

**MSC 2020****International Scientific and Practical Conference «MAN. SOCIETY.  
COMMUNICATION»****INTERACTION BETWEEN TEACHERS AND STUDENTS WHILE  
DESIGNING INDIVIDUAL EDUCATIONAL ROUTES FOR  
STUDENTS**

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**Abstract**

The individual educational route is considered to be an effective means of personalizing and individualization of the educational process in relation to individual preferences and life priorities of students. Interaction of participants should be organized basing on the implementation of the following principles: motivational support for interaction; orientation in determining individual educational goals of students basing on the competencies being formed, requirements of professional standards, opportunities and personal priorities of students; algorithmic actions of subjects; continuity; variability in the content and operational component of interaction at the design stages; reflexivity. Technology of designing individual educational route involves implementation of an algorithm based on the interaction of stakeholders in the process including the following stages: the interaction in the process of diagnosis, analysis and assessment of level of formation the qualities important for the profession and the nature of students' professional aspirations; identification of goals, objectives and desired outcome of individual student activities in the framework of the development of the educational program as a whole or its individual component; joint selection of the key areas and control points of a route, developing a system of actions and interactions of actors involved in the process, at every stage of its implementation; the choice of means of monitoring and assessing intermediate and final results of the route to the control points and on completion.

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*Keywords:* Interaction, individual educational route, design, training of students



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## 1. Introduction

Training of specialists at the University is carried out within the framework of the main professional educational programs. The content of educational activities of students is focused on the formation of universal, general professional and professional competencies, the acquisition of which ensures the readiness of the graduate to solve professional problems in the chosen field of activity. As a rule, when developing the main professional educational program, University teachers take into account the requirements of the professional standard, which is a set of labour functions and labour actions, for the implementation of which a representative of this profession must be prepared.

Thus, all University students who have chosen to master a particular specialty must pass a certain theoretical and practical training, the content and forms of which are determined by the General educational program for them. This circumstance, in fact, determines the common requirements for the goals, results, content and forms of the educational process organized by teachers. However, it should be understood that students who master the same program differ from each other in their life and professional priorities, individual and personal characteristics. Therefore, it is advisable to implement the main professional educational program based on the principles of individualization and differentiation of educational activities of future specialists in order to create optimal conditions for each student.

The educational environment of the University should provide each student with an opportunity for self-determination and self-realization within the framework of mastering the competencies that make up the requirements for the results of the development of a unified training program. Questions of individualization of educational activities of University students are considered by many scientists and practitioners, the scientific and methodological literature offers a fairly wide range of tools, the use of which will allow the teacher to build the educational process, focusing on the individual and personal characteristics of students (Bayborodova, 2017; Bayborodova et al., 2018; Bayborodova et al., 2019; Kazakova, 2020; Kovalevich, 2020; Yunusova & Karunasb, 2016). Also, the authors mentioned above draw attention to the need to ensure the personal (subject) position of the student in the process of training at the University, as one of the main conditions for the effectiveness of their development of the main professional educational program (Dobrotina & Erokhina, 2016; Kharisova et al., 2018; O'Sullivan & Bruce, 2014; Schantz, 2012).

Individualization, differentiation, and subjectivity are important characteristics of the educational process focused on training a specialist who is ready to solve professional tasks productively (Tarkhanova, & Kharisova, 2018). Within the educational environment of the University, teachers have the opportunity to use various techniques and methods that allow to individualize and differentiate the educational process, however, sometimes their application is haphazard, spontaneous, which does not fully ensure the creation of optimal conditions for personal self-determination of each student. In this regard, it is advisable to implement a comprehensive approach to the organization of individual educational activities of the future specialist during the period of study at the University and use tools that allow you to integrate individual techniques and methods of individualization and differentiation. One of these integrated tools, in our opinion, is the design of individual educational routes for students.

## **2. Problem Statement**

It seems appropriate to consider the possibility of using the technology for designing individual educational routes of different levels in the framework of implementing the main professional educational programs for training specialists at the University. The individual educational route, which is a project of individual educational activity of the student, provides projection of general guidelines of the student's training process at the University, indicated in the educational program they are learning, taking into account their personal ideas about the path they must follow to get the chosen profession. The process of designing individual educational routes for students at the University raises many questions for teachers, in particular, the implementation of the relationship between the basic content of training and individual priorities of the future specialist, which, of course, should be oriented and integrated in the educational process, is problematic.

The solution of the above problem is particularly relevant, in our opinion, when preparing intending teachers. The success of pedagogical activity is largely due to the readiness of the specialist to self-expression and self-realization, the ability to solve professional tasks based on their individual and personal characteristics, focusing on the development of the personality and personality of their students. A graduate of a Pedagogical University who has mastered the main professional educational program in a way designed in accordance with his individual and personal priorities in mind, understands the technology of individualization of educational activities from the inside and is ready to organize the process of designing individual educational routes for his students.

## **3. Research Questions**

Having studied the experience of individualization of educational activities of students in pedagogical and non-pedagogical areas of training, we have not found systematic recommendations for the implementation of technology for designing individual educational routes for students in Higher Education. In addition, there are questions about the readiness of teachers and students to participate in this process, about the features of interaction between participants in educational activities, about techniques and methods that are effective in designing individual educational routes at different levels (educational programs, research work, a separate subject or practice).

The individual educational route of the student must be as personalized as possible, otherwise it will not allow to fully orient the priorities in the training of a specialist, determined by the Federal State Educational Standard of Higher Education, and the personal views of the student upon the prospects for their professional self-determination. Thus, in our opinion, there is a fundamental question, the answer to which will allow us to optimize the use of technology for designing individual educational routes, as an effective means of individualizing specialist training at the University: "What should be the process of interaction between a teacher and a student in the development of projects for their individual educational activities?".

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

The goal that we have defined in the course of our work to study the possibilities of individualization and differentiation of students educational activities and ensuring their subjective position in the process of mastering the main professional educational programs is directly related to the search for an answer to the above question. In our opinion, it is advisable to determine the characteristics of the interaction process, the presence of which will not only allow teachers to ensure the subject position of the student and individualize his educational activities, but also help the future specialist to better understand their life and professional priorities and understand how to implement them during their studies at the University.

The process of interaction between teacher and student within the design of individual educational route of a student is focused on the implementation of certain principles and involves the use of a variety of methods and techniques, which is an important condition of formation of general and professional competencies necessary for future specialists.

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

Realizing the goal of our research, we analysed scientific and methodological literature, studied the experience of teachers working in the sphere of individualization of educational activities of students, conducted a survey of participants in the educational process. The obtained information allowed us to identify the fundamental characteristics of interaction between a teacher and a student in the design of individual educational routes of different levels, as well as to specify individual components of the technology for creating projects of individual educational activities of students.

At the first stage of the study, we identified the attitude of teachers and students to the design of individual educational routes and their readiness to participate in this process. The respondents at this stage were students of several faculties of the Federal State Budgetary Educational Institution of Higher Education “Yaroslavl State Pedagogical University named after K. D. Ushinsky” and teachers of the Department of Pedagogical Technologies. The participants were selected in such a way as to identify the attitude to the design of individual educational routes of students who are developing various training profiles, and teachers, whose task, among others, is to form the readiness of future specialists to implement this technology in working with children and adolescents. In total, 10 teachers and 97 students (26 – Faculty of Social Management, 24 – Faculty of History, 22 – Faculty of Russian Philology and Culture, 25 – Faculty of Foreign Languages) took part in the study, studying in the areas of training 44.03.01 Pedagogical Education and 44.03.05 Pedagogical Education (with two training profiles), mastering the discipline Theory of Education and Technology of Pedagogical Activity.

At the second stage of the research, the basic characteristics of the process of organizing interaction between participants in designing individual educational routes of different levels were determined: principles, stages, conditions, a list of possible techniques and techniques for working together between a teacher and a student. At the third stage, individual tools and methods of interaction were tested when preparing projects for individual educational activities of students.

## 6. Findings

In the course of our research, we found that all teachers and the majority of students (94%) consider it appropriate to conduct targeted work at the University to design individual educational routes for students. This, according to the respondents, will not only improve the quality of mastering the main professional educational programs, but will also help future specialists to master the technologies of goal setting, planning and analyzing their activities and determine their professional priorities. Also, the respondents noted that the priority in organizing the interaction of design participants should be the partner position of the teacher (98% of respondents) and cooperation in the design process (99% of respondents).

As the main problems in the implementation of this process, teachers (65%) note the lack of systematic recommendations for organizing the design of individual educational routes of different levels and the difficulty in creating a situation of free choice by students of individual elements of the educational program (priority competencies, academic disciplines to study) (87%). Students who participated in the survey focus on the difficulties associated with a low level of awareness of teachers about individual and personal preferences of students (76% of respondents) and a small number of forms of individual interaction with teachers in the framework of learning disciplines (84%). In addition to these, the results of the survey revealed other problems and difficulties that indicate the need to prepare recommendations for teachers to organize interaction with students in the process of designing their individual educational routes.

The solution of the problems identified as a result of the survey is also important in the practice of higher education from the point of view that an individual educational route can be considered as one of the system-forming components of the process of professional formation and development of a future specialist at a University. In our opinion, the purpose of interaction between a teacher and a student in the design of an individual educational route is to provide pedagogical support for the individual activities of the student in developing the project of their individual educational activities, taking into account the feature of the program being mastered and personal ideas about future professional activities.

It is advisable to build the interaction of participants as a collaboration, with the teacher maintaining a partner position at all stages of the implementation of this process (Fayzieva, 2018; Gablinske, 2014; Rojkov et al., 2018; Sagitova, 2014). As a result of the analysis of scientific and methodological literature, the study of the experience of teachers and the results of a survey of students, we have identified the following principles of interaction:

- motivational support of interaction of participants, which guarantees their subjective position and mutual interest in success;
- orientation in determining individual educational goals of students on the competencies which are being formed, requirements of professional standards, opportunities and personal priorities of students, which will allow integrating external and internal attitudes to the planned results of educational activities;
- algorithmicity of actions of subjects, which ensures the structuring of the interaction process and building it in the logic and sequence of the technology for designing an individual educational route;

- succession, providing for the design of joint actions at each subsequent stage, taking into account the results of the previous stage;
- continuity, which determines the preservation of basic attitudes of interaction and positions of participants at all stages of the process of mastering the main professional educational program;
- variability in the content and operational component of interaction at the design stages, necessary for the implementation of individual preferences and capabilities of participants, taking into account their professional priorities and features of designing individual educational routes at different levels (within the educational program as a whole, research activities, a separate discipline or practice);
- reflexivity, both in terms of analyzing the results of cooperation by subjects in the design process, and in terms of identifying the most appropriate and effective forms, techniques and methods of interaction.

The principles outlined above, in our opinion, are the most important for effective interaction between the teacher and the student in the process of designing an individual educational route. It is particularly important, in our opinion, to fully implement the principle of algorithmicity, since it determines the general logic of the stages of development of projects of individual educational activities of students and interaction with them as part of the implementation. From our point of view, the sequence of actions should not contradict the general logic of the design process and include the following steps:

1. Interaction of participants in the process of diagnostics, analysis and assessment of the level of formation of students' qualities that are important for the chosen profession, as well as the nature of their professional claims.

2. Determining the goals, objectives and desired results of individual student activities in the framework of the development of the educational program as a whole or its separate component. At this stage, the task of the teacher is to help the student determine the key guidelines for professional training.

3. Joint allocation of basic directions and control points of the route, development of a system of actions and interactions of subjects, participants in the process, at each stage of its implementation.

4. Selection of tools for tracking and evaluating the intermediate and final results of the route within the control points and at the end.

The implementation of the above stages will allow you to organize a purposeful interaction between the teacher and the student, the results of which will appear in the last project of individual educational activities. It should be noted that during the period of study at the University, the future specialist can form different routes: general (until the development of the educational program), private, specifying a separate stage of professional training within a certain time period (research activities, study of the discipline, practical training).

Thus, we have outlined the general provisions that characterize the organization of the interaction process of participants in the design of individual educational routes at the University, then we will consider the features of its implementation in the development of projects for individual routes of research work of a student and the study of an academic discipline.

Research activity is the most important component of the educational process at the University, the organization of which, of course, should be carried out taking into account the needs and professional interests of the student. In the educational space of the University, there are various opportunities for realizing the research potential of the future teacher, among which there are both compulsory (mandatory) and optional areas of interaction between the student and the teacher.

Among the required forms of student's activity it is possible to allocate the writing of term papers and final qualifying works. To implement the principles of individualization of educational activities of students, it is important to ensure that they can freely choose the topics of course research and final qualifying work (WRC), independently develop a research plan and choose the basis for the implementation of experimental work. Interaction with the supervisor in this case should be aimed at understanding the need to implement the logic of scientific research—from the theoretical understanding of the chosen problem and pilot research (provided at the first stages of research activities during the writing of term papers) to the organization of experimental work that has practical significance for the educational system or social sphere (in the course of work on the WRC). The task of the supervising teacher in this case is to ensure the continuity of all stages of work and maximize the use of the potential of various types of practices of students to implement the goals of scientific research: the study of experience, conducting empirical research and experimental work.

Thus, work on course and final qualification papers is an integral part of the process of building an individual educational route for a bachelor's student. We are convinced that the subject-subject nature of interaction and ensuring a partner position of participants in the educational process during the support of this process ensures the active participation of students in other areas of research activities that are not provided for in the curriculum: participation in scientific conferences (both student and faculty), preparation of publications (individually or jointly with the supervisor), participation in competitions and Olympiads at various levels, involvement in the activities of scientific laboratories.

The analysis of the existing experience allows us to identify a number of problems and risks that make it difficult to solve the tasks outlined above:

- lack of readiness of students to solve scientific problems independently, which is due to the relatively small amount of research component in school education;
- lack of continuity in the subject and content of scientific research at different stages of education at the University;
- insufficient awareness of students about opportunities to participate in competitions, conferences, Olympiads at various levels;
- relatively low practical significance of the research conducted by the student, due to the lack of an order from partners and employers to include future teachers in the study of current regional problems.

We believe that the joint design of individual educational routes allows us to minimize the indicated difficulties, since this process is based on real requests and professional guidelines of the student himself, which provides an appropriate motivational basis for research activities. Preliminary determination of the

stages of scientific research and possible resources creates a system of reference points and provides the student with a variety of choice of forms and content of activities depending on his individual requests and professional preferences, and the presence of control points along the route ensures the reflexive nature of the interaction participants' activities.

At the level of studying a discipline, the process of designing individual educational routes has its own specific features, related both to the studied subject area – pedagogy, and to the nature of building interaction between the teacher and students. The teacher demonstrates a certain pattern at each stage of design, including design participants in this process, thus ensuring continuity in the transfer of experience in designing individual educational routes. In the future, when carrying out their professional activities, intending teachers will broadcast the existing practical experience of designing in working with students. Thus, not only the content of the curriculum of the discipline is mastered, but also the experience of designing individual educational activities is improved.

The study of the discipline begins with the diagnosis of the level of professional competence development. Psychological and pedagogical diagnostics includes not only survey methods, but also specially developed trainings and practical cases. At the same time, it is important to note that the process of diagnostics involves directly the students themselves, who solve a number of specific tasks related to the selection of diagnostic materials, their adaptation to existing conditions, as well as direct implementation. At this stage, the teacher takes the position of a consultant and coordinator: explains the significance of the diagnostic function in the process of professional development; helps to select diagnostic materials; advises individual students on conducting tests, compiling cases; introduces the features of calculating test results, their processing, and interpretation of the identified data. Based on the results of diagnostics, each student in cooperation with the teacher analyzes their level of professional competence development, focusing on those professional competencies that have an insufficient level of development. Most often, these competencies include communication (the ability to speak publicly, the ability to persuade, influence the listener, speak competently, and so on.) and organizational (the ability to organize the interaction of participants, the ability to motivate participants to work together, the ability to organize various forms of work, and so on.).

At the next stage of designing individual educational activities in the framework of the development of the program of the discipline, the goals, objectives and desired results of individual educational activities of the student are determined. The importance of this stage cannot be overestimated. In the process of goal-setting activity, the student's personal motives are correlated with educational tasks and transformed into meaning-forming cognitive activity. With this approach to the organization of design, a high educational effect is achieved, which ensures the development of the student's subjective position. In addition, conscious goal setting is the basis for successful planning of the discipline, the development of educational motivation and cognitive activity of students. Interaction at this stage is aimed at creating conditions for personal and professional self-determination of the student; joint search for the role and place of the design participant in the course of studying the discipline; assistance to the student in determining ways to develop professional competencies in the process of mastering the content of the curriculum of the discipline and performing educational tasks. Effective tools at this stage are: professional development portfolio, professional growth map, “goal tree” method, mapping, etc.

To ensure the subject position of the student, the teacher develops educational materials that allow the student to design individual progress in the course: choose the direction and control points of the route, the level of complexity of tasks, types of independent work and ways to interact in the classroom. The content of the discipline is presented clearly in the form of a thematic plan. When designing individual educational activities within the framework of studying a discipline, each student together with the teacher determines the course topics that are of the greatest interest to him and require deep study, selects those tasks that will help him in the development of professional competencies, makes an individual curriculum for the subject, which specifies the purpose and objectives of studying the discipline, the direction, themes, types of tasks and deadlines for submitting completed tasks. It should be noted that each topic includes an invariant (basic) and variable components. The basic component assumes the mandatory completion of the task, and the variable component, accordingly, provides the student with a choice.

This approach also changes the process of organizing training sessions at the University, which does not provide for pre-training of the teacher according to a clearly defined plan. The plan of the training session and the methods of interaction are determined directly at the beginning of the seminar by the teacher together with the students, depending on their preliminary training. Interaction between the teacher and students during the training session is characterized by a variety of interactive methods and techniques used, a combination of individual and group forms of work in the classroom, providing students with the opportunity to choose how to work in the classroom, delegating them part of the teaching functions for the seminar, developing their subjectivity through involvement in the organization of the educational process. The teacher takes a tutor's position, providing pedagogical support for individual educational activities of students. Of course, with this approach, the process of teaching students does not develop spontaneously, the teacher manages the organization and can pre-predict the course of the lesson. However, the effectiveness of this model of organizing the educational process and the success of interaction between teachers and students depends, to a greater extent, directly on the activity of students themselves.

When evaluating students' educational achievements, a rating system is used, in which each student scores a certain number of points. The rating allows you to optimize the learning process, stimulate students' activity, and increase their motivation.

## **7. Conclusion**

The design of individual educational routes during the student's education at the University will ensure the continuity and integrity of the future specialist's training, his / her subjective position in the process of professional development and the formation of competencies necessary for effective solution of tasks in the chosen field of activity. The task of the teacher is to organize the design process in such a way that each student participates in it meaningfully, understanding the significance of the actions taken and the importance of the efforts made to develop projects for their educational activities.

Properly implemented interaction of design participants determines the success of this process and the productivity of its results for the professional and personal development of future specialists during the development of the main professional educational programs at the University.

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