Compositional Stochastic Model Checking Probabilistic Adaptation of Foreign Students in the Student Environment

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ABSTRACT
The article is devoted to adaptation of foreign students in Russia, and in the student environment itself. In the article a variety of difficulties experienced by students are presented and analyzed. Aspects that should be taken into account when working and connecting with foreign students as well as the methods and activities that contribute to a successful adaptation of foreign students are identified. Authors of the following article have been working for 4 years in student councils and with different foreign students. Being foreigners themselves gives a unique advantage and perspective on the difficulties and the methods of overcoming them.

Keywords: adaptation, aspects, foreign, international, students, education, councils

I. INTRODUCTION
Through the years, the educational system has evolved and grown massively, from the one university in Songkyunkwan, through university in Bolognya and now with around 200 thousand universities all over the globe [1].

People aspire to learn and collect knowledge, making an educational system made that need, to learn and collect knowledge, more easily fulfilled. From the 10 century to this day we have a cultural environment that is unique, by its structure and people characteristics.

With the growth came a new understanding, that the educational system can work better and more efficiently with the evolution of international connections. The international experience nowadays can be as for a few month as well as the whole period of the higher education process.

International education (exchange of ideas and projects) has its up-sides and down-sides. Like the following up-side:

- Diplomas of the high ranking universities have a much bigger audience in the onward job pursuit, and are believed to have more quality lectures and programs,
- Learning a foreign language. The current trend in our century requires from a young mind to be able of communicating in more than one language (computers, TV shows, movies etc. are not always in our native tongue). Even a year spent in the environment that speaks the foreign language that you are interested in can have an impact on you knowledge of it.

- Practice. Universities have a requirement for all student to take internships, which makes for a great experience and useful connection in the business sphere.
- Access to new scientific approaches and inventions
- Social connections. Universities are a conglomerate of different areas of expertise. Getting to know people from different segments make a valuable asset for the future.

Unfortunately, everything cannot always be ideal. Studying abroad has its negative sides, such as:

- Cost. The price for studying abroad is often very high.
- Visas. Getting a visa is very often a long and tiring process.
- Bureaucracy. In order to get admission to a university of your choosing, assumes a fair amount of documentation, including translating papers confirming your previous studies.
• Cultural barrier. Some people have no difficulties infusing with local lifestyle, while the others have a tough time being abroad. The mentality, mindset and lifestyle of Russians differ from that of Americans, Europeans, not to mention Asians. The long separation from the loved ones, difficulties in communication and the lack of familiar surroundings — are difficult psychological test for people of any age [2].

Adaptation is a process of character trend changing, student relations to the organization and content of the educational process

Getting over the cultural barrier and making the process of adaptation more fluent can be helped with student councils and peers in general. Being a part of systematical workshops and communities can broaden the personal circle of interests, which include diverse areas, literature, music, art, etc. [3].

II. ASPECTS IN WORKING WITH FOREIGN STUDENTS

There are several aspects to consider when working with international students, which must always be taken into account:

• Foreign students who came to Russia have changed not just the city, but the whole country, from this it should be understood that many will undergo social adaptation.

• From the first point follows - the language barrier

• Having gone through social and linguistic adaptation, foreign students are faced with cultural adaptation. Cultural adaptation is a long-term process. This process proceeds differently for different foreign students.

The environment of adaptation of foreign students is the educational system of an educational institution as a whole. In the process of adaptation, many students experience feelings of anxiety, depression, despair, etc. The feelings experienced pass over time. Adaptation can take from several weeks to several months, sometimes even years.

Cultural adaptation consists of four common phases: honeymoon, culture shock, adaptation, and assimilation.

Through the Honeymoon phase you are excited and happy, everything seems new, exciting and wonderful. These sensations usually occur immediately after arriving at a new location.

The "culture shock" phase begins when your anxiety and confusion starts as you, a beginner, try to live in unfamiliar conditions, different from those you are used to.

The "adaptation" phase comes as the culture shock wears off, your feelings calm down and you begin to feel more comfortable and confident in your new place.

The "assimilation" phase - You are comfortable in the new conditions of life and culture, although you still periodically face difficulties [4].

The difficulty of adapting a foreign student to study at a university is that it is necessary to abandon the habitual, make efforts, overcome various problems and professional difficulties [5].

III. REVIEW OF THE DIFFICULTIES IN THE LIVES OF FOREIGN STUDENTS

After monitoring and evaluating the student experiences during the study process, it was concluded that a foreign student may face many difficulties. The most common difficulty is the language, in which the lectures are held.

Much depends on the level of language proficiency. For many foreign students there is not enough time to learn the language in the preparatory course, in an academic year, which entails poor academic performance in the main program, lack of communication, etc. Language difficulties prevent entry into a new culture. The degree of adaptation of students from different countries is various, as it depends on the cultural "distance". If the characteristics of the native and the country where the student is educated are worlds apart (geography, climate, religion, national food, customs, mentality), then adaptation is more difficult.

The conditions for organizing the educational process pose significant difficulties. Many foreign students are not ready for the methods and methodology of teaching adopted in this or that educational institution. The factors influencing the adaptation of students can be divided into several main groups:

• factors depending on the student himself;
• factors depending on the teacher;
• factors depending on student councils.

Factor depending on the student himself can be reviewed more thoroughly, in sociology they are characterized as inner factors:

• Language barrier;
• Values;
• Level of communication skills;
• Common values in two cultures;
• Motivation to overcome communication obstacles in the new socium;
• Psychological individuality;
• Possession of the accompanying information about the new sociocultural environment;
• Inducement to get professional education;
• Contentment with the international relationships in the new environment;
• Self-organization;
• The need for self-affirmation [6].

Difficulty in intercultural communication, everyday communication with other students can also arise due to lack of knowledge of the language. In this case, the relationship with compatriots plays a special role. Abroad, the cohesion of a team of students from one country is faster as they are united by the communities of same manners, traditions, culture, customs, mentality. Adaptation to the new social and cultural environment takes place through active communication with local students. It is friendly communication that brings good results in learning the language and adapting to new living conditions.

In the process of adaptation of foreign students, the climatic factor is an important factor. Foreign students that come from warm climate countries, need to get used to the cold winter season in countries with cold climates.

We must not forget about financial difficulties. There are technical problems with paying for tuition and other services provided by an educational institution. Also, foreign students are not always able to officially find a job, because of this there is a shortage of funds.

One of the important points that must not be forgotten related to paperwork, renewal and residence. There are problems of legalization and confirmation of status (registration and visa operations).

These financial difficulties can be sorted in a larger group of factors, external factors, that make a more viable environment for engaging in the educational process

External factors:
• Socio-cultural values in Russia;
• Level of similarity of the cultures and values;
• New language;
• Educational environment;
• Interaction between students and professors;
• Presence of Russian friends – natives;
• Organization of leisure;
• Having hobbies in the new environment;
• Resolving problems involving documents, accommodation, food [6].

According to personal experience and analysis of works like I.O. Krivcovaya [7], in the process of adaptation in the educational environment, a foreign student in the first year of study encounters such difficulties as:
• Parting with the Motherland, where he lived most of his life;
• Insufficient language proficiency;
• Difficulties associated with climate change;
• Getting used to urban infrastructure and traffic;
• Getting used to living conditions in hostels;
• Difficulties associated with getting used to the educational system of the educational institution.

To solve certain difficulties encountered by foreign students in the process of adaptation, it is necessary to help him get used to new living conditions, as soon as possible to introduce them into various branches of developmental activity: educational, public, cultural and creative. In the process of interacting with these areas, a foreign student experiences self-realization, self-affirmation, development and self-improvement.

An important part in the process of adaptation of a foreign student is played by the administration of the educational institution [8].

IV. DETAILED ANALYSIS OF THE CULTURAL BARRIER ISSUES AND SOLUTIONS

The philosophy of culture represents the knowledge of culture, that is considered our own, self-awareness. Culture is a characteristic and knowledge of a particular group of people, as well as language, cuisine, social habits, music and art. Changing that group of people, language, cuisine, social habits etc. brings issues of cultural barrier in individuals.

We would like to analyze 5 main cultural groups. [9]

• Western culture has been associated with the European countries as well as ones that have been influenced by them in the past, United States of America. Western culture has its roots in the Classical Period of the Greco-Roman era and the rise of Christianity in the 14th century. Other drivers of Western culture include Latin, Celtic, Germanic and Hellenic ethnic and linguistic groups. Today, the influences of Western culture can be seen in almost every country in the world.
• Eastern culture generally refers to the societal norms of countries in Far East Asia (including China, Japan, Vietnam, North Korea and South Korea) and the Indian subcontinent. Like the West, Eastern culture was heavily influenced by religion during its early development, but it was also heavily influenced by the growth and harvesting of rice. In general, in Eastern culture there is less of a distinction between secular society and religious philosophy than there is in the West.

• Middle East culture - The countries of the Middle East have some but not all things in common. The Arabic language is one thing that is common throughout the region; however, the wide variety of dialect can sometimes make communication difficult. Religion is another cultural area that the countries of the Middle East have in common. The Middle East is the birthplace of Judaism, Christianity and Islam.

• Latin culture - Many of the Spanish-speaking nations are considered part of the Latin culture, while the geographic region is widespread. Latin America is typically defined as those parts of the Central America, South America and Mexico where Spanish or Portuguese are the dominant languages. Originally, the term "Latin America" was used by French geographers to differentiate between Anglo and Romance (Latin-based) languages, according to the University of Texas. While Spain and Portugal are on the European continent, they are considered the key influencers of what is known as Latin culture, which denotes people using languages derived from Latin, also known as Romance languages.

• African culture - The continent of Africa is essential to all cultures. Human life originated on this continent and began to migrate to other areas of the world around 60,000 years ago. Other researchers, like those from Estonian Biocentre in Tartu, believe that the first migration may have been much earlier, as early as 120,000 years ago. Africa is home to a number of tribes, ethnic and social groups. One of the key features of this culture is the large number of ethnic groups throughout the 54 countries on the continent. Nigeria alone has more than 300 tribes, for example.

The cultures have their many differences, customs and history, which can be hard for a student to comprehend. Learning a new language to the needed level of understanding and fully participating in the class, is usually a long process.

For a more detailed review of issues and solutions we divided them into 3 parts:

• Customs and holidays - the core cultural moments, customs, basic vocabulary of the country, sense of humor. Theater groups and university professors can educate the students about the history of customs and holidays, whereas theater groups can show in advance or in a controlled environment the custom or holiday. It is necessary to acquaint people with representatives of other countries, explaining the history of origin, traditions, customs.

• Lack of communication - people are not friendly, not everyone knows English very well. Such problems can be solved with the help of student unions and knowledge of several languages. Speaking another language is an effective way to overcome cultural barriers in communication. People that join student unions tend to be more open and communicative, as such we strongly advise to make it mandatory to have a special and direct invitations to all foreign students to all of the festivities and socializing organized by them. Tracking the feedback from your interlocutor helps you to get a better sense of your actions.

• Stereotypes – Premeditated thoughts about a culture or a place without knowing the culture or psychology of the people can be unhelpful in the process of adaptation. Russia is often represented as a land of people whit affinity for alcohol, and free wildlife. With a very unsafe traffic, and drivers. It is necessary to have respect for people from other cultures and their values, and not give in to stereotypes – they do not picture the real situation. The respect is necessary for the both taking part in the dialog.

Practice shows that the essence of assistance in the adaptation of students is understood in different ways. In some educational institutions, student clubs are organized, where there is an acquaintance with the cultures of different countries of the world, volunteers help foreign students to solve their everyday problems. In other educational institutions, work on the adaptation of foreign students are led to learn the language in which they will be studying, and organizing national holidays.

V. METHODS OF RESOLVING THE DIFFICULTIES

It is important to conduct introductory activities with newly arrived foreign and Russian students. In addition, there should be close interaction with the administration, with employees of structural divisions (departments, hostels, administrative departments, etc.). Everyone should take into account and understand the issue of working with foreign students, carry out the
necessary measures for this, so the work should be carried out harmoniously.

It should be noted that meetings of foreign and Russian students within the framework of the university are necessary for the faster establishment of contacts and mutual understanding, familiarity with the legislation of the country.

It is also necessary to carry out systematic explanatory work on existing internal rules, norms, requirements of behavior and order, and not to intimidate newly arrived students. In this case, organized thematic events show a very positive effect on the students, these events consider as well the causes of conflicts and measures to prevent them and the influence of drugs and alcohol on the development of various situations and incidents.

To see real results, work has to be personal, connecting with people is important, and not only reports on paper, then the atmosphere in the student body and the university will be more favorable and will not allow conflict situations to arise.

Activities that help with the separation anxiety, parting with the country of origin can be revied as:

- National holidays celebration
- Presentations and events that are significant to the culture
- Big-brother system, older students from the same country in the face of a reliable source of information and psychological support.

Activities that help with language proficiency:

- Russian speaking club – lead by students for the students, in which veteran foreign students together with Russian native speakers share their experiences
- Enrolment in variety of group sports, seminars, media and art in the university

Activities that help with overcoming living difficulties:

- Living with a student at least 1 academic year older (older students have accommodated to the living arrangement and have a knowledge of elementary bureaucracy with in the dormitory and University, they tend to be more calm than the first year students)
- Active and aware student dorm council (having a supportive student community that has a rank in the university hierarchy gives stability and comfort to international students, poetic, musical nights and similar “in-door” activities bring all students living under one roof closer together)

- When packing for studying abroad it helps to take one thing that the student can connect to as a piece representing home or emotional peace. This makes the environment feel more familiar.

Activities that help with overcoming the cultural barrier:

- Festivals such as “National cuisine day”, “Cultural meeting” can be held as a way to bring closer the traditions and habits of the different nationalities. For 10 years festival “Cultural meeting” has been the main event for experiencing different cultures in the Saint-Petersburg Mining University. This event is fully organized and conducted by foreign students.
- National Russian holidays (example - Maslenica) – the experience of these holidays are much better accepted and remembered experienced in a controlled environment, a planed excursion day or a type of festival with master-classes with members from their class and countries have shown a positive impact on foreign students.
- Spartakiads and Faculty championships – this types of activities are usually organized by the Russian students and/or professors. It has proven very helpful for overcoming the cultural barrier and language barrier when given a chance to participate and being invited to such events.
- Seminars and trainings for foreign and Russian students on protection from discrimination.

Mediums that help in the process of sociocultural adaptation, have to engage and represent useful information, so they can guide the students in achieving new social roles and resolving conflicts. Such mediums are dean of the foreign students, professors and the student organizations and councils [10].

VI. CONCLUSION

The adaptation of a foreign student is a complex process that depends on many factors, internal and external. Successful social and linguistic adaptation in foreign countries of education, contributes to the rapid inclusion of students in the educational process, as well as to improve the quality of the level of professional training. The solution to difficulties lies in cultural interaction, which is expressed in the openness of the sides of communication.

Based on real experiences of students, authors have presented four groups of activities that help make cultural integration and communication faster and more comfortable. In these activities the main pilar make student organizations themselves, they have the
volunteers and organization hierarchy to help in conducting many of named activities.

The education system in a higher educational institution should turn a foreign applicant into a valuable workforce that will be in demand not only in the country from which he came, but also in the host country and all other countries of the world.

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