

**PEHPP 2019****Pedagogical Education: History, Present Time, Perspectives****MODERN TECHNOLOGIES FOR IMPLEMENTATION OF  
INDIVIDUAL EDUCATIONAL TRAJECTORIES IN HIGHER  
EDUCATION**

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***Abstract***

In the article the problem of introduction and implementation of individual educational trajectories in modern Russian higher educational institutions which is directed to differentiation of an educational product is considered. The authors notice that individualization of the educational process is one of the leading principles of higher education renewal, it is related to the problem of increasing competitiveness of Russian institutions of higher education. However, there is a sustainable lack of scientific knowledge about methods, forms and practices which would allow universities and institutes to construct an adapted education individualization model. Taking Yaroslav-the-Wise Novgorod State University as an example of implementing a project-oriented model, the authors consider a number of modern technologies which allow implementing individual educational trajectories comprehensively. Based on a complementary approach, and guided by a systemic method, the authors analyze three groups of technologies: a) technologies of project activities, b) technologies of educational process support, c) technologies of education digital transformation. One thesis of the work is related to the authors' statement that the introduction of individual educational trajectories must not be limited by the opportunity for the student to select academic disciplines. As a result of introducing the technologies of individual educational trajectory in the university, a personality capable to solve non-standard problems, think creatively, and adapt to a quickly changing environment efficiently and flexibly is supposed to be formed.

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**Keywords:** Individual educational trajectory, variability of education, project education, project-oriented model, tutor.

## 1. Introduction

Attention of scientific community to the problem of educational process individualization in higher school has been increasing from year to year. This situation can be largely explained by tendencies of modern pedagogy as well as the conditions in which institutions of higher education exist nowadays. Today, in the system of higher education there occurs a stage of generating new educational models which must respond to challenges of our time, take into account the growing dynamics of labor market, and, due to this, prepare the manpower with competencies of the future (Romanov, 2018; Yerznkyan et al., 2019; Dudin, Bezbakh, Frolova, & Galkina, 2018). As a result, there are a growing number of researches on relevant educational technologies which allow forming a personality capable to think originally and efficiently, and adapt flexibly to rapidly changing environment. Particularly, modern researchers emphasize that “the updating Russian system of higher education requires new educational technologies associated closely with today’s life, forming an active civil position of a future specialist” (Starchikova, Shakurova, & Moshchenok, 2018, p. 53).

Foreign researchers studying the problem of increasing the level of international competitiveness of Russian universities and institutes suggest that, in order to achieve outstanding results, higher education institutions of Russia should focus on more than only academic breakthrough. Similarly important “accelerating” factor of higher education is “innovations in educating: both of methods and of content” (Salmi & Frumin, 2013, p. 45), which can provide concentration of talents, attract promising teachers as well as increase chances of the university to be included into financing programs. In this connection, we can talk about certain nonrandom researches on pedagogical environment of modern Russian universities which focus on various aspects of innovational development of educational activities, including the conditions of introducing innovative technologies at universities, and readiness of teachers to accept them (Avakyan & Vinogradova, 2019).

Meanwhile, the renewal of educational models implemented by Russian higher school is increasingly associated by scientists with variability and individualization of educational process which mean the active participation of a person in projecting his or her development trajectory. We should agree with certain Russian researchers who notice that “variability of education is among fundamental principles and a trend of developing the modern educational situation in Russia” (Meshkova, 2016, p.148). Today, the individualization of education becomes not only the guarantee of differentiation of an educational product, but one of priority mechanisms which help “to solve effectively the problems of forming a subjective position of a young person capable to be a creator of his or her own life” (Bayborodova, Belkina, Gruzdev, & Gushchina, 2018, p. 8). One of key trends of the higher education individualization is introduction of individual educational trajectories which focus on the variability of educational practices and suggest a creative approach to education in higher school.

## 2. Problem Statement

Studies on essence and principles of individual educational trajectories are more than urgent, this being confirmed by constant attention of scientists to these problems. In the opinion of a number of authors, the individual educational trajectory of a higher school student is “an individual route in the education, built

up and implemented by the subject of the educational process self-dependently in accordance with his or her educational demands and occupational plans, with the purpose of personal and professional self-determination, self-realization, self-development” (Meshkova, 2016, p. 149). Or “the program of educational activities of a university student which he or she develops together with teachers to successfully master the program of higher vocational education as a subject of educational and professional activities” (Zabirov & Vafina, 2017 p. 32). Summarizing the opinion of many specialists working in this direction, we can notice that the introduction of individual educational trajectories in universities’ education process suggests the necessity of the growth of a student’ personality. Besides, it is not unimportant that the focus of educational process shifts from teacher to student, as it is student who ultimately determines quality, trend, and efficiency of his or her individual trajectory. However, the majority of researches on these problems are of theoretical nature, and, as a rule, they are fragmented and do not concern the applied aspects of the problem associated with technologies of implementing individual trajectories in the setting of a modern university.

Based on the above mentioned, we suppose that researches of the process of implementing individual educational trajectories in the higher education system are more than relevant. The key problem of this work is to detect such technologies that would allow projecting and implementing in higher school the opportunity for a student to take advantage of an individual educational trajectory which, in the same time, would not contradict the requirements of modern educational standards.

### **3. Research Questions**

Organization form of an educational process suggesting the implementation of an individual educational trajectory requires a special attention, including that from the student’s position. As the researchers justly note, the individualization of educational process is possible, if “appropriate technologies demanded by all participants of the educational process and satisfying their needs are used” (Bayborodova et al., 2018, p.12).

In this connection, we suggest that it is especially important to consider basic conditions that would allow to competently model the process of embedding individual educational trajectories in the structure of a higher educational institution. In our opinion, these conditions include not only motivation and interest of a student in such a trajectory, but also providing him or her with necessary competencies which would allow making a conscious choice, and forming readiness to independently schedule an educational process, distributing time for studies, and his or her own resources in the best way. In other words, the individual educational trajectory must be related to forming such skills that would allow the student to make a choice, independently form the directions of competencies growth, this, in its turn, will discover new opportunities of self-development for a young person.

So, we consider the essence of the individual educational trajectory not only as the practice of selecting elective disciplines from the suggested list of the curriculum, but much wider. In particular, the growth of consciousness and motivation for selecting disciplines to be learned may be determined by different factors which refer to areas of personal development.

Consequently, there arises a problem of technologies which would allow increasing the effectiveness of implementing individual educational technologies in modern higher school (Bersan, Țiru, & Dumitru,

2019). Despite the actuality of the problem stated, it has not still received a comprehensive solution which would help to project and implement individual educational trajectories in each case. In other words, the pedagogical community permanently lacks applied knowledge about ways, forms, practices which would allow universities to make a practical adapted model of implementing the individual educational trajectory.

Without claiming the complete solution of the research problem, in this work we focus on certain technologies of implementing individual educational trajectories which have been passing a testing phase in Yaroslav-the-Wise Novgorod State University, beginning from 2019. The university implements a project-oriented educational model which suggests the introduction of individual educational trajectories for all students of the first year.

#### **4. Purpose of the Study**

The main purpose of the work is to analyze all technologies which allow implementing an effective individual educational trajectory in the structure of a modern university. Thereby, the research focuses on specific educational practices of modeling ways of individualization of the educational process in higher school.

#### **5. Research Methods**

Since the research problem suggests the solution of a complex task directed at creating a number of measurements to implement the individual educational trajectory in higher school, the authors use a complementary approach as a base of integrating different technologies into a single context. At the same time, a systemic research method confirms the necessity to consider technologies of implementation of the individual educational trajectory in higher school not as fragments in the whole range of educational practices, but as the system of a single model which concerns comprehensively various processes of the educational environment. Finally, to achieve the purpose, a comparison method is used as well as the method of summarizing and synthesizing scientific information, all of them contribute to the authors' methodology in general.

#### **6. Findings**

As it has been already mentioned, modern technologies implementing the individual educational trajectory must represent a complex of educational practices which can result in a synergetic effect when introduced. Similar complementary process of education individualization in higher school suggests a single educational environment combining the fundamental requirements to introduction of the individual educational trajectory mentioned above.

Let's consider individual educational trajectories implementation technologies used in the practice of Yaroslav-the-Wise Novgorod State University applying a project-oriented education model.

a) *Technologies of project activities.* Technologies of project activities are being introduced in the whole system of Russian education. In higher school, "application of a project method suggests such system of educating at which students acquire knowledge while planning and performing increasingly difficult practical tasks" (Starchikova, Shakurova, & Moshchenok, 2018, p. 53). Project activities become the object

of numerous studies considering their specifics on the whole (Belyakov, Voskresenskaya, & Ioffe, 2011), or their certain aspects (Kapranova, 2014). As scientists have shown, methods of project activities in the direction of vocational training contribute to the formation of professional thinking culture, since various situations in the future activities of the graduate are considered using the projects. Besides, certain project activities technologies are directed at forming team work skills that “will provide a novice specialist a great advantage over competitors in the labor market in the future” (Shulezhkova & Maksimova, 2019, p. 112). However, the introduction of project activities technologies in larger scale, e.g. in the whole university, can lead to different results which are not limited by the team work skills, or capabilities to solve conventional professional problems. In the conditions of rapid changing of production demands, similar skills may have a tardy effect (Gruzdev, Kuznetsova, Tarkhanova, & Kazakova, 2018; Loshkareva, Luksha, Ninenko, Smagin, & Sudakov, 2017). In our opinion, it is much more important to develop, through project activities technologies, the competencies that allow the graduate to adapt flexibly to changing professional conditions, think critically, and offer non-standard solutions for arising professional problems.

Thereby, we suppose that similar results can be obtained, creating inter-disciplinary teams combining students of different training directions as well as including the project activities in the education process for developing a through competency from the first year till the last one. To provide this, students have to master a practice-oriented module “Basics of Project Activities” as well as a project practicum implemented in every academic semester. As the experience of interaction between Novgorod State University and National Technological University “20.35” has shown, the project track should not be limited within the framework of narrowly specialized professional tasks, but it should be of a wider nature and give more possibilities to develop students’ creative abilities. In this case, the individual educational trajectory will teach a young person to play a definite role in the team (from a technical role to a leader’s (or strategist’s) role) as well as to consciously select those educational modules that would allow mastering the competencies necessary for work on the project. Competencies developed by such a way, as well as the experience of independent scheduling and using one’s own resources and possibilities will serve as a steady base for developing a readiness for similar events in one’s future career.

b) *Technologies for supporting educational process.* Educational process supporting becomes necessary as the result of project activities introduction, it is an integrated part of individual educational trajectory implementation. Educational process supporting manifests itself in appearance of new roles that have become the part of university environment only recently. First of all, there are such roles as “tutor”, “mentor”, and “supervisor” (coordinator for tutors). It should be noted that difficulties of the process of integration of various practices of tutorship and mentorship into the higher education system, as well as the problem of university readiness for the appearance of new roles supporting the educational process become now objects for various investigations (Ignatieva & Ryabkova, 2018; Zemskova, 2016). However, despite the number of accompanying difficulties, designated roles are still an obligatory part of technologies of implementing the individual educational trajectory, especially in the conditions of a team work on projects.

Technologies for supporting the educational process are the ways to model new roles, providing support, motivation, direction, and coordination for a student on an individual trajectory within the project-oriented model. Such technologies play an important role in implementing the individual educational trajectory, particularly, within the framework of a team work on the project, when it is required to play

coordinating, evaluating role, as well as to regularly monitor and correct the work of a team. On the other hand, thanks to supporting, a student can select more competently from all possible educational modules and disciplines, predict the lack of certain competencies necessary at the given stage of the educational process.

c) *Technologies of digital transformation of education.* To implement comprehensively two previous groups of technologies, and to provide modern conditions for introducing individual educational trajectories into higher school, digital transformation of educational activities as well as transition of a number of educational practices into digital formats are required.

On the one hand, we are talking about the use of educational online resources. The growing attention of scientists to elements of electronic education, online-platforms and education digitalization is largely explained by modern tendencies characteristic of modern information society and digital era. Despite various, sometimes polar, points of view on these technologies, specialists are observed to have an increased scientific interest in them, particularly, in mass open online courses (MOOC). In this connection, it should be noted that the market of educational services of MOOC does not stand still, it is being modernized, and grows regularly. Thus, “providers of MOOC - Coursera and EdX – acquired 15 million and 5 million students in 2013-2016, respectively” (Datsun, 2019, p. 162), as well as partners in the form of educational institutions. Online education technologies give students “a number of undeniable advantages: alternative ways to interact with educational resources, a variety of means to transmit data, innumerable options to communicate and make decisions” (Kelly, Coates, & Naylor, 2016, p.35). Moreover, today the quality requirement for educational platform to select the most valuable educational products looks most relevant.

However, concerning the problem of individualization of educational process, it should be noted that the use of online resources widens academic possibilities of a university and gives students a larger list of educational modules to be selected. This situation is especially relevant when individual educational trajectories causing the growth of educational demands of students are being introduced. Moreover, modern online resources allow students to select not only the platform, but also the level of course complexity, conditions of learning (e.g., commercial or free), the way of course presentation.

On the other hand, availability of digital services and platforms supporting and providing the full implementation of the individual educational trajectory is not less important for the complementary effect of its introduction. We are talking about introduction of various IT-solutions which allow to quickly and flexibly form a timetable, diagnose individual needs and working results of each student, fix the so-called “digital footprint” of a student, give the possibility to choose a teacher and time for online lessons, moderate online forum, exchange information operatively, and so on. Consequently, the technologies of digital transformation of educational process are especially relevant in the conditions of growing differentiation of educational activities, the differentiation is expected to increasingly manifest itself as a result of introducing individual educational trajectories.

## **7. Conclusion**

We conclude that, on the whole, the technologies of implementation of individual educational trajectories can be considered as a universal educational method in modern higher school. No doubt, introduction of individual educational trajectories is followed by a number of problems associated, for

example, with the supposed lack of motivation on the part of students towards the possibilities of individualization of educational process. However, the most relevant potential of university individual educational trajectories is that, on this base, universities can develop new educational models with these or those technologies which solve the problem of correspondence of a higher educational institution to the spirit of the times. Thus, similar educational practices in the form of a complex of considered technologies of implementing individual educational trajectories can become a determinant of universities transformation in the modern conditions, a way of renewal for every Russian university which will allow increasing competitiveness of the Russian system of higher education in general.

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