

Readiness comparison of foreign students of different directions to study at a Russian university

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Abstract. An effective system of pre-university training is the key to the competitiveness of Russian universities in teaching foreign students. The study is devoted to a comparison of the processes of formation of readiness, typical for students in different areas: engineering, humanitarian, economic and biomedical. The comparison was carried out on the basis of an intellectual analysis of the opinions of foreign students about studying at the preparatory faculty of the Russian Technical University. There were no particular differences in the factors influencing the readiness to study in different areas. On the contrary, according to the results of the study, it is possible to identify a number of problems common to respondents from different areas of study, and to form algorithms for leveling them within the framework of the pedagogical system of the preparatory faculty. These algorithms could become the basis of an adaptive technology for forming the readiness of foreign students to study at a Russian university.

1 Introduction

Russia has vast experience in teaching foreign students [1] and is actively involved in the process of internationalization of higher education. To ensure competitiveness in this direction, it is necessary to form an effective system of pre-university training. There is an intensive search for ways to improve the system of pre-university training for foreign students. One of the possible directions for solving this problem is the development and application of adaptive pedagogical technologies [2]. Their use would make the training of students as comfortable and effective as possible. In this direction the study of problems that affect the process of readiness formation to study in the Russian education system is important. Problem-solving algorithms could be considered as elements of an adaptive learning technology.

2 Materials and methods of research

The study is devoted to a comparison of the readiness formation to study at a Russian university, which is typical for students in different areas. The readiness to study a specialty

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in a foreign language is considered as the ability of a person to overcome a number of adaptive difficulties and acquire and/or not lose motivation, activity and ways of activity and communication to achieve their goals. The comparison was carried out on the basis of an analysis of the opinions of foreign students about studying at the preparatory faculty of the Russian Technical University. Orange Data Mining tool was used for the analysis.

The survey involved 135 people from 28 countries and 77 cities. 56% of respondents want to further study in the engineering and technical direction, 4% - in the humanities, 17% - in economics and 13% - in biomedical. 5% of respondents would like to study IT, programming, psychology and physics of nanostructures. 4% of respondents have not decided on the direction of study.

3 Characteristics of students

The majority of students wishing to study engineering and technical specialties came from China (34%), Guinea (10%), Iraq (6%), Saudi Arabia (5%), Liberia (5%), Ecuador (4%). Humanities students came from Turkmenistan (50%), Afghanistan (17%), Haiti (17%), China (17%). Most students intending to study medicine and biology came from Afghanistan (17%), Syria (17%), Haiti (11%); economy - China (35%), Afghanistan (22%) and 4% each from Guinea, Mozambique, Congo, Ecuador, Saudi Arabia, Yemen, Iraq; India, Turkmenistan, etc. (Fig. 1, 2).

Chinese students lead in engineering and economics; students from Turkmenistan - in the humanities; students from Afghanistan and Syria - in biomedical direction.

It is known that at present, when studying in Russia, Chinese students choose economics, management, and the humanities [3]. According to our research, the majority of students choose the engineering and technical direction. This is due, first of all, to the specifics of the university where they want to study. We also note that China needs engineering and financial specialists.

Afghan students, like Chinese students, study in all areas. During the Soviet period, Afghans received engineering and technical specialties in our country. Now medical and economic specialties are more in demand. It is known that most Afghan students study in Moscow, Rostov-on-Don and St. Petersburg.



Fig. 1. Map of respondents' countries of residence, a - engineering, b - humanitarian, c - economic, d - biomedical



Fig. 2. Tag cloud "Country of permanent residence", a - engineering, b - humanitarian, c - economic, d - biomedical

For the engineering and technical direction, the ratio of men and women is 87% to 13%; for humanitarian - 83% to 17%; for economic - 70% to 30%; for medical and biological -

78% to 22% (Fig. 3). A greater gender imbalance towards an increase in men is observed for the engineering and technical direction, a smaller one for the economic one.

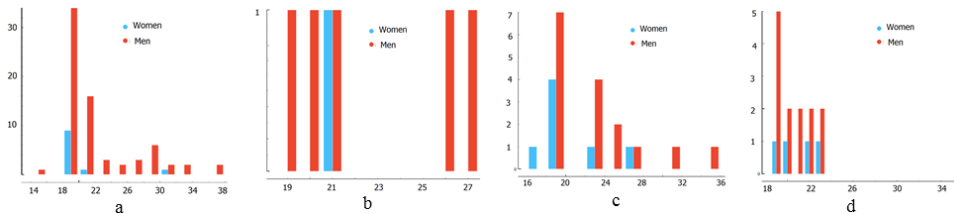


Fig. 3. Gender distribution by age, a - engineering, b - humanitarian, c - economic, d - biomedical

Among the respondents who plan to study in the humanities and biomedical areas, there are no masters. The majority in all areas are respondents with secondary education (Fig. 4).

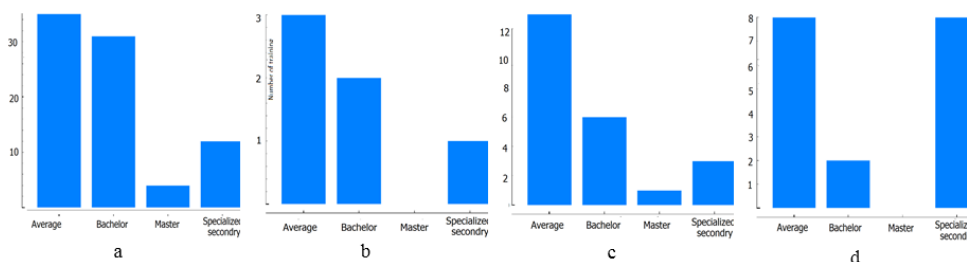


Fig. 4. Distribution of respondents by education, a - engineering, b - humanitarian, c - economic, d - biomedical

Often, when choosing a place for preliminary study of the Russian language and social adaptation, foreign citizens choose the university where they plan to continue their studies. The vast majority of respondents in engineering, humanities, economics and half of the respondents in biomedical areas with secondary education want to continue their education at the main faculties of our university (in Fig. 5, the answer Yes to the question "Do you want to study at the university?" is marked in blue; along the X-axis - age, along the Y-axis - the education on the scale: higher (bachelor), higher (master), secondary, secondary specialized).

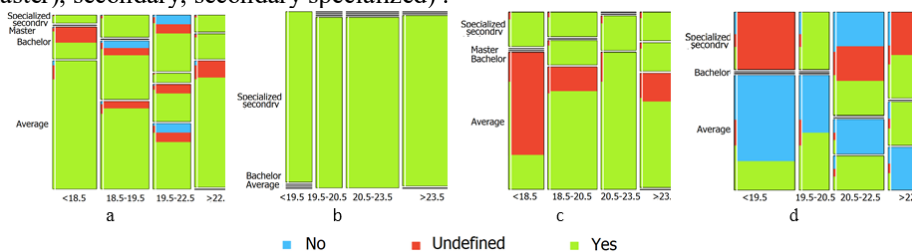


Fig. 5. Mosaic graph (age - education) "Do you want to study at the university", a - engineering, b - humanitarian, c - economic, d - biomedical

The main sources of information about the university and the preparatory faculty where the respondents study are: friends, relatives and acquaintances, teachers, the Internet (Fig. 6). Good reviews from friends or relatives are an important factor in choosing a university [4], as well as the quality of education [5], which is considered by many to be the main reason for choosing a university. It should be noted that in order to start studying at the preparatory faculty, students must receive an invitation from their relatives, friends and acquaintances, which is also a reason to give their preference to a particular university.

Fig. 8. Distribution by industry in which they want to work and education, a - engineering, b - humanitarian, c - economic, d - biomedical

At the same time, we note that almost all the surveyed students want to work in an industry that coincides with their planned direction of study (Fig. 9).

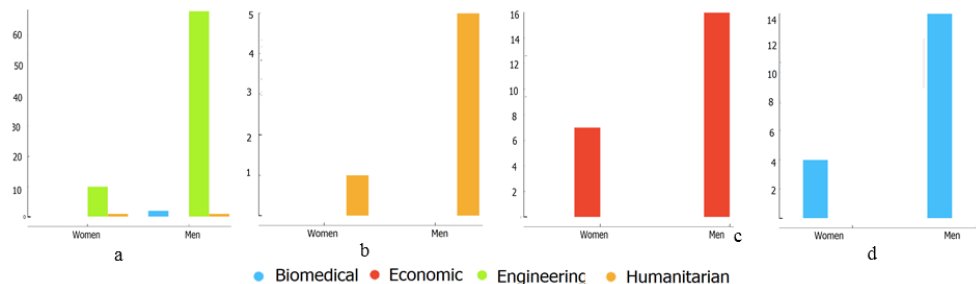


Fig. 9. Gender distribution by industry in which they want to work, a - engineering, b - humanitarian, c - economic, d - biomedical

The vast majority of respondents want to continue their studies at the main faculty of the university, where they study at the preparatory faculty. (Fig. 10). This indicates a careful approach to the choice of the preparatory faculty as a start for continuing education, since at the preparation stage, students pass socio-cultural adaptation not only with the country, but also with the future university. For the engineering and technical direction, this is 85%, 100% - for the humanitarian, 78% - for the economic and 39% - for the biomedical.



Fig. 10. Tag cloud “Do you want to study at the university?”, a - engineering, b - humanitarian, c - economic, d - biomedical

Fig. 11 shows the proportion of respondents who would like to stay in Russia after their studies. For the engineering and technical direction - this is 44%, 33% - for the humanitarian, 17% - for the economic and 28% - for the biomedical.

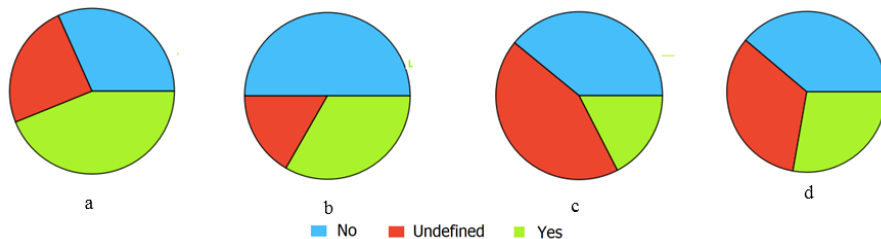


Fig. 11. Distribution of answers “Are you planning to stay in Russia after your studies?”, a - engineering, b - humanitarian, c - economic, d - biomedical

Less than half of the respondents of the preparatory faculty who plan to get an engineering education want to leave Russia after their studies. Only a third of those planning to receive humanitarian education want to stay in Russia. Approximately one sixth of the respondents who plan to get an economic education want to stay in Russia. A quarter of students planning to get medical and biological education want to stay in Russia.

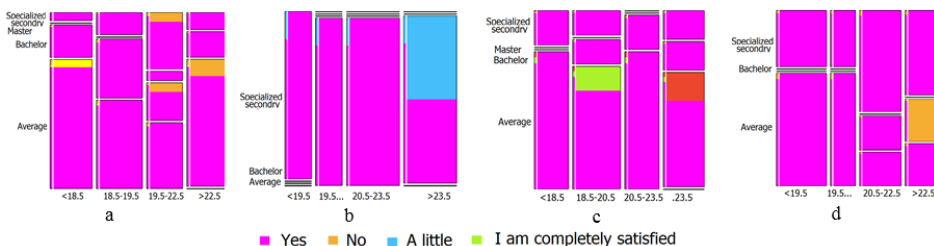


Fig. 13. Distribution of answers "Are you satisfied with the format of training" a - engineering, b - humanitarian, c - economic, d - biomedical

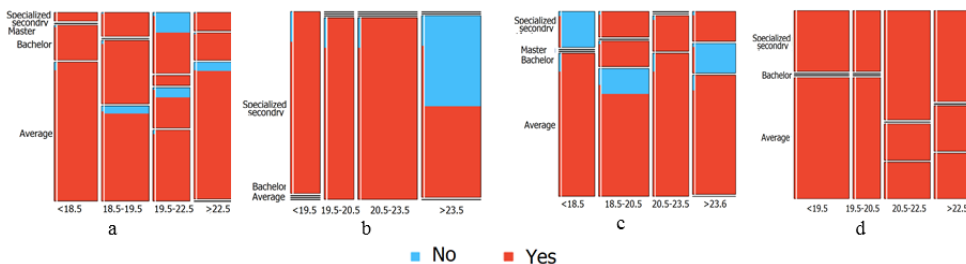


Fig. 14. Mosaic graph (age-education) "Are you satisfied with the content of disciplines" a - engineering, b - humanitarian, c - economic, d - biomedical



Fig. 15. Tag cloud "Are you satisfied with the quality of teaching?" a - engineering, b - humanitarian, c - economic, d - biomedical

6 Difficulties in adaptation

Students who plan to study in the engineering, technical and economic areas experience some difficulties with learning. There are some problems for other students (Fig. 16). Let's take a look at them by area of study.



Fig. 16. Tag cloud "Is it difficult to learn?" a - engineering, b - humanitarian, c - economic, d - biomedical

Engineering: language barrier (43%), no problems (24%), classes from Monday to Saturday (5%), problems with the Internet in the hostel (5%), long classes (2%), study more language subjects (2%), little time for study (2%), difficult access to health care (1%). Humanitarian: language barrier (67%), no difficulties (17%). Economics: language barrier (65%), no difficulties (13%), a lot of classes (4%), classes from Monday to Saturday (4%), laziness (4%). Medical and biological direction: language barrier (56%), no difficulties (28%), fast rate of learning (6%), difficulties with scientific subjects (6%). Students of the



Fig. 20. Tag cloud “Is communication with other international students satisfactory?” a - engineering, b - humanitarian, c - economic, d - biomedical

From the point of view of the emotional and psychological state of students, communication with the city is of great importance. Most respondents like the city (Fig. 21) where the university is located. In general, the respondents have enough time to get acquainted with the sights of the city (Fig. 22).

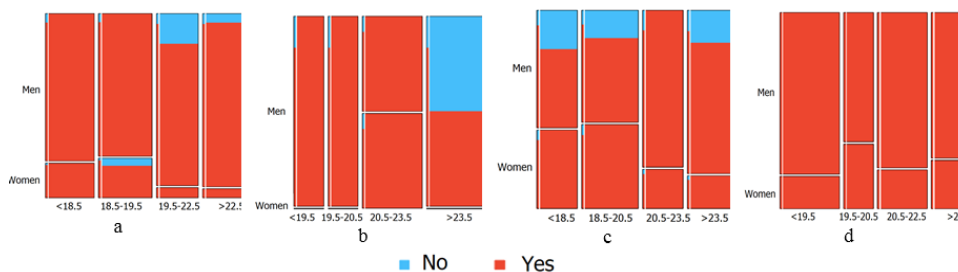


Fig. 21. Mosaic graph (age - gender) "Do you like the city where you study?" a - engineering, b - humanitarian, c - economic, d - biomedical



Fig. 22. Tag cloud "Is there enough time to visit the sights of the city" a - engineering, b - humanitarian, c - economic, d - biomedical

7 Features of readiness formation for learning

Let us consider what wishes the respondents expressed for improving education (Fig. 23).

Engineering: doing well (17%), working in class (9%), learning more language subjects (6%), learning resources (4%), language practice (4%), internet, attending classes, taking notes, picture dictionary. Humanitarian direction: everything is fine (17%), strengthening language education (17%), communication with Russian students (17%), corporate events (17%). Economic direction: learning language (26%), do not know (22%), conscientious work (13%), everything is fine (4%), nothing (4%), get used to it (4%). Biomedical: everything is fine (28%), more intensive learning (17%), language practice (6%), reduce learning time (6%), more interesting learning (6%), serious attitude to learning (6%) .



Fig. 23. Tag cloud "What will improve learning?" a - engineering, b - humanitarian, c - economic, d - biomedical

Let us note recommendations for improving living in a hostel (Fig. 24).

Engineering and technical direction: everything is fine (22%), improve living conditions (9%), keep order (6%), reduce the number of people living in the room (4%), provide good internet (4%), good work in Russia (1%), silence in the hostel (1%), proper rest (1%). Humanitarian direction: everything is fine (33%), improve the soundproofing of rooms (17%), air conditioning in the room (17%). Economic direction: I don't live (30%), individual shower and toilet for the rooms (17%), everything is fine (9%), I don't know (9%), good work (9%). Biomedical direction: successful education (22%), everything is fine (11%), do not live (11%), shower on each floor in the hostel (11%), fewer students in the hostel room (6%), practice (6%), cold (6%).



Fig. 24. Tag cloud “What can improve living in hostel?” a - engineering, b - humanitarian, c - economic, d - biomedical

8 Findings

Despite the difficulties of obtaining higher education abroad, young people tend to go abroad to study. Many people choose Russia, as it has extensive experience in teaching foreign students, allocates quotas for foreign students to receive education, and provides high quality education. Russia seeks to use the academic mobility of foreign citizens to replenish its workforce with qualified specialists from among foreign students who have been trained in Russian universities. Also, foreign students are considered as an investment of public resources in the potential political loyalty of students and their countries [6].

An analysis of the opinion of foreign students studying at the preparatory faculty of the university confirms the fact that our country is interested in foreign students. It is expressed in the desire to create good conditions for living, learning and communication of foreign students. Many issues of the learning process that we classify as complex are not only for foreign citizens. They are generally associated with learning as a complex activity.

It can be noted that the adaptation processes for students of different areas of study have much in common. The main problem of readiness formation to study at a Russian university for all students, as we can see, is the qualitative study of the Russian language. Its solution depends not only on training programs, teaching methods, wide practice, experience and talent of teachers, but also on the goals, motivation, efforts of the student's personality. Therefore, the next most important task of forming successful readiness is the personal adaptation of students, which occurs during the learning process and is closely related to the pedagogical system of the preparatory faculty.

It is the well-coordinated work of the pedagogical system that is able in a short time to help students not to lose, but to develop their initial readiness, which for many was expressed only as a goal and personal motivation to acquire a specialty or work in Russia. Motivation should be strengthened and the styles of activity that students developed while studying at home should be adjusted.

The first task of teachers in this direction is to determine the specifics of the way students receive, process and use educational information, which depends on intellectual abilities and psychophysiological characteristics, i.e. from personal factors. It is also influenced by social, cultural, historical, religious traditions and national characteristics. It is necessary to take into account the specifics and not break the stereotypes of training

familiar to foreign students. It is necessary to form the style of activity gradually, creating conditions favorable for learning through a positive attitude towards the discipline, the teacher, the group, and the learning process. The result is determined by flexibility, mobility and the ability to customize the pedagogical system: preparation of teaching materials, adaptation of learning styles, correction of educational communication, educational work, etc. Therefore, especially at the first stages of education, successful adaptation requires technologies for optimizing the socio-cultural interaction of foreign students, involving them in active life of university and society. Such technologies can be associated with educational work, with the work of student associations, and special programs for the interaction of Russian and foreign students.

9 Conclusion

Using the Orange Data Mining tool, the study analyzes the opinions of foreign students on the factors influencing the readiness formation to study at a Russian university. The opinion was classified according to the areas of professional training planned by the respondents. There were no particular differences in the factors influencing the readiness to study in different areas. On the contrary, according to the results of the study, it is possible to identify a number of problems common to respondents from different areas of study, and to form algorithms for leveling them within the framework of the pedagogical system of the preparatory faculty. These algorithms could become the basis of an adaptive technology for forming the readiness of foreign students to study at a Russian university.

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