The problem of personality developing technologies in the training of future specialists of the architectural and construction sphere

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Abstract. The article raises the problem of personality developing technologies in the training of future specialists in the fields of architecture and construction, reveals the essence of the development of the student’s professional and personal potential in the process of studying at a university. The implementation of this complex pedagogical problem is possible in the process of applying innovative educational technologies based on internally motivated activities. The basic methodological approaches in the paradigm of personality-oriented professional education are revealed. As the authors note, in relation to the personality-oriented paradigm of professional education, the following approaches are considered personal, individual, cultural, axiological, activity-based, competence-based and contextual. The article analyzes the educational systems used today, identifies their advantages and disadvantages. The features of the teacher’s activities when using personality-developing technologies in the process of professional training of future architectural and construction specialists are determined. Also, the conditions for providing personal-centered learning in vocational education are defined in the article.

Keywords: personality-developing technologies, personality-developing potential, personal-centered learning, vocational education, architectural and construction field.

1 Introduction

The relevance of this article is due to the following reasons. Firstly, the new requirements of high-tech production contributed to the further development of specialist qualifications through the transition to competence and professional skills. Along with skills, they include work experience and attitude to work. Attitude to work, in turn, is associated with other characteristics of the employee’s personality. This includes motivation, interest and a desire to work, love of one’s job and others that determine the culture of work, its success, and therefore self-realization, social security of a competitive employee, demanded by a certain type of professional work, in particular, the architectural and construction sector. In terms of professional skills and competencies, professional and educational standards are formulated. The labor market requires a competent specialist who can think creatively, see problems and find ways and means of solving them [1]. In the market conditions, the professional training of specialists in the field of architecture and construction in a university should be focused on meeting the requirements of both the employer and the future specialist. In these conditions, a professional school needs to quickly respond to the requests and requirements of the market of architectural and construction labor so that graduates will be in demand.

Secondly, success in social, economic, cultural, communicative, scientific activities, successful social and professional careers are made by the most active, self-confident, self-reliant workers. And the competitiveness of a specialist often depends on his ability to manage his emotions, restrain himself, and be in constant readiness for any changes in production. At the very least, production employees often evaluate a worker based on these qualities. The university adopted a slightly different assessment of the student, namely, the level of knowledge, skills that he demonstrated in the
process of educational activity. Personal qualities are not among the priorities in assessing the preparedness of a graduate for professional work [2].

Thirdly, in the conditions of an economic crisis and insecurity in the future, the importance of an employee’s preparedness for unregulated behavior in production situations in the architectural and construction sphere of activity, is growing. In situations where unforeseen violations occur in the operating conditions of the production site, in the technological regulations, disruptions in the supply of raw materials, poor-quality products that do not meet the technical specifications and do not satisfy the customer and others. Adequate actions are required from the employee, which often go beyond the limits prescribed by the regulation and are often personal. Fourth, the technologies and methods of vocational training at the university work quite effectively to systematize the content of educational material (a systematic approach), to normative educational activities (an active approach), and to stimulate students' thinking (problematic approach). The traditional application of well-known pedagogical approaches to teaching methods and technologies is clearly not enough for a future specialist to become a personality, have a personality potential, a developed personality [3]. The traditional system of training specialists, that emerged during the years of the planned economy and from which the educational link fell out in market economy conditions, is “lame” and, in our opinion, does not correspond to the economic, social and technological transformations in the country, to the new requirements of the employer of the architectural and construction sector.

It is necessary to rethink the traditional approaches to training, since the personality development potential of these approaches is used, in our opinion, insufficiently. This, in turn, can lead to the renewal of the goals, objectives and content of training, to the use of new forms, methods and means of professional training of specialists in the field of architecture and construction, corresponding to the task of forming a personality that is in demand in modern production. And not only production. Well-trained workers and specialists with professional personal qualities, focusing on self-determination, on successful self-realization in various areas of social and professional activity are required to solve the socio-economic problems facing modern society, in order to get out of economic stagnation, to develop society and the country's economy generally [4].

As we have already noted, the main task of a renewing professional school is not only the acquisition of solid basic knowledge and skills by students, but also the teaching of their mechanism for organizing their own activities for their extraction, methods of self-regulation in the process of its implementation, which will contribute to the successful socialization of the student’s personality. The implementation of this complex pedagogical task is possible in the process of applying high educational technologies, built based on internally motivated activities [5]. The main differences between externally motivated activity from internally motivated are the following. In the case of external motivation, external stimulation is widely used (rewards, awards, approvals, points - all that a student receives from his colleagues and teachers around him). Intrinsic motivation is associated with the processes occurring in the student himself. It affects the internal mechanisms of moral and will power regulation of personality based on the needs and interests of the student. With this method of implementing of the educational process, pleasant emotions from achieving a result, a sense of satisfaction from work, a sense of one's own competence and the associated sense of self-esteem are ignited and supported. It follows that educational technology, based on internally motivated activities, should be personality-oriented. A personality-oriented educational technology is based on one or another priority methodological approach that ensures the achievement of learning goals, which include the development of professional qualities and professional competence of students at a university [6].

We shall remind, that in accordance with the competency-based approach, when teaching students a professional discipline, such educational technologies are needed, which would contribute to the effective formation of both the professional knowledge and skills necessary for the construction and architecture sectors and professionally significant personal qualities; the student’s educational activities should be based on the future content and implementation of professional architectural and construction activities.
Let’s review the personality-developing potential of the approaches used today to prepare a modern specialist. According to psychologists, personal potential is an integrity, which includes [7]:
- professionally significant knowledge, skills defining professional competence (qualification potential);
- performance (psychophysiological potential);
- intellectual, cognitive abilities (educational potential);
- creative abilities (creativity);
- the ability to cooperate, collective organization and interaction (communication potential);
- value-motivational sphere (worldview, moral potential).

Thus, personal potential is an integral combination of qualifying, psychophysiological, educational, creative, communicative, philosophical, moral potentials. According to psychologists, “potential” is understood as “the degree of power in some respect, the totality of the means necessary for something”, “resources”; potential - “possible”; “potency is an opportunity, which exists in a latent form and can manifest itself under certain conditions” [8]. In accordance with this definition, personality development potential is understood as educational, developmental opportunities, resources of vocational education in order to develop a personality. The goal of student’s development in the learning process has always been set in vocational education as one of the components of the triune goal - training, education and development. Since the goal usually acts as a backbone factor, we can say that the development of a student is a backbone component of any educational system.

When talking about the goals of vocational training, they usually mean a hierarchical multi-level structure, which includes a state goal - usually formulated in government documents; professional - qualification goal - it specifies the requirements for a specialist on the part of production and society - is presented in the Federal State Educational Standard; didactic goal - its requirements are formulated in the educational program; methodological goal - acts as a concretization of the didactic goal. The lower-level goals of this hierarchy work for the higher ones. Therefore, the state goal is of strategic importance. Vocational education is aimed at the acquisition by students in the process of mastering basic professional educational programs of knowledge, skills, and the formation of competence of a certain level and volume, allowing them to carry out professional activities in a certain field and (or) perform work in a particular profession or specialty [9].

The content of vocational education is designed in accordance with its goals and the requirements arising from them, formulated in the Federal State Educational Standard. In the current FSE standards, in particular, in the training of specialists in the architectural and construction field, the content of education is aimed at the formation of competencies, both integrated results, including both knowledge and skills, and professional personality characteristics, i.e. both on preparation for work, and on personality development.

The means of teaching (in the broad sense of the word) corresponding to such content should provide for the whole variety of forms, methods, and proper means, both individual and individually-group and collective, aimed both at developing various aspects of the student’s personality and at the formation of his knowledge, skills, skills needed in architecture and construction.

The main feature of educational systems used today is their mutual assistance aimed at achieving the goals of education, training and personal development. This is so, because educational institutions must prepare for life, and life consists of not only academic knowledge. When studying at a university, a student, as a person and a subject of educational activity, develops thinking, emotional sphere, memory and other mental processes. The student is drawn into the educational activity, participates in it along with other students. As a result, resistance to stress, independence, autonomy is developed. Feeling of self-confidence, relations with teachers, with other students are developing.

This makes the student self-actualize, improve [10]. The student’s personality develops in the process of socialization. The assimilation of social experience by a student is deeply subjective. From the same situations, different personalities make different social experiences. In the process of assimilation of social experience, social maturity is formed. Its components are the components of
personality maturity: 1) responsibility; 2) tolerance; 3) self-development; 4) a positive attitude towards the world; 5) constructive thinking. The last aspect also includes the motivation of learning as the most important element of motivation for self-development. Education of a personality, the formation of its social maturity is impossible without the acquaintance of teachers with each individual, with each student, his abilities, character traits, his aspirations and expectations. Development of a personality is closely related to the professional development of the student [11].

Personality and profession are closely related and influence each other. A student may like a profession, for example, of an architect or a civil engineer, and then the person has a positive attitude towards the chosen profession and professional development in an architectural university goes successfully. But it may happen that the chosen profession is “too tough” for a student. There is not enough patience towards hard work, perseverance, motives, learning abilities, adding to that are insurmountable psychological obstacles, family problems. The profession, on the other hand, forms the student’s characteristic features in the student’s personality. Each profession has its own characteristics. Summarizing, we can say that each profession has its own set of ethical rules that must be followed. Responsible attitude and love for one’s business, efficiency, critical attitude towards oneself, constant self-control and others. These qualities, when become personal qualities, positively affect the personality. Motivation is growing, academic success pleases the student, forms optimism in him [12].

The professional development of a student is carried out in the context of age development. Student age is the time of the development of a young man. In this period of life, relative economic independence is formed, many students live away from home, often create their own families. At the student age, socialization, character formation, development of intelligence is carried out, creative possibilities are clearly manifested, and it is necessary that the student “do not miss” this development period [13].

Professional development is influenced by conditions. These conditions are dynamic. When studying at a university, a student often changes ideas about a mastered profession, about the motives for obtaining it, and about ways of self-realization in it. These ideas become more real and vital. Under their influence, a professional mentality, ethical, moral values and attitudes towards the profession are formed. Relations with teachers, with production workers - representatives of the profession also affect the formation of professional personal qualities [14].

The development of the personal potential of a specialist in the field of architecture and construction is impossible without self-realization in professional or educational activities. At the same time, the essence of the personality, its intellectual capabilities, moral standards and rules, the ability to get out of difficult life and professional situations in the architectural and construction environment, and creative potential are revealed [15].

A large role in modern professional activity in the architectural and construction orientation is played by creativity, which contributes to the renewal of production, making it more efficient. The training of a creative specialist involves the development at the university of the creative abilities of students that need to successfully work in the field of architecture and construction. In turn, this makes it necessary to include in the training content the material of a general cultural purpose, the purpose of which is to expand the specialist’s working culture range so that he can change existing production, and not just adapt to it [16]. Opening, they get further development and are formed at a higher level. This is the way to develop personal potential. To go this route, you need to have a desire to be a person, to weigh your strengths and capabilities, the desire to affirm yourself and your way of life. But one desire is not enough, appropriate conditions are necessary. To reveal oneself in educational or professional activity, it is necessary that the content of this activity is personally significant for a future specialist in the field of architecture and construction, help him solve his problems and contribute to success. So that the activity was natural, it corresponded to the thoughts and feelings of the student, contributed to the manifestation of self, personal growth. A certain psychological and pedagogical environment is created in which the student's personal potential develops.
From the psychological side, such an environment removes psychological barriers, unfolds the student, creates an atmosphere of goodwill, understanding around him, provides him with psychological help and safety, the opportunity to manifest and improve himself.

Thus, the professional development of the student is carried out in the educational and professional environment. This environment is filled with objective activity, social relations, is characterized by activity, psychological climate and, of course, affects the personality. Changing of the social significance of the profession, the prospects for its development opening up for the student, the requirements of this perspective and the discrepancy between these requirements and the student’s existing knowledge and skills contribute to the emergence of urgent needs and interests, renewal of goals, the formation of world outlooks, beliefs and encourage active work to acquire the missing knowledge and skills [17].

An important place in the formation of professional qualities is occupied by a professional orientation. The process of its formation, in turn, is carried out in stages. At the pre-university stage, the student decides an important question for himself and his parents: who should I be? In high school, this issue is increasingly relevant and aggravated. Some decision must be made, and the high school student still uncertain, more for the external environment than for himself, makes this decision [18]. He is emotionally tuned to the chosen profession, shows some interest in it, which is episodic, situational in nature, and determines the subject of his future work. Tries to acquire work habits. But while he is not firm in his intentions, he feels that the decision he made is not entirely independent, but rather the result of external pressure, since everyone expected this from him. Therefore, he has not yet shown any initiative. But yesterday’s student now enters the university. During the study at the university, the student feels more confident in the correctness of the choice of profession, his inclinations and interests become more stable, independence appears, responsibility is formed. His interests are more focused on the practical side of the academic material, and his goals are on the implementation of educational and professional activities [19]. Educational activities related to the understanding of a large amount of information related to the profession, to its requirements for a specialist, reinforce the professional, in this case, architectural and construction orientation.

The prospects for mastering the profession of an architect or civil engineer that open to a student as a result of this are accompanied by the emergence of new motives, new value orientations that expand and enrich his ideas about future work in the architectural and construction field.

In his last year, a graduate of a construction university has mainly developed a firm attitude toward engaging in professional activities, a steady interest and inclination towards it appeared. The future specialist in the field of architecture and construction has a passion for his profession, and interest is shown not only in practice-oriented, but also in purely theoretical educational material. The student is looking for ways to express himself, strives for professional excellence, makes plans for self-affirmation through professional work. He has a professional ideal based on a firm conviction of social and personal significance, importance of his work. An important role in this is played by prestige, material wealth from professional labor.

Largely due to the professional orientation, the personal meaning is formed, which has the content of his profession for the specialist [20].

The personality of a specialist and his professional work must correspond to each other. The content of the profession is objective, and its personal meaning is subjective and, ideally, they should coincide. But in reality this does not happen. Moreover, there are contradictions between the mastered professional activity and its personal meaning for the student. The reasons may be a mismatch of the student’s dominant motive for choosing a profession with the essence of the content of professional activity, interest in professional activity may not be predominant in the structure of the student’s interests and others [21].

The presence of such a contradiction creates the prerequisites for the subsequent development of the professional orientation in the educational process of the university, strengthening motivation, deepening interests in the direction of the content of professional activity and, thereby, becoming the professional personal qualities of a specialist [22].
Thus, for a future specialist in the architectural and construction sphere, to develop professional personal qualities, he must go through a complex psychological multi-level structure of motives, values, personal meanings and abilities.

Besides, while teaching the profession of an architect or civil engineer, the university instills a student with new examples of professional culture and builds the educational process on the basis of the cultural model of professional activity. Culture involves educational and professional activities of students, which are based on their essential strengths and abilities. Culture is one of the sources of skilled labor, the formation of the emotional-volitional sphere and the moral-value attitude of a student towards the world around him, to people, to life [23]. And from what is the level of professional culture in a university, one can probably judge the effectiveness of the interaction of an educational institution with production. Since beliefs, norms of behavior, attitudes, labor traditions, i.e. a system of professional values common to all carriers of the profession, in which personal professional qualities and abilities are integrated [24]. Mastering a professional culture in a university satisfies the needs of those who teach, and those who study, increase their professional qualifications, psychologically improve the educational environment, arouse students' desire to follow professional behavior, a future specialist in the field of architecture and construction.

2 Materials and methods

Different theories and concepts result in the different approaches to vocational education, ensuring its implementation and specification. In relation to the personality-oriented paradigm of vocational education, such approaches, in our opinion, are personal, individual, cultural, axiological, active, competency-based and contextual.

We define the personality developing potential of the above approaches that underlie the implementation of various directions for the development of personality. Each of the approaches is concretized in the goals, content, means (in the broad sense) of education and is implemented in the educational process of the university.

Of course, each of the approaches included in the personal-oriented paradigm has its own characteristics. Thus, the main task of the personal approach – the development of the personality potential of a specialist – implies the realization of oneself in professional activities, and in relation to the student – the formation in educational activities of the qualities of the future specialist's personality that contribute to becoming a subject of industrial activity.

It was mentioned above about the creation of a certain psychological and pedagogical environment at the University, where the student's personal potential develops. It is quite difficult to achieve what was said in a real educational process. It is necessary that the student himself participated in determining the goals, content, means of his training, there should be friendly, trusting, open relations with teachers.

The personal approach to the professional training of students of an architectural and construction university is strengthened and deepened through an individual approach. How a person will manifest himself in an activity depends largely on his personality. Individuality is traditionally presented to us as a difference: by gender, by temperament, by character, by ability, by interests, etc. In the educational process, these differences are considered: the content of training is differentiated depending on cognitive abilities, the pace, forms, teaching methods, etc. are selected.

Differences can be unique, for example, when individuality manifests itself in creativity, which is important for a specialist in architecture and construction. A creative product is an expression of a worldview, of what is dear to him, the development of creativity in students is the task of the university, which is solved through the organization of competitions, exhibitions, etc.

The development of personal potential, the enrichment of individuality is impossible without cultural and axiological approaches.

The culturological approach ensures the formation of a common, and then professional culture of the future specialist. In the pedagogy of vocational education, it is expressed through the principle of cultural identity. As already noted, professional activities and construction are characterized by a
culture of work, aesthetic, moral, environmental culture. All the best, life-affirming, viable is reflected in them. The professional culture that nourishes the personality of the student through the umbilical cord of professional education is one of the main indicators of the competitiveness and competence of a specialist in the architectural and construction field of activity.

The world of work is, above all, a value-filled world. Material values are expressed in means, objects, results of labor. Spiritual - in relation to these material values, in relation to people, to life. A positive attitude towards the world is a source of optimism and the task of the educational institution through an axiological approach is to support students' ideas about the value of life, the value of work - one of the main means of forming a personality.

The formation of the personality of a future specialist in work, in activity (educational, professional) - is the essence of the activity approach. At the university, the student is drawn into active educational activity, through which professional activity is mastered, thinking, memory, attention and other mental processes develop, the personal potential and professional qualities necessary in the profession of architect and constructor develop.

Among the abovementioned approaches, the activity approach is the most rational, consistent and scientifically based, which has roots of a prognostic analysis of the content of professional activity, which the future specialist of the architectural and construction industry will have to master, identifying the skills necessary for the successful performance of labor functions, and knowledge that ensures informed mastery of these skills. The approaches considered by us have one common property: they work on someone more and on someone less to develop personal potential, to develop the personality of a future specialist. A practical means of forming personal potential and individuality is the competency-based approach. Competence in this approach is understood as an integral combination of values and personality traits, knowledge, abilities, skills and abilities. In other words, competence is a unity in the formation of personality and activity, an alloy of professional qualities of an individual and traditional knowledge, skills. In the plane of implementation of the competency-based approach in the educational process, a contextual approach can be applied. The emphasis in the contextual approach is on the transformation of the educational activities of a student at a university into a professional activity, for example, a specialist in architecture and construction, in a production environment. At the same time, along with knowledge, skills, students form professional qualities, experience of social production relations, professional values.

3 Results
The teacher of vocational education needs to be guided in the approaches discussed above, which underlie the personality-oriented paradigm of professional education. Such an orientation will help him determine the direction of his pedagogical activity and build a system of his actions.

The technology of the teacher of architectural and construction university, in the direction of developing personal potential and developing the student’s personality, includes the solution of the following 4 groups of problems.

1. Structural and prognostic tasks. The teacher's activity is aimed at setting learning goals that contribute to the development of personality and professional qualities. Learning objectives are set based on an analysis of the results of monitoring the requirements of society and production to the professional qualities of a specialist. In accordance with the objectives, an action program is developed, stages are outlined, conditions for the development of the personality of a future specialist in the construction and architecture industry are determined. The content of the educational process is being projected, its capabilities for the development of the student’s personal potential are predicted.

As a result, a model is created for the development of personal potential and the development of student individuality.

2. Organizational and activity tasks. When solving these problems, the constructed model for the development of personal potential and the development of student individuality is actualized. In this case, the predicted possible consequences of its implementation in specific socio-pedagogical
conditions are taken into account. In the process of solving psychological and social problem situations, the development and self-development of the personality of a student of an architectural and construction university is carried out.

3. Assessment and information tasks. Information on the effectiveness of the used pedagogical tools, on the degree of their influence, is sent to the teacher in the form of test results and he must give them his assessment, performing the control function. The teacher’s activities in solving the assessment and information tasks are aimed at ensuring the regular receipt of information, at its analysis, assessment and further accounting when developing the personal potential of a future specialist in the architectural and construction field. In the real conditions of the pedagogical process, it can be difficult to determine when a student will have this or that professional quality that will change in his personality. Since reliable, objective information is often missing. This is explained by the practical lack of development of criteria by which it is possible to assess the development of individuality, personal qualities, the effectiveness of educational work in a university.

4. Corrective and regulatory tasks. They arise to eliminate the contradiction between the desire of the educational process to streamline in terms of the development of the student’s personal development potential, on the one hand, and the influence of random factors aimed at the destruction of this ordering, on the other. In addition, changes often occur in the educational process, which also requires constant regulation of its elements, aimed at developing the personal development potential of students of an architectural and construction university.

The selected groups of tasks are typical for a teacher in educational and developmental activities in an architectural and construction university. In a specific pedagogical situation, each teacher can offer his creative solution to them based on his pedagogical experience.

4 Discussions
In our opinion, it is possible to provide personal-oriented training in higher education if the following conditions are met:
- the state educational standard of the chosen specialty should be available to both the applicant and the student;
- each student should be provided with an adapted version of the work program in the subjects studied. The curriculum should be subjectively significant for the learner and his assimilation, the organization of educational activities should consider the current level of his personal development;
- the educational material should be organized in such a way that the student can choose educational tasks, assignments;
- in every possible way to encourage and stimulate students to independently choose the most acceptable ways for them to process educational material, to form their own style of educational activity;
- pay special attention to the formation of general scientific skills, considering the characteristics and individual abilities of the student;
- not only evaluate the end result of educational activities, but also form self-control in the learning process, activate reflection of thinking.

Thus, in the technology of the teacher’s activity, the emphasis shifts from the formation of knowledge, skills to the development of personal development potential, in which the formation of knowledge, skills are only one of the components. Naturally, this leads to a change in the level of professional and pedagogical culture of teachers, to an increase in the general educational and professional levels of student training, and to a new character of social and pedagogical conditions.

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