

# Methods of adaptation of first-year students in higher education institution, as a basis for involvement in academic and student life at an early stage of education

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**Abstract.** While studying at a higher educational institution, a student is immersed in a unique world with its own rules and laws. Training in various forms of specialization lasts from 4 to 5.5 years. During this time, the student manages to replenish his knowledge base with unique competencies and qualities that will later help to achieve successful career growth. It is obvious that getting a higher education plays a significant role in the formation of a personality, higher schools have everything necessary to test the acquired knowledge and skills. The flexibility of the curricula allows students to choose which disciplines they want to study. But before starting to function comfortably in an educational environment, students must go through adaptation. In the entire history of the existence of educational organizations, there was no higher educational institution where the student felt comfortable and cozy from the first days. This article pays special attention to the methods and forms of undergoing the adaptation period for first-year students on the example of the implementation of a number of activities taking place at the Institute No. 1 “Aviation Technology” of the Moscow Aviation Institute (National Research University).

## 1 Analysis of modern forms of adaptation of students at the university

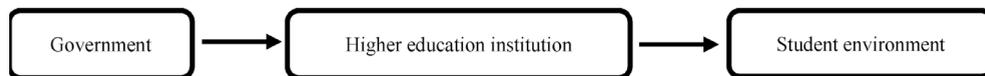
During the entire existence of higher education schools, the image of the student is constantly changing and improving. If we turn to the last century and delve into the history of students, we will notice that the modern student is completely different from the student of the 20th century. Therefore, a logical question arises: “What is the reason for this?” Analyzing the history of the development of education, as well as the periods of time and situations that arose at certain points in history, we can conclude that education directly depends on the needs of a person and changes depending on his/her requests. Currently, the industry is on the verge of digital transformation, many enterprises are switching to internal management through digitalization [1]. This explains the high request of IT specialists, whose profession is considered to be one of the most popular in the modern world. The next scheme reflects student environment’s dependence of the state’s needs (figure 1).

The following follows from this scheme: the government, through its state-owned companies and departments, analyzing the situation in the country and monitoring the development of all spheres of consumption, interacts with higher educational institutions about ordering

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specialists in demanded areas in the country. A higher educational institution, receiving an order from the state, carries out recruitment according to its main educational programs, forming a student environment for these programs and for itself. This can be concluded on the basis of the release of a huge number of specialists in the field of engineering and IT programming, although 10–15 years ago everything was radically different [2]. During that time the government required more specialists in the field of economics, finance, banking, etc., this was mainly due to the post-industrial period, when the state produced various types of products over the needed quantity and the requirement on the specialists in the field of sales arose to sell those products to the partners.



**Figure 1.** Student environment’s dependence of the state’s needs

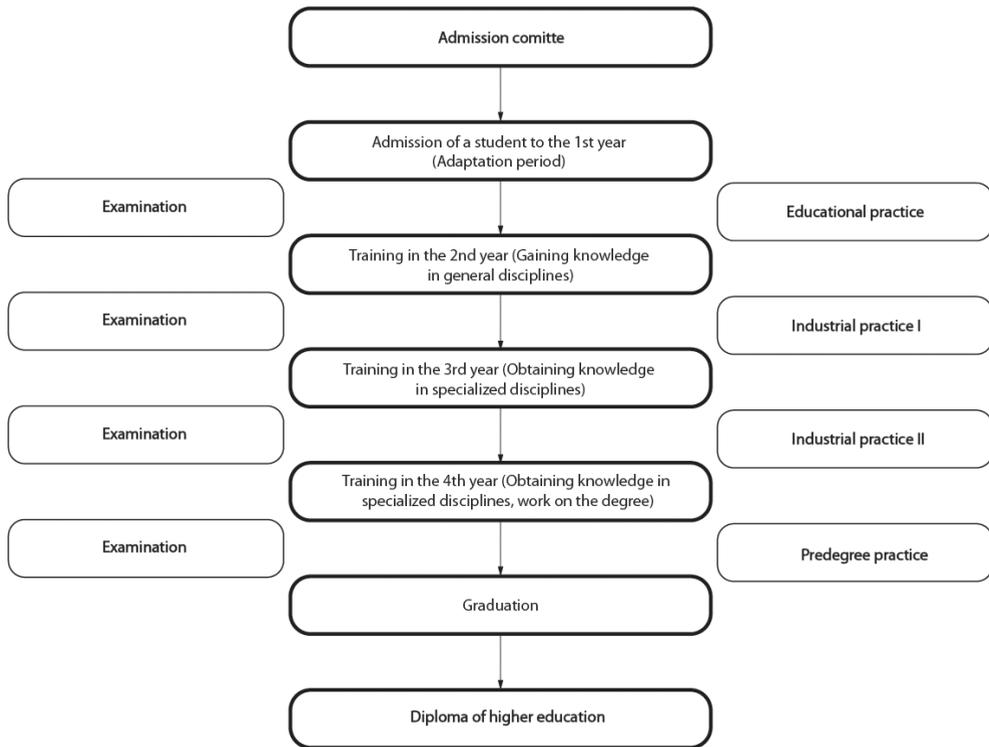
A person who is a specialist in a specific field of activity has a certain set of professional competencies that are laid down in him at the stage of education in a higher educational institution, hereinafter referred to as a university. It is obvious that the competencies that should be decisive in a particular profession are different for each person, but they help to solve problems during professional activities.

At the stage of admission to the university, applicants have only personal competencies that were brought up in them from birth by their parents and the environment in which they grew up and developed. As we can guess, applicants do not have professional competencies at the moment, since they have not yet studied their future profession and do not know what professional qualities they will need. If we perceive such an area of development of professional competencies in a person, then the university occupies the main position in it, since during training, students, in addition to participating in seminars and lectures, have the opportunity to undergo practical training at enterprises or companies in which they after graduation from the university can get a job. It is practical trainings that enable future specialists to test their professional competencies in practice solving real tasks set by a future, potential employer.

Many people know that the education of students at the university is divided into several stages. We present the proposed stages in a step-by-step model of the existence of a potential student in an educational environment which is reflected on the figure (figure 2).

This diagram clearly shows what stages a student must go through in order to master professional competencies and obtain a diploma of higher education. Of course, all these steps are very important, and have the effect of sequential accumulation of knowledge—without overcoming the upcoming stage, a student cannot move to a new stage, since only a sequential algorithm for obtaining knowledge is the most effective in modern society. At the very beginning of the scheme, we see the first stage, where the applicant gets acquaintance with the university and overcomes the first serious stage of selection—entrance tests. The second stage shows us the student’s admission to a higher educational institution and the beginning of the adaptation period. Our article is devoted to this period and methods of adaptation [3].

In this article, we will analyze what is meant by the phrase “Social adaptation of students at the university”, what difficulties students face when getting into a new unexplored environment of a higher education school, what methods should be used to adapt students as soon as possible, as well as what activities or social conditions should be fulfilled in order for a student to feel “at home” in a new educational team.



**Figure 2.** The path of a student while studying at a university

The social adaptation of a student in a higher educational institution is understood as the ability of a subject (student) to adapt to a new, unexplored environment, to find points of interaction with new subjects (faculty, classmates) for further comfortable existence in a single team. As a rule, students' social adaptation begins in the 1st year of study and lasts for a total of 1 year. Researchers in this field distinguish 3 forms of adaptation:

- 1) formal adaptation—scanning and studying the signs of behavior of objects in a new educational environment through social relationships;
- 2) social adaptation—integration of students and their further unification into a new collective (student group) through communication and study of the subject and integration of these study groups into the student environment;
- 3) didactic adaptation is the preparation of students for new forms of studying educational material, as well as their participation in student events.

A significant part of adaptive situations arise as a result of changes in learning conditions when entering a university. This aspect of adaptation is called didactic adaptation, which includes adaptation to new forms of control. The adaptation of first-year students is closely related to their academic success. The purpose of didactic adaptation is to develop optimal methods of organizing the educational activities of first-year students, taking into account the specifics of the learning environment and the peculiarities of cognitive activity at a young age. The success of students' education depends on many factors, one of the most important is their intellectual development as an indicator of mental activity.

Let's consider the adaptation period of students on the example of the Moscow Aviation Institute (National Research University), hereinafter—MAI (NIU).

As a rule, a new student collective (study group) unites a community of students of the same age. All of them are radically different with a set of individual achievements and personal qualities, but they are united by the goal of obtaining a higher education diploma. Naturally, students have a certain amount of excitement before the start of the academic year, which is caused by several factors:

- 1) a completely new team in which they must exist and find points of interaction;
- 2) unknown form and methods of education.

It is obvious that it is almost impossible to cope with the above-described factors and overcome such a difficult and thorny path alone, so students in the first days of training try to establish communication with the same freshmen as them, try to find comrades close to themselves in spirit and ideology. Of course, the concept of higher education is based on the acquisition by students of professional skills and knowledge for further professional field. The university is the next body after the school, which is engaged in the educational and upbringing activities of students to form the principles of ideological equality, the principles of humanism, behavior in society, and so on. The teaching staff of universities have always acted and are currently acting as mentors for the student community. Of course, such an important stage as social adaptation is not ignored, and senior colleagues and teachers constantly interact with first-year students to overcome the adaptation period as soon as possible [4].

Before proceeding to the description of the way to overcome adaptation, it is worth analyzing the problems and barriers faced by students who have opened the doors of the university for the first time.

Of course, one of the main reasons for concern is a significant increase in the volume of the academic load, the emergence of new unfamiliar disciplines, the development of which requires in-depth knowledge in related fields. Next comes a completely different and unknown format of the educational environment into which the student gets. The diversity begins, in which the student needs to exist. There are different formats of classes—seminars, lectures, practical works, independent study of methodological manuals and literature. In addition, student needs to have time to find time to participate in student life.

Another barrier that many first-year students face is the development of skills for practicing didactic material during training sessions. Preparing for seminars, taking notes of lectures, and performing laboratory work often require completely different skills and techniques that are absolutely incompatible with the school methodology. This is also something freshmen have to learn.

The next separate problem for first-year students is interaction with the teaching staff of the university. Higher school teachers often differ in their methodical approach to the disciplines taught, it is obvious that each teacher has his own personal method of teaching. Besides, teachers differ from school teachers in academic titles and degrees, which gives them an undeniable weight in the scientific community. All of the above descriptions can make first-year students uncomfortable during first meetings with teachers and be a significant “stumbling block” for interaction [5].

Of course, another determining factor in the anxiety of future students is the relationship with classmates. Building such relationships is not always easy and painless, because the formation of a new team of people is often accompanied by conflict situations, drawing attention to themselves, the distribution of “roles”, which is not a very pleasant process.

Also, student life itself is not as unambiguous as it seems at first glance. Student life directly depends on the student's self-organization. As far as you have developed internal

discipline and organization, so you will be open to the new world of students. In many universities, at the level of educational standards, there is no such factor as constant assessment of knowledge and attendance control, so many students have a feeling of complete freedom, as well as the temptation to use their time not from studying but on themselves.

## **2 Methods of adaptation of students at the university**

Having analyzed the problems faced by first-year students at the initial stage of education, it can be concluded that the adaptation of students is a complex, dynamic and multilevel process of rethinking and restructuring the need-motivation base, the complex of existing personal competencies and skills in accordance with new goals, objectives, prospects and conditions for their implementation. Turning to the methods of social adaptation of students in a new educational environment, it is impossible to pass by the most basic and main method—unequal interaction with the applicant at the stage of submitting documents to the university.

The main source of anxiety among young people at the stage of joining a new team is the complete absence of personal contacts and familiar faces in the new team. In order to solve this problem, it is necessary to put together the image of the university as a place in which the student will be comfortable from the first days of his stay. This should be done in the admissions committee at the earliest stage of the applicant's acquaintance with the university. In the admissions committee besides ordinary activities to agitate children for admission, it is worth carrying out the following ones:

- joint meetings of applicants and senior students;
- meetings of applicants with the university administration;
- personal master classes in breakthrough areas of the university for applicants;
- summer scientific schools at the university during the admission committee.

So, let's talk in detail about each of the activities. Let's imagine an ordinary average applicant who graduated from school in the summer, successfully overcame all the entrance tests and is ready to enter a higher educational institution. He is concerned about all the psychological barriers that we have described above, and at the stage of the admissions committee tries to find out as much information about his university as possible. It is at this stage that the applicant should be made to understand that after admission he will not be left to himself in any case, but on the contrary, the university will accept him into its friendly and warm environment from the first day [6].

### **Joint meetings of applicants and senior students**

The very first events during the admission committee, in our opinion, should be meetings of applicants and senior students. You will probably ask the question: "Why should meetings with undergraduates be the first important event, and not with the university administration? The administration is more competent in the field of education and will be able to answer the most outstanding and difficult questions from their experience". Psychology will help us answer this question. From the point of view of psychology, when young people move from one environment to another, it is much easier for them to perceive information from people about their own age. A similar worldview and assessment of actions play a role here, applicants differ from undergraduates much less than from the administration of a university. A completely different question is the competence of undergraduates who will talk about their Alma mater and answer questions, because we all know that the first impression is the most memorable. Therefore, when preparing for such events, the organizers should seriously and carefully approach the selection of undergraduate students.

### **Meetings of applicants with the administration of the university**

After the applicants have learned the overwhelming amount of information from their “colleagues”, the university administration at their meetings will tell about the specifics of the environment where the applicants are enrolled. It is important here not to repeat and not to touch on the topics that were discussed at the previous meeting with the students. Therefore, when preparing for such events, it is necessary to prescribe a scenario and a list of topics that need to be discussed [7].

The main criteria for evaluating these events is the number of applicants who have increased interest in the university and, according to external signs, anxiety and excitement have gone away. If after a while the meeting turned from an official to a warm friendly conversation it can be surely stated that the barriers of young people have been removed.

### **Personal master classes in breakthrough areas of the university for applicants**

The vast majority of school graduates choose a place for higher education according to 5 main criteria:

- university rating;
- the relevance of the specialty;
- highly qualified teaching staff;
- modern level of education;
- high-tech laboratory facilities (mainly for technical universities).

If you can find out about the first 3 criteria by going to open days, talking with graduates, and reading information on digital platforms, then how can you find out about the modern level of education and high-tech laboratory facilities. To make sure that the university responds to these criteria, it's not enough just to find some information, it's necessary for future students to look at the facilities and interact with some technologies. To determine such important points as the level of education and laboratory facilities it is necessary to conduct personal master classes, where children will get acquainted with the methods of training highly qualified personnel and learn a lot of useful scientific information before starting training. These can be master classes related directly to the training specialties, psychological master classes, for example, “How to adapt to a new environment in the shortest possible time” and etc. [8].

### **Summer scientific schools at the university during the admission committee**

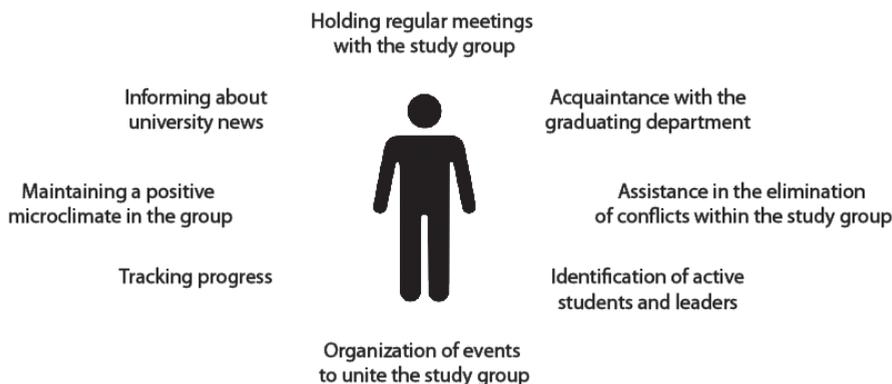
Holding summer scientific schools is also one of the ways to overcome the adaptation period. Often after enrolling in a university new students have about 2 weeks to recuperate before the start of the new academic year in the status of a student of a higher educational institution. Scientific schools are an excellent tool for the development of first-year students in the educational environment and an excellent way to get acquainted with the teaching staff, as teachers in scientific schools are often full-time university teachers. And, of course, a distinctive feature of schools from master classes is the frequency of lessons. Schools can arrange the learning process in such a way that students appear every day, which allows them to adapt to a new space faster.

It is worth noting that these methods of adaptation must be carried out during the admission committee, i.e. at the very initial stage of acquaintance of future students with the future place of study. Next, we will talk about adaptation methods during training in the 1st year [9].

This method is used in many educational institutions, but is not effective in all of them—curation and mentoring. In the first year, when students join study groups, if they did not pass the adaptation methods during the admission committee, which we described above, they are usually not sufficiently immersed in the specifics of the educational institution. They do not know the material base, do not orient themselves on the territory and, most importantly, are not familiar with each other. In this case, the most effective way to unite the children among themselves and give information about the university is to assign a curator to each study group. As a rule, the curator is a senior student who is studying in a related specialty and at the same department as first-year students. He must have the following personal competencies and skills:

- good nature;
- high organization;
- sense of duty;
- communication skills;
- organizational skills;
- oratory;
- responsibility;
- openness;
- constant self-development;
- developed analytical abilities.

This is only a small part of the qualities that a curator should have. At the very initial stage, the main task of the curator is to create a warm microclimate inside the study group, teach the students how to work as a team, become real friends always ready to help each other. Secondary tasks are also very important since the educational environment is very multifaceted and the influence of various factors is also very important for the successful completion of training. Figure 3 shows the functions of the curator during the adaptation period for first-year students [10].



**Figure 3.** Functions of the curator

After completing the 1st year of study, students become more actively involved in student and scientific life. As the main part of the adaptation is completed, the curator is replaced by a mentor, whose main task is to monitor their student, as well as help him/her in personal and

professional growth during training. The mentor is an employee of the scientific laboratory or department of the educational unit where the student studies. The mentor is assigned to a specific student and leads him to graduation from the university. A higher educational institution in addition to training highly qualified personnel for work in industry must form its own personnel reserve. So, the task of the mentor is to interact with his/her student and form professional qualities in him/her for further admission to the master's program and then to a PhD program to become a university teacher. Naturally, this process and the prospect of realizing oneself in higher school after graduation is not suitable for everyone, but it is one of the effective ways to grow professional staff for your own organization. Such a form of overcoming the adaptation period of first-year students has been successfully implemented at the Institute No. 1 "Aviation Technology" MAI (NRU).

In addition to curating and mentoring to overcome the adaptation period a special place is given to the educational work of students. There are separate principles of the educational process at the university:

- 1) freedom of choice—the right to choose must be balanced by conscious responsibility;
- 2) activity—transform, complement, find new connections;
- 3) feedback—tracking moods, level of understanding, degree of interest;
- 4) openness is a combination of diverse educational models and the life experience of an individual subject;
- 5) ideality—formation of professional motivation, demonstration of professional values based on reinforcement of personal success;
- 6) diagnosticity is the study of personality activity, upbringing, discipline, interests, professional orientation, sociability, commitment, organization, responsibility, needs, the level of development of the emotional and motivational sphere, self-criticism, exactingness.

Educational work at the university is divided into the following areas:

- 1) cultural and moral;
- 2) educational and professional;
- 3) family and household;
- 4) social;
- 5) economic;
- 6) physical;
- 7) aesthetic;
- 8) patriotic;
- 9) civil;
- 10) environmental.

After the end of the adaptation period for first-year students, educational work continues, as a person constantly learns and discovers something new throughout his life, and as the Soviet politician and statesman V.I. Lenin said: "Study, study and study again".

Summing up, I would like to say that at all stages of the existence of domestic and foreign education, breakthrough professions changed with regular frequency, this was due to scientific and technical progress. The world community has been mastering new technologies for years, which were discovered by great scientists and industrialists. Over the years, the methods of education have been restructured countless times in an attempt to improve the training of highly qualified personnel, but one thing has always remained unchanged—the psychological state of a person when he moves from one stage of life to another. In our case, this is the transition of a schoolchild to the status of a student. The psychological state is fundamental for its owner, but for various reasons people prefer to forget about it, focusing their attention on the personal and professional qualities of a person. In this article we have analyzed what ways there are to overcome such a psychological barrier during the adaptation of people in a new educational environment and what methods of educational work exist for the cultivation of high-quality and professional personnel.

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