noted, that there are times when the education comes under the spotlights of public attention. The XXI century seems to be exactly that: the period when social challenges are focused in the area of education [1]. The educational policy cannot be divided from the needs of the society. At the same time, the level of education is caused mainly by the economic reality as well as cultural traditions [2]. It does not always correlate with population numbers or the size of the country.

The “otherness” of Russian education played a major role in country's development. The advantages of the Soviet education systems were taken over by other countries.

In the last quarter of the XX century, in the time of big changes, higher education started losing its value. In 2003, Russia entered the competitive market of higher education. The first step was the transition to the Bologna system. Since 2013, “5-100” project is underway, implementing novel educational and university ranking strategy.

II. RANKING METHODOLOGIES USED FOR WESTERN UNIVERSITIES

In the beginning of the 1980s, first-world countries started the process of unification of higher education; its parameters were set by the university rankings.

The first national ranking system was started in the US in the beginning of the 1980s, while the first world-wide rating was created by the Shanghai University in 2003. Regional

and subject area-based ratings followed soon. Currently, there are more than 100 national rankings and about 20 world-wide ranking systems.

The ranking systems satisfy the demand for information about the educational institutes, but they also define the ways the institutes improve themselves. They play an important role in the country's “prestige” ranking in the world. Currently, there are three most authoritative university rankings: Times Higher Education (THE), Quacquarelli Symonds (QS) and Academic Ranking of World Universities (ARWU).

THE rating is composed of 13 parameters of the quality of education. Starting from the 2010s, THE provides an additional ranking based on the polling of the faculty. According to THE, the most prestigious educational institutions are those of the USA and the UK. Harvard University remains on the top of the world universities list for many years.

The QS ranking is published yearly, its first issue is of 2004. For the 2011 ranking, where hundreds of universities were assessed, the first three positions were occupied by the Cambridge University (UK), Harvard University and Massachusetts Institute of Technology (both US).

The ARWU ranking, prepared by the University of Shanghai, gives the biggest weight on the number of publications in the most important scientific journals – Nature and Science. Harvard University produces a bigger number of those publications than all universities of Russia taken together. The ranking also takes into account how many laureates of the Nobel Prize and the Fields Medal work in a university. This feature gives the major contribution to the fact that the ranking is dominated by the universities of English-speaking countries. As of now, the ARWU ranking assesses 500 universities.

The position of a university in an international ranking is determined, above all, by the research activity of the faculty, the ratio of spending on science in the university's budget, the number of foreign faculty and student, the student to instructor ratio, the ratio of graduates to freshmen, employers assessment, the graduates' level of competences, spin-off businesses activity, etc.

The ranking systems are flexible, they are constantly being adjusted. For example, earlier the object field-based

rankings assessed only a few disciplines (mathematics, physics, computer science and economics), but now they include tens of object fields [3].

However, those ranking systems reflect the western educational trends in the first place. It is also worth mentioning that more than a half of the experts the ranking systems poll work in North America or Western Europe. Positioned globally, THE, QS, and ARWU assess high schools on their conformity to the western education model.

The models of education in western countries differ, causing variation of ranking criteria; at the same time, unification of education, which is a highly complex institution, leads to its formalization.

According to the experts, the count of disadvantages of the global ranking systems goes into tens. The problem is acknowledged by the ranking agencies as well; therefore ranking systems are being constantly adjusted, both in separate factors and the overall methodology.

The imbalance, according to domestic and foreign experts, is caused by the fact that the overwhelming majority of experts who are being polled for rankings work in English-speaking countries, they are also native speakers of English. However, in the last three years the situation has somewhat changed: the representation quote of European experts increased by 6%, for Asian expert the increase amounted to 9%.

There are regularly held international conferences where the representatives of ranking agencies meet the faculty of the leading universities and other education-related institutions. However, as the agencies fail to improve the methodological deficiencies of their rankings, the whole idea of international ranking is being heavily criticized. For example, the universities of Hamburg, Cologne, Leipzig and some other institutions withdrew from the rankings, on the basis of the subjectivity, abstractness and mechanical approach of the latter [4]. Russian institutions of higher education should exercise even more caution towards the western ranking systems.

III. RANKING OF RUSSIAN UNIVERSITIES: GENERAL AND PARTICULAR

Starting from 2013, Russian higher education institutions take part in the international ranking.

The presence of Russian universities in the international rankings greatly expanded over the last years: e.g. five years ago only 15 Russian universities took part in the ranking, while in 2018 this number increased to 30.

Achieving the goal of entering the top 100 universities of the world requires huge effort due to a number of reasons. One of the reasons is the difference between the Russian and US models of education. In the US, the universities integrate the education and scientific activities since many years. In Russia, on the opposite, scientific research is mainly performed by the institutes of the Academy of Sciences and industrial research facilities. That explains why only 20% of

the faculty is involved in research, even though the process of the integration between science and education has started.

The quote of foreign faculty was greatly expanded in the universities participating in "5-100" project (for some universities, the increase was more than 100%). This decision was motivated by the strive towards the top of world university rankings. The same strive made it popular for the universities to invite RAS scientists to join the faculty.

Incentive payments are widely used to stimulate the faculty to do research. This is another foreign practice taken over by Russian universities. The amount of the incentive is defined by the impact factors of the journals where the results of the research are published. Those who publish in journals indexed by Web of Science or Scopus data bases get the highest incentives.

The increasing number of class hours is one of the main reasons preventing the faculty from engaging in research. Recently, the faculty went through layoffs which served the purpose of increasing the salary of those who remain. Most of the universities need each member of the faculty to have more than 800 class hours [5]. Under those conditions, it is very hard to find some time for any research. Foreign universities rarely require their faculty to have more than 300 class hours. The faculty of Chinese universities has only 8 class hours a week, the rest of the time they are supposed to do research.

Alongside with high workload, the faculty of humanities departments faces other challenges:

- The number of journals to publish their work is severely limited, e.g. out of 1200 journals indexed by ERIH PLUS system as related to the field of history, only 2% publish in Russian [6]. The Scopus database shows approximately the same ratio.
- The humanities tend to be more closely related to the domestic culture. That's why such things as "Russian philosophy" or "German classical philosophy" exist. There are also subject fields covering issues of mostly local relevance (Slavic studies, Russian studies). It is not easy to publish them in an English-language journal. The results of a research in humanities are very difficult to use in the international context. Mostly, the international academia is not interested in those.
- It is considered that the worldwide rankings are effective, above all, in natural sciences. World leading universities do not use scientometrics for humanities. An index system created and implemented for publication in natural sciences, is hardly usable for social and humanitarian subject fields [7].

Many Russian universities can hardly achieve a respectful position in international rankings:

- Russian universities are mostly state-run. Their funding depends on the variability of state revenues. The funds available to the world leading universities

(e.g. Harvard University) exceed the whole budget of the state program “Development of science in technology 2013-2020”. The practice of endowments is virtually unknown in Russia. The total value of all endowments in Russia does not exceed 20 bln rubles, while for the US this number is 30 times bigger. In the US, the endowment is financed by the university’s graduates or companies, while the benefits are received by the students and the faculty. The practice of endowment in Russia is 10 years old, while in the US it has more than 400 years of history, and more than 500 in Europe.

- Employment of foreign faculty is limited due to political and economic reasons. Besides that, the salary of Russian faculty member is not appealing for a foreign professor.

All does not mean that Russian universities don’t need to take the developments of the global educational and scientific environment into account. The rankings provide insights into the directions of required developments; global rankings can be a model for the implementation of the domestic ones.

First Russian ranking was compiled in the late 1990s by “Career” magazine.

In Feb 2001, Russian Ministry for Education and Science initiated the development of a well-justified methodology for ranking of Russian universities. After that, a group of independent rankings were introduced by different agencies: “RateOR independent ranking agency” (2005), IA “Interfax” (2009), “Expert RA” (2012). The lastly mentioned ranking is the most interesting. The basis for assessment was the employment of the graduates by world leading companies. Out of 200 universities on the top of the rating, 7 were Russian. The largest source of employees for the leading employers was found to be the Lomonosov Moscow State University (rank 47), St. Petersburg University (168), Russian Federal Government Financial University (177) and Bauman Moscow State Technical University (179).

National ranking system for foreign and Russian universities was created by the Russian Ministry of Education in 2013. Foreign universities assessed included the universities from BRICS countries and the countries of former Soviet Union. The criteria were mostly taken over from the QS ranking system: they include quality of education, research, “internationalization”, innovation, and entrepreneurial activity. The parameter of “internationalization” is measured by the share of foreigners among the students and faculty, and the number of faculty visiting international conferences abroad. The universities where the research is classified (Bauman MSTU, MAI, MEPhI) have problems in meeting the requirements on this parameter.

The entrepreneurial activity is measured by the contracts between the university and companies. Here Bauman MSTU and Lomonosov MSU are the leaders. The participation of the universities in forming technology platforms and technological development of state-run corporations play a

role here as well. Again, Bauman MSTU is the leader here (research contracts with 30 state-run corporations and 8 technology platforms) and MEPhI (14 and 20, respectively) [8].

Another national ranking system for Russian Federation, mainly focused on the demand from Russian economy was presented by “Social Navigator” project run by MIA “Russia Today”. 448 universities are from all regions of Russia. The main criteria are the demand on the “product” the universities “produce”: their graduates. Technical universities were the leaders in the sub-ranking “share of investment in research”.

The QS ranking system prepared a specific report on the ranking of the universities in the BRICS countries in 2017. Lomonosov MSU achieved the 5th position in the ranking. The overall number of universities assessed was 400, with 27 universities from Russia. The Physical-Technical Institute reached the 11th place. In the same year, no Russian universities made it to the top 100 of the global AS ranking.

Russian rankings, especially the ranking prepared by the Ministry, have goals different from the goals of international ranking systems. They are more practical. First of all, they are used for the unified database as a characteristic of the university, its departments, and individual faculty members. After that, they are used to stimulate research, educational, and methodical activity of the faculty. (Nevertheless, some parameters of the national ranking are similar to the parameters used by THE, QS and ARWU) [9].

The very system of assessment defining which and how many Russian universities are classified among the top-level world universities needs to be corrected. A group of experts develops methods for identification of world-level universities; they are trying to create a classification scheme for “candidate” universities as well. The main criteria is the ranking among top 100 or top 50 universities of the world, and presence in no less than 5 subject field ratings [10].

The community begins to understand that using the western scientometrics only we diminish the essence of the higher education. World rankings cannot reflect specific features of Russian universities closely working with defense industry, as their publication activity is limited.

The objectification of scientometrics will also require a methodology for ranking in humanities [11].

According to Russian experts, international rankings shall include also parameters assessing the educational side of the university: achievements of the faculty, the social role of a university (its so-called “third mission”) [12]. Other parameters are required to assess the educational process and its role in the socialization of individual students.

IV. CONCLUSION

Notwithstanding the importance of global rankings in the development of competitive abilities of Russian higher education, we ought to emphasize that the parameters used for international ranking often don’t take into account the features of Russian educational system.

Some university leaders recognize the fact that the education cannot be reduced to acquiring skills and knowledge, neither to the revenue of the university. It is impossible to prepare human resources for innovative economy without understanding of the motivation and meaning of what we do. Bauman MSTU rector A.A. Alexandrov underlines that a student shall be able to relate the theory to actual real-world problems shall be in command of sufficient political and legal culture [13]. The educational system shall shape the humanitarian response on the challenges of modernity outside of the limits sets by subject fields, technologies, religions, or economic conditions [14]. Having understood that, the state program “Development of the export capabilities of Russian educational system 2018-2025” sets the improvement of publicity as one of its main goals: papers on Russian educational model will be published in high-quality journals, other information sources will be set up; the graduates of Russian universities working for foreign companies will be interviewed etc. Science and education are two areas where international collaboration is possible beyond the limitations of the actual political situation [15].

The problems of university ranking are now discussed widely, and the discussion has shown the necessity of further improvements on the ranking methodologies. Further discussions are required to stimulate the ongoing adaptation of Russian higher education to the global processes.

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