

## Conference Paper

# BRICS Countries Education Export: Challenges and Forecasts

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### Abstract

The purpose of this research is to study how the BRICS countries can ensure the active involvement of foreign citizens from partner countries, taking into account the territorial and sectoral segments of the world market. The work relies on expert panels, aimed at reducing initially differing points of view of experts from different countries to more consistent provisions. This method allowed us to record changes in the observed values, characteristics, to study the dynamics of the development of processes in the field of education export.

Export of education allows an increasing the number of foreign citizens to study in higher education institutions in BRICS states. Based on the factor analysis of the national education systems of the BRICS countries in terms of tasks and forecasts, a matrix of requests from scientific fields is compiled and recommendations are made.

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## 1. Introduction

Mankind enters the era of the fourth industrial revolution, which aims at the government of each country to forecast and adjust requests for specialists, given the deficit or surplus in various areas of their training, the glut of certain areas by unclaimed specialists and the redistribution of personnel to other sectors of the country's economy. This issue is also relevant in the framework of the alliance of the BRICS countries — the five largest world powers, which, according to forecasts of the International Monetary Fund (IMF), will enter the world stage of economic development by the middle of the 21st century. And the key issue here is the personnel issue, namely the preparation of these countries citizens' for the professions.

BRICS countries can act as protagonists in resolving this issue, because they have the necessary conditions for this: the largest number of people on the Earth planet, diverse natural resources and climatic zones, etc. To rationally use the existing conditions, high-quality professional forecasting is required. It is in the forecasts of the future that the

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vector of successful development of the country is laid. Therefore, the dominant factor in ensuring the sustainable economic growth of the BRICS countries is education, which should respond sharply to the needs of society in a rapidly changing world [11].

Universities are called upon to find new ways to educate people, thus, that they fit the professions and jobs that society will need and adapt to the changes brought about by the Fourth Industrial Revolution. The export of education allows us solving the strategic tasks of the BRICS countries taking into account the territorial and industry segments of the world market. This requires extensive research to determine the channels for promoting education in partner countries and to develop mechanisms for attracting foreign citizens to educational institutions, taking into account the training profiles and needs in each particular country yet us outline the challenges and forecasts of education exports for the BRICS countries.

## 2. Methods and Materials

The main method of work is the method of expert panels, aimed at reducing initially differing points of experts' view from different countries to more consistent provisions. This method allowed us recording changes in the observed values, characteristics, to study the dynamics of the processes development in the field of education export.

A decisive place is given to the method of extrapolating trends, since national education systems are formed under the influence of many factors, global trends and challenges.

Forecasts are based on analytical methods. Functional tools for analyzing the work with information flows were used, SWOT analysis as an analytical technology provides the development of strategic education export plans.

## 3. Results and Discussion

Let us consider citizens' dynamics leaving for training of BRICS countries.

An integral part of the state educational policy of the People's Republic of China is study abroad. According to the Ministry of Education of the PRC, in 2018 the number of Chinese students studying abroad reached 662,100 people, which is 53,700 more than in 2017. There is a positive trend in the number of Chinese students leaving to study abroad [7]. The main countries of academic mobility of students from the People's Republic of China are the United States (291,063 people), Australia (97,387 people),

Japan (85,226 people) and the United Kingdom (86,204 people). Of the BRICS countries, only Russia is on this list — 9785 people [7].

It should be noted that China is the leader in the number of its citizens studying at US universities. According to published data, in 2019, 369,548 students from China studied in the USA, which is 1.7% more compared to 2018. According to the data of the 4th quarter of 2019, the following countries are growing in popularity: Canada, Holland, Korea, Singapore and Russia. There is an interest in studying in Spain, Italy, Argentina, and Southeast Asian countries [9].

Among the most developed Asian countries, India is the third largest number of citizens studying abroad. The number of students from India studying abroad in 2019 increased by 2.9% and amounted to 202,014 people.

The leader in the export of education for Indian students is the United States (112,714 people). Australia takes the second largest position — 36,892 people, followed by Great Britain (19,604 people) and New Zealand (15,087 people). Of the BRICS countries, Indian students chose only Russia (4276 people) [2].

According to UNESCO, the number of students from South Africa studying abroad for the period from 2013 to 2017 increased by one thousand: from 7047 people at the beginning of the period to 8068 people in 2017 [3].

According to the Atlas of the Institute for International Education project, an organization under the US Department of State, the number of students from South Africa studying abroad in 2014 / 2015 was slightly lower at 6723. South African students' priority areas of higher education include the UK (18%), Australia (10%), Cuba (6.34%), Canada (4.42%), Mauritius (4.03%), and India (3.09%), etc. Of the BRICS countries, India (208 people) and Brazil (138 people) are on this list [10].

Nearly 2 thousand Africans entered budget places at Russian universities in 2019. Most of the students enrolled in the quota from South Africa come to study under the agreement; in total, in 2018, 409 students arrived from the country.

In September 2019, according to UNESCO data, the total number of South Africans studying abroad in the 2018 / 2019 academic year was 8068, which is 0.2% of the total number of foreign students. According to statistics from the UNESCO Institute, the main directions of outgoing mobility, as in previous years, are the English-speaking developed countries: USA, UK, Australia, which have further strengthened their position in the ranking. In 2018, 1894, 384 and 630 people, respectively, went to study in them. For Cuba, previously ranked fourth, no data are available. In 2019, Germany took fourth position, with 329 students from South Africa studying in Canada, and Canada (282 students) in fifth position. Further in the ranking are Saudi Arabia and India (206 and

196 people respectively). The dynamics of outgoing mobility in these countries has changed slightly [14].

The number of students traveling from South Africa abroad is increasing annually: from 7047 people in 2013 to 7273 people in 2014. In 2015, this indicator reached 7344 people, in 2016 — 7862 and in 2018 – 8068 people [3].

According to statistics from the UNESCO Institute, the number of Brazilian citizens who went to study abroad in 2016 amounted to 32,051 people. Positive dynamics is noted in the number of Brazilian students leaving to study abroad from 2009 to 2016. [14].

The main countries of academic mobility of Brazil's students in 2018 are the USA (13,349 people), Portugal (5438 people), France (4032 people), Germany (3790 people). Great Britain closes the top five (2184 people). We emphasize that the BRICS countries are not priority for Brazilian students [6].

According to the Ministry of Science and Higher Education of the Russian Federation, the largest number of Russian students study in Germany (9953 people), Greece (5305 people), USA (5203 people), Great Britain (3933 people) and France (3599 people) [ 8].

The study has revealed the following trends:

1. High dynamics of BRICS countries students' is going to study.
2. The lack of involvement of the BRICS countries in the export of education within the union.
3. Preference for citizens of BRICS countries to study in English-speaking countries (USA, UK, Australia).
4. Increase in incoming and outgoing student mobility of citizens of the BRICS countries.
5. In the export of education from the BRICS countries, only Russia and China have competitive advantages.

Factor analysis made it possible to highlight the data that the majority of the mobile students of the BRICS countries go to prepare for master's and doctoral studies, while a lot of them seek to obtain a bachelor's degree in their own country. Thus, 88% of Indian students go to graduate and doctoral programs. For China, this indicator corresponds to 82%, for Brazil –78%, Russia –67%. The exception is South African citizens who are focused on undergraduate studies — 69% [6], [8], [13], [16].

The model of the joint educational space of the BRICS countries and the export of educational services is based on the identification of relevant scientific and economic sectors.

#### India

The Ministry of Social Justice and Empowerment (MSJE) lists the most sought-after majors for Indian students studying abroad: engineering and management, science, medicine, and agriculture. For graduate and doctoral students, the list is expanding and includes: dentistry, medicine, pharmaceuticals, architecture, finance, law, art, management, environmental protection, computer science [4].

Among Brazilian students, legal and medical specialties, computer, engineering professions, marketing and journalism are popular [1]. The Unicamp Standing Committee published a list of the most requested courses in 2019. They are medicine, architecture and urbanism, medialogy, biological and computer sciences, patient care, economic sciences, history, pharmacy, dentistry [15].

The first place for China citizen's, are business, management and finance (25%), then in decreasing order are medicine (17%), law, engineering (7%), computer and information technologies (6%) [13].

Students show an increased interest in bionanotechnology, bioinformatics, energy research, modeling and simulation, expanded production, and water-sensitive cities [7].

According to the forecasts of Skolkovo experts, in the list of future specialties for Russian students, the most popular will be: biology, IT, robotics, chemistry, and management [5].

South Africa is a major financial center in Africa and plays an important role in the financial system of this continent. Despite macro-level challenges, South Africa remains the clear economic, technological, and social leader in southern Africa.

Among the economies of African countries, South Africa has the most developed human resources. Nevertheless, according to the UN, it is necessary to improve the staffing system for such important sectors of the South African economy as engineering, information technology, services and new types of energy.

In 2019, the majority of South African students were enrolled in the programs of exact and engineering sciences (30.3%, i.e. 29,5383 people), followed by business and management (27.1%, i.e. 26,4934 people). 23,8535 students (24.4%) studied humanities and 17,6986 students (18.1%) studied pedagogy. The most popular areas of training for South African students traditionally include medicine, engineering and management specialties [12].

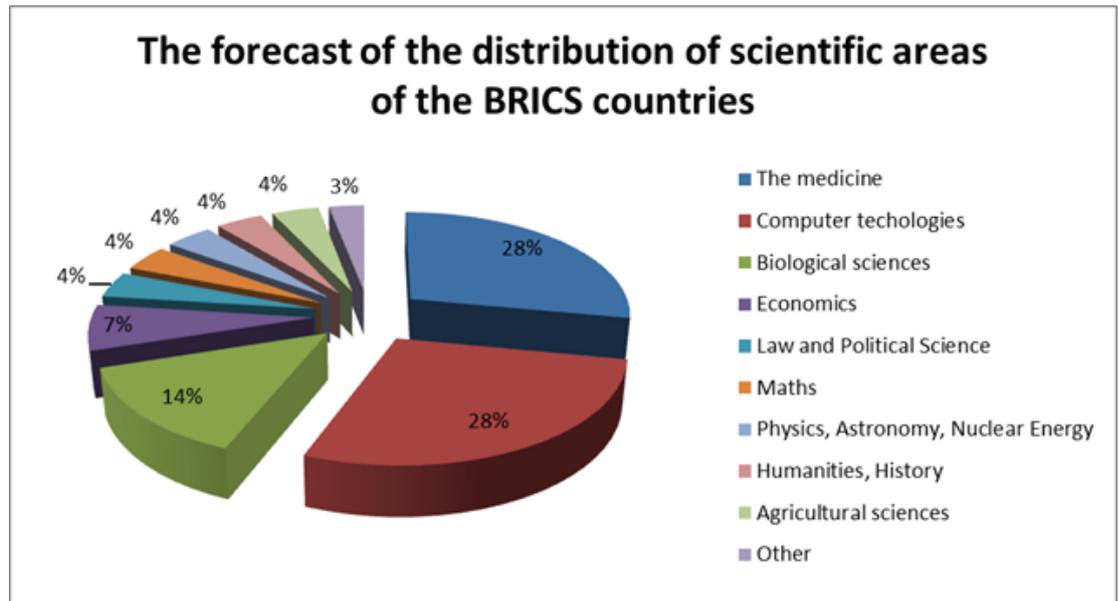
The determination of the main directions of training for citizens of the BRICS countries made it possible to construct a matrix of requests from the scientific fields of the BRICS countries (table 1).

TABLE 1: BRICS Research Matrix

BRICS Research Matrix	BRICS				
	Brazil	Russia	China	India	South Africa
	history	information technology	economics	math	engineering sciences
	architecture and urbanism	tourism and hospitality	биологические науки	mechanics and computer science	math
	social communication — medialogy	law, political science	law, political sciences	physics and astronomy	business and management
	biological sciences	economics	medical sciences	chemistry	humanities and pedagogy
	information technology	personnel Management	information technology	biological sciences	nuclear physics and energy
	medical sciences	Marketing communications		medical sciences	information technology
	economics	medical sciences		earth sciences	medical sciences
	agricultural sciences	journalism		information technology	
	information technology		engineering sciences		
	biological sciences		agricultural sciences		

The data of the matrix have fixed that in the BRICS countries, national education focuses on two main areas: medicine and computer technology. The second highest ranking is taken by biological sciences, the third by economic sciences. At the same time, law and political sciences are priority for the BRICS countries; maths; physics, astronomy, nuclear energy; humanitarian sciences; history and agricultural sciences. The figure shows the forecast for the development of the scientific fields of the BRICS countries until 2030 (the forecast is based on the data of the Peterson Institute for International Economics (PIIE), World Investment Report) [16].

The presented forecast on the requests and policies of the BRICS countries in the scientific fields allows us concluding that the possibility of joint development, the prospects for the development and exchange of students in such scientific fields as medicine, computer technology, biology. science, physics, astronomy, energy.



**Figure 1:** The forecast of the distribution of scientific areas of the BRICS countries

Let us turn to the SWOT analysis. The study has fixed the main competitive advantages of education exports from the BRICS countries and highlight possible risks based on SWOT analysis. The growth in the number of students within the BRICS countries is growing steadily.

Among the BRICS countries, Russia and China have the competitive advantages of exporting education. Brazil, India and South Africa are vanguard countries on their continents: Latin America, South Asia, South Africa. A wave of support and interest in education within the BRICS countries is growing. The interest in the experience of the BRICS countries on the part of the world community is steadily growing.

Educational organizations of the BRICS countries are poorly developing the promotion of their educational programs.

The study has revealed that the most 'attractive countries for students' training remain the USA, the UK and Germany.

The study has fixed the following risks for the education export deteriorating economic situation in the BRICS countries, rising inflation and falling real incomes of the population, lack of awareness of the education system of the BRICS countries and lack of funding for the education system in some BRICS countries.

## 4. Conclusion

Currently, the development of any country is determined and not only by per capita income, but also by the achievements of education. The higher education network of the BRICS countries should represent a coalition of universities, foundations and government institutions, whose activities are aimed at strengthening ties between educational institutions.

For the BRICS countries, the areas of science related to medicine and computer technology are relevant. The trend is biology and economics. Other areas of interest include mathematics, physics and astrophysics, and agriculture.

The majority of students of BRICS countries go to study in English-speaking countries. This fact is partially explained by the lack of the need to learn any additional foreign language. According to UNESCO, students from the BRICS countries, even heading to Germany, France, Spain, Turkey and Cuba, choose specialties taught in English.

According to a survey of students from Brazil, South Africa and India, the main reasons why they chose to study abroad are, firstly, the opportunity to improve their lives for themselves and their relatives. Secondly, this is the desire to enter the desired specialty, most often medical, since within the country the choice of medical universities and specialties is limited and a high final exam score is required for admission.

The study has highlighted the unique opportunities for the BRICS alliance in the field of education export.

Russia and China are strong players in the education export field. They can already accept a large number of students from India, South Africa and Brazil.

India is increasing technological and economic indicators, therefore, it can act as a partner in the export of education for South African citizens.

Among the countries of Latin America, the most developed economy is Brazil. In addition, the Portuguese language is in demand specifically by the citizens of this continent, thus, Brazil can lead the list of countries exporting education.

The interaction of the BRICS countries on the export of education will be a unique world-class model and the unity of modern civilizations.

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