

Social engineering as a technology of pedagogization in the conditions of transformation processes in Russia

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Abstract — The article analyzes the relevance of using social engineering in the pedagogical activity of an educational organization to form the necessary personal characteristics of students as future "builders" of the country's public relations. The main characteristics of the method of social engineering are presented; features of the use of this method in the activities of the university are revealed; the application of this technology on the basis of empirical verification of its results on a sample of university students is justified. It was revealed that after using this technology in the framework of the school year, changes in the motivational, cognitive and behavioral component of student activity occur.

The materials of the article are of practical value for those involved in the training of specialists in the system of higher and secondary education.

Keywords — social engineering, pedagogical activities of the university, the realization of the potential of students.

I. INTRODUCTION

The relevance of the study is due to the need to study and implement in pedagogical activity the latest methods, mechanisms for the formation of personal characteristics of a person that meets the requirements of modern Russian society. Traditional methods of pedagogy are often aimed at the formation of the knowledge component of the competencies of a graduate of any educational organization, and the personality of the student develops as part of socially educational work. However, the formation of professional competencies, the high academic performance of the student is not the only indicator of the quality of education, the effectiveness of the teaching staff of the educational institution. Modern society needs independent, proactive, educated professionals with a high

level of morality, patriotism, citizenship, legal awareness, and a common culture as a whole.

In this regard, this article is aimed at revealing the potential of social engineering, implemented within the framework of optimal pedagogical conditions for the development of productive independence and activity of students in the educational environment.

II. METHODOLOGY AND METHODS

Social engineering can serve as the conceptual basis for the pedagogization of the environment. The concept of social engineering explains the mechanism of social self-improvement, combining the objective and subjective aspects of progressive development, regulated and unregulated processes of self-organization of society.

The key hypothesis of social engineering is that society sets itself the urgent tasks, finds the mechanisms for their achievement and forms personalities that implement such mechanisms. Compare the Spartan and Athenian models of personality. For their formation, special educational and socially educational environments were created, and state (political) institutions and economic / social activities ensured the maximum self-realization of modeled personalities. We can also recall the Christian personality of the Middle Ages, for which a special church life was formed, or a new type of personality of the Protestant burgher, opposed to the Christian of the previous historical era, focused on enrichment. Soviet man, as a personality model, possessed communist morality and was oriented toward building communism.

Modern Russia is at the initial stage of the implementation of social engineering transformations - there is a public discussion about - what should Russia be like? Which development path is it necessary to choose? What future is good for it? In parallel, the formation of an image of the type of personality, which should carry out the transformation of Russia, takes place. The difficulty of pedagogization is the pluralism of social environments, which do not provide the formation of a certain type of personality, but implement various options for personality modeling.

Social engineering does not imply the formation of one type of personality. This is impossible. But it creates the conditions for modeling a person who will meet the basic criteria of a public inquiry. For example, the current situation requires the citizens of the Russian Federation the following properties and qualities: adaptation to society, socialization in it, social responsibility, efficiency, competitiveness, ability to work intensively, professionalism, moral standards, high intellect, creativity, general and legal culture, loyalty to power.

The principles of social engineering:

- **relevance.** This principle means that at each historical stage in the development of society, certain problems become relevant that require an answer from the person who, in order to solve these problems, must meet the specified criteria. In imperial Russia, the state encouraged the upbringing of a loyal subject, a Christian, realized in accordance with the professional content of his estate. In the Soviet Union, a participant in large-scale construction projects, a defender warrior, was in demand. Now the entrepreneurial abilities are actual and the state benchmark for an innovative development scenario requires creativity and initiative;
- **demand.** At each historical stage, concrete decisions, transformations, and personalities capable of their implementation become in demand. In the history of Russia, difficult living conditions (natural, social, political) favored the development of a person's ability to be patient and overcome difficulties, to mobilize his physical and moral strength for survival. These qualities became fundamental in the era of colonization, with resistance to invaders, opposition to political regimes, restoration of a destroyed economy;
- **value.** The system of values changes in the historical perspective, while a basic set of values that ensures belonging to human society maintains. Priority values allow us to solve the current tasks of society: ensuring stability in the Russian Federation, improving the demographic situation in the country, maintaining family values, improving the quality of population and labor resources; public policy promotes the value of a healthy lifestyle;
- **modeling.** Society is trying to improve itself by modeling its future system. The economic, social, political systems, cultural environment, life, communications are modeled. Relations in society are ritualized, preserved, become traditional for some period. So, the ritual of pioneer events formed the

personality of the collectivist. New information technologies are replacing team relationships with communication in a virtual community;

- **inclusion.** The modern social model begins to be embodied Only when various subjects of social development participate in the transformation of reality.
- **transformation** is carried out by the most active part of society in their interests by all means available to it;
- **complexity.** Social engineering cannot be carried out only in a separate area, just as it cannot be carried out by a separate means;
- **systematic.** Social engineering transforms both the system as a whole and its individual parts;
- **satisfaction.** A transformed social system must satisfy a large part of society, otherwise it cannot be considered progressive and positive.

The society offers a model that is in demand at a certain historical stage, the state creates the conditions for this model to be implemented in practice. Social modeling of the personality, building of special pedagogical environments and the formation of the state system for the personality model has been carried out for millennia, taking into account variability, civilizational and cultural specifics.

A. Content component of social engineering:

Purpose: creating a personality in the framework of the model of public and state order. Today in the Russian Federation, a social order is a person - a citizen, patriot, highly qualified specialist, family man.

Objectives: 1) specify the demanded model of personality, designate its structural elements (features, qualities, properties, benchmarks); 2) to structure the educational and socially educational process with the participation of all subjects of pedagogization in such a way as to implement the personality model in psycho-pedagogical, socio-political and sociocultural practice; 3) to ensure the conditions of socialization of the indicated personality model.

B. Benchmarks:

In contrast to the liberal system, which proclaims the primacy of the interests and needs of the person, in Russia traditionally there has been a predominance of state interests over personal ones. But modern Russia, being a social state, seeks to combine state, public and personal interests. In the liberal system, this is due to the development of the institution of social partnership. Such an institution is still underdeveloped in the Russian Federation, but the prospects for the state, in our opinion, are connected with it.

C. The process component of social engineering:

Process flow:

Social engineering consistently includes a number of mandatory technological steps:

The 1st step is the awareness of social need for a new type of personality that ensures the progress of society;

The 2nd step is the creation of an idea-image of a person, filled with the required qualities and values;

The 3rd step is the formation of a psycho-pedagogical environment that is not limited to the education system, which models the demanded type of personality in society;

The fourth step is the transformation of the socio-political system based on a new type of personality, providing it with maximum opportunities for self-realization.

D. Organization:

Social engineering involves the inclusion of a person in socially significant activities, providing not only a positive result for a given person, but also a positive effect for the state and society: the implementation of social projects, volunteering, labor, entrepreneurship, creativity, research, etc.

E. Forms:

Since immersion in socially significant activity is supposed, all forms that implement the activity approach are used. Overcoming passivity, selfishness, pessimism, distrust of social institutions in terms of interaction with these institutions occurs in the case of a certain motivation system, including the desire for a balance of the individual, society and the state interests.

Methods

Social engineering is carried out through modeling:

- modeling of the future society, which is perceived by the subsequent progressive stage of development of the existing society;
- modeling the type of person who must meet the parameters of the future society;
- modeling of pedagogical, educational, social environment, which forms a demanded personality;
- modeling of a new state system that embodies the expectations of society and individuals of a new type.

Designing a sociocultural environment and sociocultural mechanisms for including a person in socially significant and socially approved activities. Designing is a method available for any level of training. It provides for the possibility of participation in the project and its management, provides the development of teamwork skills. The provision of maximum freedom of self-realization is accompanied by decision-making, as well as responsibility for them. This is how a socially responsible person is formed.

F. Facilities:

It is more efficient to form a socially responsible, independent personality using self-made technology. It can be applied not only in the educational process, but also in any areas of pedagogization. The psycho-pedagogical and sociocultural environment provides individuals with increasingly wide powers in self-realization: choosing a field of activity, setting goals independently, finding means and methods of achieving them, applying them and evaluating results. Self-made technology creates an environment that denies reliance on performing discipline, dependence on other people's opinions and passive presence. The personality is

forced to solve problems, because it is necessary to get a productive result, impossible without significant effort. The higher requirements that are imposed on a person let it feel confidence.

G. Control:

The teacher accompanies the trajectory of personal development but eliminates pressure and coercion. Control is accompanied by increasing self-control and it implements the function of correction, support, stimulation. Ideally, self-control should supplant external control. The intellectual, moral, cultural, professional level of a person will be able to provide adequate self-esteem and self-regulation of behavior and activity in accordance with the norms and principles laid down by society and the state.

Organization of cognitive activity.

A person oriented to the benefit of society is interested in the practical significance of any knowledge. Cognition turns from memorizing information into the application of this information in order to achieve the result that will satisfy the needs of the student and his environment.

H. Evaluative component:

At the level of socio-economic, sociocultural and political strategy of the state, a qualitative development of human potential is achieved.

At the regional level, human capital is becoming one of the most effective factors in regional development.

At the level of the microenvironment of the individual, a productive transformation of the environment occurs under the influence of the personality itself.

At the personal level, satisfaction, a positive attitude, empathy for people and environments, a sense of happiness as a productive result are achieved.

Criteria for evaluating the effectiveness:

- intellectual level;
- moral principles;
- culture;
- legal awareness;
- professionalism;
- citizenship;
- patriotism;
- intensity, effectiveness and efficiency of activities;
- positive perception of reality;
- satisfaction with oneself and one's surroundings.

All these criteria are measurable, simulated, provided with infrastructural conditions.

Since social engineering includes all the steps of building a public-state system with a predominant personality type, the technology of pedagogy can be considered as a sociocultural modeling of personality. However, the steps of the technology

will be the same as those indicated. By implementing this technology, teachers answer the following questions:

What kind of person will be most useful to society and the state in the future?

What personal qualities, values, and motives should a person have in order to be in demand in this society?

What tools, means, methods will allow forming a demanded personality?

What public and state institutions should participate in the formation of a new type of personality?

How to transform the environment so that a new type of personality fully realizes itself and is most effective for society and the state?

Pedagogization puts forward the following priorities in the transformation of personality:

- rejection of infantilism;
- overcoming social dependency;
- conviction in the dependence of the future of personality on its abilities, efforts, professional choice and self-realization;
- motivation for intensive work, realizing the interest of the individual;
- acceptance of social responsibility as a necessary condition for activity;
- willingness to compromise, achieve a balance of interests of the participants in the interaction;
- resist destructive manifestations in society;
- possession of inner freedom, which denies conformism, cringing and humiliation;
- change of life priorities, social roles, areas of activity always stimulates the person to self-development, to achieve new results, while maintaining a high motivation for life;
- interest, motivation, effectiveness guarantee the individual satisfaction with its activities.

Pedagogization should become a tool to improve the quality of life of the population of Russia, i.e. prepare young people to achieve a higher quality of life compared to the existing level. This is associated with the stimulation of innovative ideas, basic science, applied research, pedagogical, educational, social and managerial technologies. Standard way of thinking should be only an element of the intellectual potential of a person, fully revealed in a creative non-standard solution to the problems of transforming reality. This orientation of pedagogization requires the combination of high quality education with work and creativity. The exclusion of one of the elements of the triad of sociocultural modeling of personality destroys the integrity of the entire technology, therefore, reduces its effectiveness.

The modern education system, especially secondary, on the contrary, destroys the unity of the listed modeling elements. The test system standardizes thinking aimed at working out certain forms of tasks and repeatability of answers. Labor activity is almost completely excluded from the educational process. Creative activity is often imposed and not corresponds to the age and individual capabilities of students. Often, educational tasks of a creative or research nature are carried out by students' parents or are of the nature of paid services, which deprives learning of any meaning. A student becomes hostage to a distorted model of learning when he does not believe in his own strengths and abilities, but trusts training courses and tutors more. Such a model of training does not form him as a free, independent, developed personality, but, on the contrary, makes him dependent on external conditions, which, allegedly, are mandatory success factors.

Therefore, pedagogization should be accompanied by overcoming the main contradictions of both the educational system and the socio-cultural, socio-economic and socio-political environments:

- since labor is the basis of the life of any citizen, the denial of labor in the educational institution and outside it prevents the socialization of youth;
- the role of the teacher is to accompany the personal growth of the student;
- a system of stimulating personal development, achievements, significant results, professionalism, productivity and quality of work;
- encouraging competition in which the ability and ability to work of a person are important, rather than his material capabilities or protection;
- respect for the individual.

Pedagogization will be carried out efficiently only in conditions of partnership and consistency of various public institutions in the implementation of pedagogical tasks:

when social institutions will take on additional educational and upbringing functions in relation to participants in communication. Suppose, even in public transport, it will be possible to get acquainted with the historical and cultural attractions of the city, and young people will be encouraged to observe basic rules of behavior in public transport.

- when in any public place the rule of law is ensured and the implementation of the requirements for a culture of behavior is guaranteed. This means that profanity, vulgar, defiant behavior, littering, including environmental stubs must disappear.
- when the basis of communication of any institution and organization with visitors is mutual respect. We mean that the law and social institutions must protect a person who is insulted and humiliated, whether it is a child or adult.
- when corporate ethics does not allow to hush up the violation of the rights and freedoms of citizens, their legitimate interests in order to protect the image of the organization. Often there are scandals in connection

with the violation of children's rights in organizations, which lasted for many years, and even decades. It is necessary to create a social protection system accessible to anyone who is offended and unprotected.

- when the infrastructure of society will provide the basic needs of modern man.
- when human potential will be in real demand in the process of regional development.

It should be noted that this technology is not a novelty of the XXI century. So, having appeared at the beginning of the last century, it is developing to this day. In the works of N.A. Vitke [2], A.K. Gasteva [3], K. Popper [5], the issues of social design, scientific organization of labor, improvement of production and management processes are described. The surge in industrialization in various countries has allowed this direction to show its potential as part of an interdisciplinary approach. Currently, these issues are developing by G.A. Antonyuk [1], V. Ivanov [4], Yu.M. Reznik [7,10], V.M. Rozina [11, 13], I. Simdyanov [8], V.V. Shcherbina [12] and others. We share the opinion of Yu.M. Reznik, who considers social engineering as an area of scientific and practical activity related to the application of the engineering approach to the creation and change of social systems [6].

Considering the above provisions, we found it appropriate to highlight the results of using the technology of social engineering in pedagogical activity:

- 1) The motivational component includes the need to participate in various events using social engineering technology and getting positive emotions from participating in these events.
- 2) The cognitive component involves knowledge of the methods of self-development, self-improvement, based on the requirements of modern society, knowledge of the main goals and objectives of their activities, criteria for the effectiveness of its results.
- 3) The behavioral component implies changes in the behavior of students both in the framework of the educational and socially educational activities of the university.

Based on the criteria for the effectiveness of the application (results) of social engineering, we have identified the main areas of work:

- 1) The educational activity of students involves increasing their intellectual level, legal awareness, professionalism, intensity, effectiveness and efficiency;
- 2) Socially educational activities contribute to the development of morality, culture, citizenship, patriotism, a positive perception of reality, satisfaction with oneself and the environment.

As part of the educational activity, students attended lectures, practical exercises, field trips, took part in the activities of the "Legal advice office" of the university, they participated in workshops on the topics "Legal Culture", "Legal Literacy", and met with successful people, who are professionals in their field (practicing lawyers, lawyers, notaries of the city). It should be noted that at the beginning of

the academic year we organized a workshop for teachers of the faculty on the topic: "Social Engineering in the pedagogical process of the university. The proposal to introduce this technology caused a positive response from the teaching staff.

In the course of participation in the implementation of the socially educational activities of the faculty and the university as a whole, we focused on volunteer, patriotic events. 15 group classes with elements of personal growth training were held for students of the experimental group.

Students who showed the greatest results were encouraged through letters of appreciation, material incentives (increased scholarship for successes in scientific, educational, cultural and public activities), publication of articles about students' achievements in social networks.

It should be noted that the division of directions is rather arbitrary, since educational activities always have a socially educational effect, while socially educational activities are often educational, allowing students to develop professional competencies as well as personal qualities. In addition, the components we proposed (motivational, cognitive, behavioral) cannot develop only within the framework of one direction, all the activities of the university are aimed at developing the personal and professional potential of students.

III. RESULTS

The technology we presented required an experimental verification of its results. To do this, we conducted a study on a sample of students from the Federal State-Financed Educational Institution of Higher Education "Shadrinsk State Pedagogical University" consisting of 25 third-year students. Diagnostic examination took place in two stages - ascertaining and control.

To confirm the effectiveness of our work, we used a set of methods: expert assessment method, diagnostic methods, analysis of academic performance of students, student questioning, observation. The peculiarity of the methods we have proposed is that they allow us to study the effectiveness of the implementation of social engineering technology.

3) Expert assessment of teachers, evaluating the cognitive, behavioral and motivational components of students' personality changes.

4) Success rates of vocational training (academic performance for the academic year, including the results of practical training).

5) The technique of "Personal Self-Analysis" allows us to assess the level of manifestation of students' socially valuable personality traits, such as the activity of moral position, collectivism, citizenship, hard work.

6) The questionnaire "Citizenship and Patriotism" studies the level of formation of ideas about students' rights and obligations as a citizen of the Russian Federation, the ability to use the legislation of the country, and the willingness to develop society on humanistic principles.

7) The questionnaire "The level of formation of the moral culture of students" suggests students evaluate the formation of their own moral culture [9].

8) Test "Life satisfaction index" (adaptation by N. V. Panina) is evaluated on five scales: interest in life, determination and consistency in achieving life goals, consistency between goals set and real goals achieved, positive assessment of one's own qualities and actions, overall satisfaction [14].

IV. DISCUSSION

At a ascertaining stage of the study, we identified the following features of students:

Motivational component. A high level of development of the characteristics of this component was detected only in 16% of students. They showed a highly developed need to realize their potential in events of various kinds, a desire to learn new technologies, a willingness to improve themselves in a professional and personal way; a positive emotional attitude was noted. A low level was detected in 20% of students. Such students showed either unwillingness to participate in the experiment, or doubts about the advisability of changing pedagogical technology. They showed no initiative either in educational activities or in socially educational events; emotional mood is either negative or neutral. They are characterized by a lack of desire to work independently on the solution of educational and professional problems, do not seek to acquire new knowledge, are not ready for intellectual stress. Most students (64%) have an average level of development of the motivational component. They do not have negative emotions when implementing the technology of social engineering, however, they prefer not to show initiative in their work, they are more likely to act according to a given pattern. They are included in the work with external motivation on the part of the teacher or classmates.

Cognitive component. 12% of students revealed a high level of formation of this component. They have ideas about the needs of society, about their own capabilities, as well as techniques to achieve more effective results in various activities. 60% of students have an average level of cognitive component formation. In general, they are guided by the peculiarities of their own potential, but they hardly distinguish the possibilities for further development, both in personal and professional terms. They allocate the general features of a citizen of society, but find it difficult to transfer their own civic qualities. 28% of students have low indicators: they can not conduct self-analysis of their personality, assess the degree of formation of moral, legal, civic culture. Teachers note a low level of the knowledge component of the professional competencies of students in this category.

Behavioral component. High rates of this component were found only in 12% of students. This is manifested in active participation in educational and socially educational activities, the ability to organize and conduct various events at a good level, the willingness to learn new things, to participate in the implementation of various technologies of the pedagogical process. The average level is observed in 64% of respondents. They have a readiness for changes, participation in innovation,

but lack experience and practical skills to realize their potential in various kinds of activities. The low level of development of this component is in 24% of students; they do not participate in events, are limited to attending classes; a passive position is noted. A student with an unformed subjective position cannot be an active, purposeful and responsible citizen of the country.

The results of primary diagnostics show the need to use the technology of social engineering in order to develop the potential of students. Due to the students' internal readiness for changes, we considered it necessary to introduce this technology into the pedagogical process to create the conditions in which each student will be able to realize their own abilities.

The results of the control are presented in table 1.

TABLE 1 EVALUATION OF THE EFFECTIVENESS OF THE RESULTS (%)

Activitycomponents	Primary diagnostics	Re-diagnostics
<i>Motivational component</i>		
highlevel	16	28
average level	64	60
low level	20	12
<i>Cognitive component</i>		
highlevel	12	44
average level	60	40
low level	28	16
<i>Behavioral component</i>		
highlevel	12	20
average level	64	64
low level	24	16

The control showed an increase in indicators for all components of student activity. Indicators of the motivational component increased by 12%, which indicates positive changes in the students' attitude to educational and professional activities, their professional future, and the desire for self-realization for the benefit of society.

The most significant changes have occurred in the cognitive component. A high level was found in 40% of students in this group. After the implementation of social engineering technology, an increase in the level of students' knowledge about their own capabilities, methods for realizing the potential, based on the requirements of modern Russian society, was recorded.

It should be noted that positive changes have occurred in the behavioral component. This suggests that students have already begun implementing the goals of professional development, which is impossible without personality changes. The work carried out allowed students to realize the model of a professional needed by society, which in turn reveals the prospects for changes in each person. The data of the peer review of teachers testifies to the changes that students have had during the academic year: increased activity, independence, responsibility, level of general culture, academic performance.

V. RESULTS (CONCLUSIONS)

Thus, summing up the results of our research, it can be argued that the technology of social engineering is an effective means of forming professional and personal characteristics of

students, based on the requirements of modern Russian society. The pedagogical activity of the university allows us to realize the full potential of this technology with a systematic work.

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