Attractive Spheres of Students' Self-realization as Practices for Supporting Their Psychological Well-being in University Education

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Abstract: The study is aimed at finding the varieties of appealing spheres for realization of students' potential in higher school. The authors substantiate and develop the concept of attractors for students' self-realization, which designate the appealing spheres and forms of manifestation of students' personal efforts and capacities in higher education. The methods of conceptual-applied reconstruction and psychological surveys are used to determine the attractive space for students' self-development. The study identifies a group of potentially attractive spheres (learning-cognitive, research, sports-wellness, volunteer, artistic-creative, innovative-entrepreneurial, information-media, social-civic, sphere of cross-cultural communication). The study presents the results of diagnosing the subjective significance of these spheres for students of different specialties and different levels of self-realization in education. The conclusion is made about the tendency of influence of students' involvement in attractive spheres on the success of their self-realization in educational environment. The prospects of applying and operating the category of attractors as socio-cultural predictors of successful self-realization and psychological well-being of students in the process of University training are shown.

Keywords: students, attractors of self-realization, psychological well-being, spheres of University activity.

Introduction

Personality development is inextricably bound up with the process of education. It is in the field of training and education that the foundations of mental system and inner world of the future generations are laid. Higher school plays an essential role in this formation. It introduces a young person to the professional world, shows the heights of scientific cognition, experience of culture of thinking and understanding the reality and forms comprehension of the world and his predestination in it (Barnett, 2005; Ilyinsky, 2002). In the ontogenetic dimension people get higher education at the young age, in which the most important structures of the personality and personal self-consciousness are formed, as well as value orientations, beliefs, life principles, ideals, etc. (Robins et al., 2001; Brock, 2010; Donnellan, Conger and Burzette, 2007). The stability and healthy development of the personality depend largely on the stable and effective work of higher education institutions (Murray, 2011; Barnett, 2010). It is not a coincidence that the current crisis of higher education has exacerbated the crisis in the youth community, which is losing its value stability, cultural identity, ability to creative activity, etc. (Brenner, 2019; Zhuravlev, Volovikova and Galkina, 2014).

At the present stage higher school, as an institution of socialization, needs to be strengthened

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and improved in terms of opportunities for the full development of the student's personality, introduction of humanitarian standards and methods for measuring the quality of higher education. Today successful University education is supposed to create variety of opportunities for self-realization of students, as well as foster the versatile development of the students as subjects of various forms of activity (Selezneva, 2015).

Healthy development of personality in higher school is increasingly associated with the process, which is aimed at expanding the opportunities for full-fledged development, formation of holistic self-consciousness and constructive behavior (Selezneva, 2015; Li, 2017). In this regard there is a need to build such educational environment that suggests a wide range of opportunities of self-development for the young generation, provides an opportunity for versatile and productive self-realization in the field of educational, scientific, social, cultural, sports and other types of activities (Shutenko, 2013).

It is well-known that the psychological health of the personality is directly associated with self-realization especially in young age (Pufal-Struzik, 1999). In fact, the ability to self-realization is an attribute of psychological well-being, and the possibility of successful self-realization is considered as a source and an indispensable condition for healthy development of personality (Bradburn, 1969). Many recognized studies associate mental health and psychological well-being with the person's self-realization (Deci and Ryan, 2008; Miquelon and Vallerand, 2006; Ryff, 2014). Meanwhile, there is a need to expand and deepen scientific knowledge about self-realization of youth, which is caused by the specific needs of wellness practices, both in medical and humanitarian-psychological terms (Burris, Brechting, and Salsman, 2009; Kudinov et al., 2020).

The phenomenon and process of self-realization have been actively studied by scientists of various branches of humanitarian science for the last half-century. In addition to the works of humanistic psychology (Allport, 1950; Rogers, 1961; Maslow, 1962), the issue of self-realization is developed at three methodological levels – philosophical, sociological and psychological (Leontiev, 1997). We consider the socio-cultural nature and phenomenology of self-realization, which is mediated and caused by the process of socialization that means it occurs and unfolds in response to the formative influence of society and culture (Shutenko, 2013). According to the cultural-historical methodology and activity approach, self-realization acts as a process of disclosure and realization of the essential forces of the personality who is mastering the concrete historical practices of social relations (Vygotsky, 1997; Rubinstein, 2011). Being a fusion of knowledge, skills, abilities, etc., and driven by interests, aspirations, expectations and values, these essential forces are perfected and shaped in the process of individual's assigning the experience of culture and the productive forces of society (Marx, 1968). Thus, self-realization is successful if an individual is involved in a sufficient number of activities and social relations (Batishchev, 1969, p. 100-101).

In this regard the sphere of education is supposed to be built as a space and practice of transfer of culture experience, as well as represent a universal environment for the development of students' essential forces (Ilyinsky, 2002).

Materials and Methods

Theoretical approaches. The present study is based on the methodology of sociocultural determination of personality formation. The fundamental tenets of this methodology substantiate the decisive role of cultural influences and the social situation of development on the becoming of psychological structures of the personality (Vygotsky, 1997).

We developed a research design using the cultural-historical approach, as well as activity-based and synergistic approaches. The first approach considers personality growth as a process of mastering cultural values; according to two other approaches, the person is formed in the process of performing an activity as a self-organizing polymotivated subject (Leontiev, 1997; Rubinstein, 2011; Haken, 1982).

The theoretical background of the study was the provision that self-realization of students is a consequence and result of their fruitful socialization at the university through their development as an authentic actors of a multidirectional activity (intellectual, labor, scientific, educational, sports, artistic, cultural, leisure, etc.) (Gewirth, 1998; Selezneva, 2015). At the psychological level the process of self-realization is triggered by the primary motivation of self-actualization (Maslow, 1962; Rogers, 1961). Being the dominant driving force at the student age, this striving for self-actualization inspires a young person to develop his inner resources and abilities for mastering useful experience in order to recognize and realize himself in educational process, upcoming profession, social practice, culture, etc (Leontiev, 2002).

Research problem, hypothesis and participants. The problem of students' self-realization,

which is being developed in this study, is interpreted as a process and result of the active deployment of their internal abilities and personal potential through the widespread use of higher school educational and socializing opportunities. Considering the attractors of students' self-realization, we sought to answer the question: what can a modern University offer as a real activity basis for the development of the essential forces, abilities and personal potential of students in the learning process? Which of the existing educational forms and methods of socialization of students are interesting and valuable for them in terms of self-realization?

The **hypothesis** of our study was built on the supposition that the presence of a variety of attractive spheres of student life in the University system contributes to a more complete self-realization and psychological well-being. In general, a direct correlation was assumed between the level of students' self-realization at the University and the degree of their involvement and personal immersion in the scope of various attractors of educational environment.

This hypothesis was tested by means of a special survey conducted among the students pursuing humanities and technical courses. 214 secondary and senior students were involved in the study, 106 of them were the students from Belgorod National Research University and Murmansk Arctic State University (psychological and pedagogical specialties), and 108 students were from Belgorod State Technological University.

The logic of building a study. To solve the above problem and research tasks, a study consisting of three stages was carried out.

At the *first stage* a preliminary piloting projective survey took place to identify attractive areas of students' self-realization, on the basis of which a list of the main attractors of self-realization was formulated.

At the *second stage* a diagnostic survey was conducted to assess the current impact of the selected attractors on students' activity during University education process.

At the *third stage* a comparative analysis of the degree of involvement of students, who are at different levels of self-realization in training, in the attractors' orbit was carried out.

Methods. In theoretical dimension the research work used the method of conceptual-applied reconstruction of the attractive space for self-realization of students that was aimed at highlighting and subsequent summarizing of the inspirational potentials of the higher school educational environment.

The diagnostic tools of the study included a number of methods developed by the authors.

1. Method for determining attractive spheres of intra-University activity was used at the first stage of the study. This projective method is a variety of Sentence-Completion Techniques and it is aimed at identifying preferred kinds of students' activity at the University, which, in students' opinion, contribute more to the realization of their personal potential. The test tasks of the method belong to the open type of tasks for completion and provide for unprogrammed answers of the tested people regarding the essence of the task without any proposed ready-made answers. In the process of its resolution and removal of uncertainty such a weakly structured test model contributes to the actualization of personally significant manifestations of students who produce not only an answer to the task, but also the thematic and stylistic-sense construction of this answer. Students perform the task at their own discretion, giving definitions and their attitude to various aspects of University life. They are required to continue assertions based on the proposed initial elements:

"While undergoing training at our University, I would like to study ...".

"Over the years of study at our University, most of all I would like to prove myself in the field ..."

"Of all the present spheres of activity of our University, I am most attracted by such spheres as ...".

This method allows us to obtain unique, non-standard, detailed information about subjectively significant ways and forms of implementing the students' abilities and aspirations in the University environment.

The content-analysis method was used to process the responses, formalize them and quantify the received data. The key recorded category of the analysis was the frequency of reflection of individual topics of University life (study, science, sports, volunteering, etc.). The content-analysis allowed recording certain units of the content of students' answers: linguistic figures of speech, expressive verbalized elements (words, judgments, connotations, etc.), grammatical and stylistic constructions of speech ("thematic" statements, verbs, logical "clusters", etc.) indicating significant spheres of University life. As a result, quantification units were identified – the frequency of the appearance of thematic units in the collected volume of information, and a primary set of 13 "topics" was obtained, these topics reflect the attractive aspects of students' activity at the University.

To clarify the conceptual-sense unambiguity of the selected topics the method of thesaurus analysis was applied (Lukov Val. and Lukov Vl., 2004). This method allows us to identify the conceptual basis,

explanatory schemes and students' understanding of those topics and aspects of their University activity that they consider significant for themselves. In the focus groups discussions of the genre-sense identity of the received topics were organized. The students were asked to articulate the topics they identified, to reveal their understanding of these topics and to explain what meaning they put into this or that aspect of their activity at the University (Shutenko et al., 2016). As a result of the thesaurus analysis of the selected topics, 9 autonomous sense units were obtained, which reflected certain attractive spheres for the realization of students' personal potential in University education. Approbation and standardization of the method was carried out on a sample of 247 people within the framework of research works under the grant of RFBR "Self-realization of student youth as an indicator and a factor of psychological health in conditions of socio-cultural challenges for Russian society" No 18-013-01151, 2018-2020.

2. Method for assessing the subjective significance of spheres of intra-University activity. This method is a questionnaire with some elements of the evaluation list, it allows you to get information about how important each of the 9 identified spheres of possible realization of personal potential at the University is for students (learning activity, sports-wellness activity, research work, volunteer activity etc.). The questionnaire includes a number of statements with multiple choice, each of which is to be evaluated according to a 10-point scale.

Example:

The questions for survey and answer options	Assessment in points (from 1 to 10)
In process of studying at our University I am attracted first of all by	
1. ... *group classes*	
2. ... *research work*	
3. ... *sports-wellness activities*	
4. ... *participation in volunteer work*	
5. ... *participation in artistic-creative and amateur activities*	
6. ... *work in innovative enterprises of the University*	
7. ... *information-media sphere of activity*	
8. ... *social work and participation in University self-government*	
9. ... *international activities of the University*	

Evaluating the proposed answers, students thereby evaluate each of the possible spheres for self-realization at the University. The results processing consists in calculating the average values of points for each of the 9 spheres of intra-University activity. As a result, a rating of these spheres is compiled in terms of their subjective significance for the self-realization of students at the University. The methodology was tested and standardized on a sample of 235 people as a part of the research work within the above-mentioned project (grant of RFBR No 18-013-01151, 2018-2020).

3. Method for studying self-realization in higher school education. This authors' method was developed as a questionnaire, which is aimed at identifying the students' subjective attitude to University education in terms of the possibilities of revealing and realizing their internal potential, as well as developing themselves as successful and competent subjects (Shutenko A. and Shutenko E., 2008). The questionnaire consists of 49 statements concerning various aspects of students' life while studying at the University (satisfaction with learning, value of learning, relationships with friends, teachers, participation in University life, etc.). Each statement is constructed in the "language of self-consciousness", i.e. it is formulated in the first person and the respondent's task is to agree or disagree with this statement. At the same time, the method provides for the possibility of expressing the degree of consent flexibly, for which the respondent is asked to enter his answer in a five-point scale from full consent (5 points) to absolute disagreement (1 point).

Example (a fragment of the form of the incentive material of the method):

grades

	Questions	1	2	3	4	5
1.	Studying at the University is the most important and meaningful activity in my life					
2.	I am considered and consider myself a successful student					
3.	I am interested in studying at our University					
4.	I am happy to attend classes and learn most of the subjects					
5.	Studying at our University gives me the opportunity to realize my inner potential					
6.	I would like to be like many of the professors who teach me					
7.	Studying at our University helps me to understand myself better, allows me to comprehend my strengths and weaknesses, change myself for the better					
8.	I have a dream, and studying at our University brings me closer to its cherished embodiment					
9.	The process of learning and preparing for classes takes up most of my personal time					
10.	In fact, few people know that I study at our University with great difficulties					
11.	Since the moment I entered the University I have been in a one-on-one situation with my educational problems, when no one helps me at the University					
12.	I am convinced that studying at our University will bring me more benefits than any other occupation…					

As it can be seen, the survey method puts the student in the position of an expert who assesses the University situation for its compliance with his personal aspirations, expectations, values and meanings. All the items of the questionnaire are grouped around three scales reflecting the main factors of students' self-realization in University education, which we studied and verified in a number of special works on this topic (Shutenko, 2013; Shutenko, 2015).

The first scale (17 points) reflects the factor of *personal involvement in the learning process*, which means high motivation for learning, interest in learning, a desire to identify with teachers, a complete dedication to learning as the main and subjectively significant activity in the current period of life.

Examples of direct items-assertions:

- I have absolutely no idea what I would do if I did not study at the University;

- the process of studying at our University captures me completely, serves as a source of inspiration and spiritual uplift.

Examples of reverse items:

- if it were possible to start over, then I would most likely choose another University, specialty or get a job;

- every day I think more and more often that if I did not have to attend our University tomorrow, I would breathe a sigh of relief.

The second scale (17 points) represents the factor of implementation of personal abilities, which means the possibility of full and versatile disclosure of strengths and the deployment of the internal potential of the individual.

Examples of direct items-assertions:

- the learning process contributes to the disclosure of my abilities and talents;

- while studying at our University, I take advantage of the opportunity provided to me here to express myself as a person from various sides.

Examples of reverse items:
- my efforts in the learning process often remain unnoticed;
- during my studies I was never able to fully express myself.

The third scale (15 points) reflects the factor of social inclusion and acceptance in the University community, which is expressed in the desire to be in a group and take part in the University life, indicates the presence of mutual assistance and mutual support in the student environment, strength of friendly ties, atmosphere of trust, respect and mutual assistance.

Examples of direct items-assertions:
- I know that I can always turn to my fellow students for help;
- I like spending my free time in the company of my University friends.

Examples of reverse items:
- for the whole period of training I have always felt lonely;
- none of my fellow students is really interesting to me.

*The results are processed according to these three s*cales considering the key by calculating arithmetic averages in the range from 1 to 5 points. The higher this value is, i.e., the higher the scale indicator, the higher the overall level of self-realization in the learning process will be. The method was tested and standardized on a sample of 436 people as a part of the research work under grant of Russian Foundation for Humaltnities "Image of students' youth of modern Russia" (No 07-06-02005a, 2006-2009), grant of RFBR "Information technologies of ensuring self-realization of student youth in the course of higher school education" (No. 15-06-08802, 2015-2016) and grant "Self-realization of student youth as an indicator and a factor of psychological health in conditions of socio-cultural challenges for Russian society" (No 18-013-01151, 2018-2020).

The following static procedures were used in the study. In order to obtain test data according to the above methods, the basic procedures of descriptive statistics were used (average values, standard deviation, mode, median, excesses, asymmetry, etc.). In order to represent the differences in the significance of attractive spheres of University activity among students pursuing humanities and technical courses, the comparative ranking method was used. It consisted in comparing two rating lists of these spheres obtained from the samples of students studying various specialties. The students' determination of various categories of self-realization was carried out by the procedure of polar division of the sample into two groups in accordance with low and high indicators on the scales of the Method for studying self-realization in higher school education (Shutenko A. and Shutenko E., 2008).

The analysis of differences in the subjective significance of attractive spheres of University among students with different levels of self-realization in learning was carried out using the Student's t-test. This criterion calculated the differences in the indicators of subjective significance in two samples of students by comparing the arithmetic mean values of these indicators. The fixation of significant differences was carried out only for statistically reliable t-test data from all obtained, i.e. for those that exceeded the critically tabular ones and received a sufficient level of confidence probability on the coefficient «p» (which indicates the number of possible errors). As it is customary to calculate in psychological research, this coefficient should not exceed values of 0.05 ($p \leq 0.005$) (Student, 1908).

Results

The concept of attractors for students' self-realization in University education

To understand the adequacy of the conditions of University training for the students' self-realization task, we consider it appropriate to use such concept like "a self-realization attractor" (from eng. to attract). In the reference literature, the term "attractor" (from Latin attraho – I attract to myself) is considered as "... one of the key concepts of synergetics, characterizing the relatively stable structure of an object, which attracts all sorts of trajectories of system elements, directing their movement and evolution in a certain direction. Figuratively speaking, the attractor performs the functions of an autopilot, keeping a complex set of aircraft instruments and controls in certain modes and parameters that do not allow to stray" (Lebedev and Rubashkin, 2010, p. 136).

The attractor in system determination means the potential state of the system to which it evolves. According to Knyazeva and Turobov (2000), the attractor is the final field of the inevitable convergence of the phase trajectories of a complex system motion. A point (a stable focus) or another more complex formation can act as an attractor. A metaphor of the cone of attraction is used in synergetics, "... which, as it were, draws in itself the set of possible trajectories of the system, determined by different initial conditions. The funnel pulls together the disparate initial lines of the trajectories into a common, increasingly narrow

beam. The effect of the attractor is that it carries out a determination, as it were, of the future upcoming state of the system. The state has not been reached yet, it does not exist, but it somehow mysteriously extends the tentacles from the future to the present. In the teleological sense, the look at the attractor can be determined by analogy with the goal, as if it were goal an immanently chosen by the system, to which it aims, deploying its functions and components" (ibid, p. 168).

The concept of "attractor for self-realization" as applied to the objectives of our research means the presence in the University system an attractive (i.e. responding to internal students' motivation and requests) spheres and forms of activities in which they can fully express themselves as a person, gain valuable knowledge and subjectively significant experience of self-development.

Consequently, an appeal to the concept of self-realization attractors allows focusing on identifying attractive areas and forms of promotion of students' personal efforts and potential from the point of view of their all-round self-fulfillment in the University training process.

Potential attractors of students' self-realization in University education

While applying the methods for assessing the subjective significance of areas of intra-University activity at the first stage of the study, their opinions, expectations and orientations regarding the preferred and significant spheres and areas of activity, occupations and forms of activity that are interesting for them in terms of self-realization were revealed.

The stimulus material of the questionnaire consisted of a list of unfinished sentences that students completed in accordance with their own experience of studying at the University:

"While undergoing training at our University, I would like to study ...".

"Over the years of study at our University, most of all I would like to prove myself in the field ..."

"Of all the present spheres of activity of our University, I am most attracted by such spheres as ...".

The received responses were processed using the content-analysis method. This made it possible to determine the set of the most expressive and frequently mentioned topics that point to the subjectively significant areas of students' self-expression in the University. The totality of such topics was subjected to thesaurus analysis (Lukov Val. and Lukov Vl., 2004). As a result of such a double analysis, all topics were combined into several kindred semantic clusters of more definite and unambiguous content. For example, such types of activity as "educational activity" and "cognitive activity" were interpreted by students in related concepts, which allowed them to be combined into one area of "educational and cognitive activity". In the course of clarifying discussions within the framework of focus group work, a list of 9 stable, thematically distinct associations of answers indicating one or another attractive sphere of activity and occupation was formulated. We identified them as attractors of self-realization: learning activity, research activity, sports-wellness activity, volunteer work, artistic-creative activity, entrepreneurial activity, information-media activity, social-civic activity, cross-cultural communications.

We give brief characteristics of the selected attractors below.

1. The attractor of learning-cognitive activity acts as the traditionally dominant factor in the attractiveness of University training in terms of students' self-development and self-realization. The deep knowledge, gaining professional competencies and experience orientation distinguishes educational activity as a leading attractor for students. Meanwhile, the attractiveness of learning has noticeably decreased in the last time. As the students noted, the current University education is not distinguished by a high intellectual level of knowledge, its depth, cognitive orientation, information content, personal interaction, fundamental and professional orientation of training leave much to be desired. In addition, traditional learning activities and classroom work are losing the previous priority in the conditions of the ubiquitous Internet and the latest information-communication technologies (ICT). ICT is distinguished by a bewitching interface, accessibility, visibility, entertaining, highly informative, interactivity, visualization capacity, manufacturability, network mass, sensitivity to user requests, etc. Such capabilities of ICT weaken the attractiveness of traditional teaching and learning for students. To solve this problem, it is necessary to organically bind and intertwined the latest ICTs in the training process without reducing the essence of the academic activity (developing cognitive competencies of the personality), and in order to strengthen interpersonal relationships and cooperation in learning (Shutenko et al., 2018). According to students, such training courses in which teaching carried out at the expense of the wide and diverse use of latest ICTs cause live interest and enthusiasm throughout the entire semester.

2. The attractor of research activity stands out for its importance for students in terms of their self-realization as future highly qualified and competitive specialists. It is no secret that the taste for the profession, the initial experience of discoveries is inculcated precisely in scientific work, in joining with scientific knowledge and generalized methods of cognitive-heuristic activity. At the same time stronger scientific and production potential of the University creates more opportunities for students' self-realization.

To increase the attractiveness and effectiveness of the research sphere, more personalization of the scientific work itself is necessary, and it should be ensured by the following conditions:

- the presence in the University of a developed scientific and experimental infrastructure, scientific schools and directions;

- performance of research work by all teaching staff;

- personal assignment of students to the teacher-scientist as a consultant (supervisor, tutor, facilitator, etc.);

- the formation of various student scientific communities (scientific-problem groups, laboratories, sections, etc.);

- conducting special classes to master the methodology and technology of scientific research;

- performing by students of scientific, practical and experimental work as freelance lab assistants, laboratory assistants of design bureaus, departments, etc.;

- regular intra-University student scientific conferences, round tables with the invitation of leading scientists, practitioners with the possibility of publishing and licensing student work;

- wide support and stimulation (including material) of students scientific initiatives, projects and achievements, instilling the image of a successful student as an inquisitive scientist.

The person-centric construction of the research sphere in a University as a space for students' self-realization can serve as nutritional basis and necessary aid for their work as motivated and trained specialists (Shutenko A. and Shutenko E., 2008).

3. The attractor of sports-wellness activity is directly related to ensuring healthy development and self-realization of students as fully functioning subjects. The presence at the University of various sports and tourism structures (societies, circles, clubs, etc.), as well as the development of sports infrastructure (a stadium, a court, a swimming pool, a gym, etc.), regular sporting events, health days, etc. contributes to a youth spirit of competition is the basis for disease prevention and acquires a taste to the culture of a healthy lifestyle. Unfortunately, a big number of students have no interest in physical education and sports or they do not want to do it at all. In this regard it is important to cultivate an intra-University atmosphere of fashion and prestige of sports, to make certain places and forms of sports and recreation work accessible for all students, to overcome formal and commercial approaches in the organization of sports-health activities at the University.

4. The attractor of volunteer work has become noticeably actual in the student community recently. Volunteerism is a special form of social service, which is carried out by free will and aimed at selfless provision of social assistance and socially significant services. Attractiveness of volunteer activity involves a socially approved effect of manifestation students' personal properties in a situation of disinterested initiative for the sake of caring for the welfare of other people. This effect provides the attractiveness of volunteering, which activates the internal mechanisms of self-development of students, as harmonious socially responsible personalities, without compulsion or self-serving motivation. It happens due to actualization of moral foundations of their self-awareness. Volunteer work has a positive impact on the social situation of development, it contributes to the expansion of young people's self-awareness and self-realization. Discovering new forms of socially useful experience and meaningful activities, it expands the horizons of students' life prospects, brings more clarity in understanding the world picture, their role and place in it. Moreover, volunteering helps to overcome a certain paradox in the youth consciousness, disunity and alienation in the youth community (Shutenko et al., 2019).

5. The attractor of artistic-creative activity and amateur activity plays an important role for students' self-realization in terms of their full self-expression and self-expression as talented and outstanding individuals. The presence at the University of various cultural structures (theater, music, art, dance studios, choir, circles, clubs and workshops, various amateur creative associations, clubs of cheerful and smart, etc.) activates the inner creative forces and abilities of students, contributes to the versatile manifestation of their personality, forms their culture of self-expression and self-presentation, contributes to the harmonious development and liberation of their intellectual potential. In order to involve students into this important area of self-development, it is necessary to avoid formalism and demonstrativeness, low-grade themes and templates of mass culture, culture of entertainment and worthless self-affirmation, mystical and postmodern exercises, etc. It is essential to be ruled by moral guidelines and universal values.

6. Today the attractor of innovative-entrepreneurial activity is a component of organization of students' intra-University life that is really advantageous for their self-realization as capable and competitive subjects of the market economy in various areas of business. In University practice, such an attractor is represented in the activities of small innovative enterprises (SIE). Studying this form of students' self-realization, we stated that at the socio-psychological level SIE is a community of employees, who self-

realize creatively; each of them makes his own personal contribution to the development of a new idea or product, develops as a competent and creative specialist while realizing their essential powers. Innovative work at SIE opens up more opportunities for self-realization for students and, in general, increases their competitiveness in the contemporary labor market. In this regard University SIEs significantly enrich the learning process, filling the well-known gap between the students' knowledge gained in the classroom and the experience of their application in practice. University graduates become not only knowledge holders, but also bearers of various innovations; they become authors (or co-authors) of all kinds of know-how, which noticeably expands the horizon of their professional opportunities and career prospects (Doroshenko et al., 2016).

7. Attractor of information-media activity involves students' working in various bodies of the University press, University press center, their participation in cooperation with the media, as well as their work to ensure electronic information-educational environment of the University (information-educational portals, online courses, etc.), information and network communities, online discussion platforms, etc. This attractor, as an independent sphere of students' self-realization, formed while our civilization, including educational institutions, was converting to the information society and digital communication technologies (Shutenko et al., 2018). This sphere of activity attracts students by the presence of a wide range of opportunities for social recognition and communication in the world of information reality, remotely inclusive mode of work, possibilities for endless communication and exchange of information, versatile construction of new forms of communication and interaction, rapid dissemination and verification of personal experience and knowledge.

8. The attractor of social-civic activity involves students' participation in the work of various student and civil public organizations, student councils, trade unions, military-patriotic, search, educational, civil law, environmental and other associations and organizations. This attractor plays an essential role in the formation of a mature social identity of students, in the development of their civic orientation and responsibility, as well as in the growth of self-awareness as a capable and competent social subject. Unfortunately, sometimes in University practice, this attractor fades due to excessive bureaucratization and control by the administrative structures of the University, which significantly reduces the overall level of attractiveness of this sphere and transforms it into meaningless nominal work "just for the record". In this regard the decisive factor is the independence and individual initiative of student public organizations, the introduction of relevant and topical content in the agenda of these organizations, the support of their informal structural ties and sincere interpersonal relationships.

9. The attractor of cross-cultural communications stands out as an independent sphere in connection with the entry of Universities into the international educational and cultural space of learning and professional training. Today, leading universities in their faculties and training courses teach foreign students who come from a different social environment and culture. For their harmonious social integration into the national culture and the higher education system, they need help and participation from Russian students as carriers of this culture and potential friends. Many students willingly and eagerly participate in this interesting activity; they understand it as a selfless help to their foreign fellow students, as a chance to improve their language practice and linguocultural competence, etc. Work in the centers of cross-cultural communication, international student associations and organizations greatly enhance the students' cultural picture of the world, perfects their national and cultural identity, acquaints them with the values and traditions of the foreign-language culture, increases the cultural resources of their self-realization in future international cooperation (Ryzhkova and Sergeev, 2019).

Each of the above attractors of students' self-realization as an independent area of activity is allocated very conditionally, since in practice the attractive spheres are closely intertwined and interconnected. For example, it is difficult to imagine a volunteer attractor without the public-civic or information-media one, as well as a research attractor is closely connected with an innovative-entrepreneurial one. Moreover, the presented set of attractors is not universal and differs among universities of various specializations. It is obvious that in each individual case a particular University has its own attractive forms and spheres of ensuring the students' life activities, builds its own unique socio-cultural environment for the development and self-realization of the personality (Romanova, 2020a).

Significance of attractors for students of different specialties
At the first stage of our research the identified attractors of self-realization indicated the presence of potential areas of students' involvement that the University can offer. Meanwhile, the real effect of these attractors on the students' development and the actual degree of their attractiveness for each student remained in question.

It is obvious that the presence of certain areas and fields of the University activity is a necessary,

but insufficient condition for students' self-realization. It is important that these areas pass into the category of real attractors for students, they should change from potential forms of activity to actual and personally significant ones, so that they arouse genuine interest, have value and actually attract students (Romanova, 2020b).

In order to determine the actual impact of the selected attractors on the process of students' self-realization within the walls of the chosen University, we organized the second stage of our study.

We conducted a diagnostic survey of the students to assess the degree of influence of selected attractors on them and their involvement in the scope of these attractors.

During the survey students were asked to rate on a 10-point scale the degree of real attractiveness of each of the nine marked attractors in the logic of completing the next three sentences-connotations. The survey's stimulus material is presented in table 1.

Table 1

Stimulus material of the method for assessing the subjective significance of areas of intra-university activity

The questions for survey and answer options	Assessment in points (from 1 to 10)	Key (numb attractors)
In process of studying at our University I am attracted first of all by		
1 ... group classes		1.
1 ... research work		2.
1 ... sports-wellness activities		3.
1 ... participation in volunteer work		4.
1 ... participation in artistic-creative and amateur activities		5.
1 ... work in innovative enterprises of the University		6.
1 ... information-media sphere of activity		7.
1 ... social work and participation in University self-government		8.
1 ... international activities of the University		9.
I am glad that at my University I can express myself in such areas as		
1. ...innovative-entrepreneurial work		6.
2. ... artistic-creative and amateur activities		5.
3. ... research work		2.
4. ... volunteer work		4.
5. ...information-media activities, work in the press center		7.
6. ... learning-cognitive (seminar, practical, etc.) classes		1.
7. ...international activities of the University		9.
8. ... sports-wellness activities		3.
9. ... social work and participation in university self-government		8.
While studying at our University I would like to express myself more in		
1. ... research work		2.
2. ...social work, in student organizations		9.
3. ... sports-wellness sphere		3.
4. ...international activities of the University		9.
5. ...learning-cognitive activities, while studying the subjects		1.
6. ...information-media sphere, in media work and communications		7.
7. ...volunteer work		4.
8. ...innovative-entrepreneurial sphere		6.
9. ... creative activities and amateur activities		5.

The results of data processing regarding this survey allowed us to determine the level of appeal of attractors and the degree of the students' involvement in the scope of the attractors. The results were calculated by figuring the average weight of each attractor over the entire array of data collected from the students. Summary results of the attractors' rating for the students of humanitarian and technical specialties are shown in tables 2 and 3, respectively. The tables show the average ratings of the significance of the attractors presented in the form of rating lists (from the most significant to the less significant).

Table 2.
Subjective significance rating of attractors for self-realization among the students pursuing humanities courses (N=106)

№	attractors of University self-realization	Level of significance (average scores for the sample)
1.	Artistic-creative and amateur activities	6,7
2.	Learning-cognitive activity	6,5
3.	Volunteer activity	6,1
4.	Research work	5,9
5.	Information-media activity	4,7
6.	Social-civic activity	4,3
7.	Cross-cultural communications	3,5
8.	Sports-wellness activity	2,8
9.	Innovative-entrepreneurial activity	2,6

Table 3.
Subjective significance rating of attractors for self-realization among students pursuing technical courses (N=108)

№	attractors of University self-realization	Level of significance (average points for the sample)
1.	Research work	6,9
2.	Learning-cognitive activity	6,7
3.	Sports-wellness activity	6,6
4.	Social-civic activity	5,5
5.	Information-media activity	5,1
6.	Artistic-creative and amateur activities	4,6
7.	Volunteer activity	3,6
8.	Innovative-entrepreneurial activity	3,4
9.	Cross-cultural communications	3,1

According to the summarized attractors' rating data, the total distribution of the maximum ratings does not exceed 70 % and the minimum ones do not fall below 25% of significance, which generally corresponds to the parameters of the normal data distribution for the standard sample.

In terms of content it is noteworthy that the students pursuing humanities courses consider the attractors of artistic-creative, learning-cognitive, volunteer and research activities to be the most significant ones. Moreover, most of all they are attracted by artistic and amateur spheres, ahead of the educational and scientific activities. In addition, the attractor of volunteer work is highlighted, which takes the third place exceeding the importance of scientific work. Among the attractors with the least appeal there is sports and recreation sphere, as well as innovative and entrepreneurial activity.

Students *pursuing technical courses* are primarily attracted to the traditional fields of study at the University (scientific and educational). It is also noteworthy that there is a fairly pronounced level

of attractors of sports-wellness and recreation activities, the latter serve as a good prerequisite for the formation of foundations of physical and psychological health. The rating is closed by the attractors of innovative-entrepreneurial activity and cross-cultural communications, which indicates a slight business and international orientation of technical students.

In general, these results emphasize the specifics and differences in creating the intra-University climate, which are inherent to the work of different universities. Thus, the technical institute has developed a number of small sports organizations, sections and circles that attract students actively, which is reflected in the results of their subjective rating of self-realization attractors. At the same time the Humanities University has a well-developed network of artistic and creative workshops, studios, amateur interest groups, etc., which has led to a high rating of attractiveness of this sphere according to students' assessments. Meanwhile, we cannot but become alert because of the lowered general indicators of traditional academic spheres, and above all, attractors of the learning-cognitive activity and scientific-research activity, which should be leading motivators of University training for most students regardless of specialization.

### The intensity of attractors among the students with different levels of self-realization

In order to test the main hypothesis statement, we conducted a comparative study of the manifestation of the above attractors among the students with different levels of self-realization in higher education. The third stage of research was devoted to solving this problem.

The empirical work consisted in referring to the data on the level of students' self-realization in learning who took part in this research work. We took into account the experience we accumulated during the previous research cycle in the framework of our scientific work (Shutenko, 2013; Shutenko, 2015). We applied a special technique – Method for studying self-realization in higher school education (Shutenko A. and Shutenko E., 2008). This questionnaire reveals the level of success in mastering the content and methods of training, the degree of disclosure of personal potential and versatile self-manifestation of students in the University environment. The concept of self-realization in University education, which is operationalized in this method, means the process and result of the active development of the essential forces and abilities of students as capable and competent individuals through educational resources and socializing opportunities of the University. This method measures the following indicators (scales) of self-realization in University environment: 1) personal involvement in the learning process, 2) implementation of personal abilities, 3) social inclusion and acceptance in the University community (Shutenko A. and Shutenko E., 2008).

As a result of this technique implementation, two polar groups of students with high and low indicators of self-realization in the learning process, respectively, were selected from the entire array of students (214 people) of both Universities. In quantitative terms, these groups formed in the following ratio:
- students with an increased level of self-realization at the University - 52 people;
- students with reduced level of self-realization at the University - 49 people.

For each selected group we processed and calculated the average indicators of the presented attractors manifestation. Then we performed a comparative analysis of these indicators in different groups of students by comparing them on each attractor. To verify the reliability of differences, we applied for calculating statistically significant differences (Student's t-test), which makes it possible to determine the level of significance of differences in the obtained data in two samples of students. Figure 1 in the form of histograms shows the generalized summary data of indicators of both groups of students – with expressed and unexpressed self-realization in learning process. This figure shows the overall configuration of indicators of attractors' manifestation that differs significantly in all items in relation to the groups of students with different degrees of self-realization in learning (see Fig.1). Students with increased self-realization have a higher rate of their involvement in the scope of the presented attractors; in this group the significance indicators do not fall below 5,8 points (on a 10-point scale). Such spheres as learning-cognitive activity, research and social activities, artistic-creative and amateur one are of special attraction and significance for them, which is traditionally appropriate for students with an active life position and motivation for self-development in the field of education (see Fig.1).
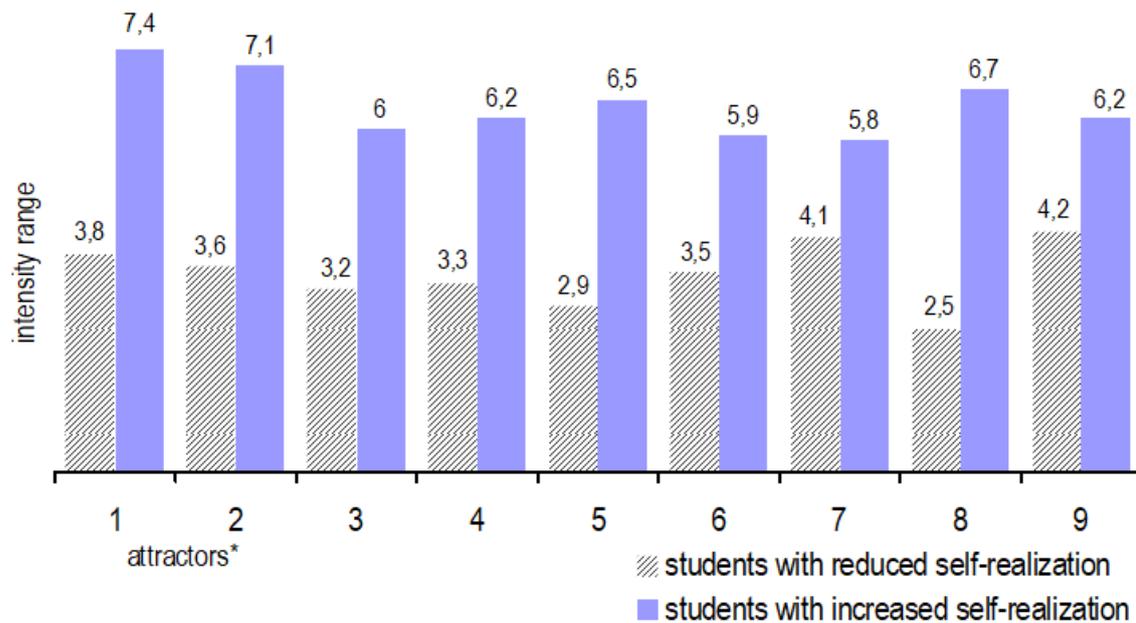
Note. Attractive spheres: 1 – learning-cognitive; 2 – research; 3 - sports-wellness; 4 – volunteer; 5 – artistic-creative; 6 – innovative-entrepreneurial; 7 – information-media; 8 – social-civic; 9 – cross-cultural interaction.

Figure 1. Summary data on the subjective significance of attractive spheres of University life for students with different levels of self-realization in learning

Table 4.

Comparative data on the subjective significance of attractive spheres of University life for students with different levels of self-realization in learning (by t-criterion of Student)

No	Attractive spheres	students with reduced self-realization (average values)	students with increased self-realization (average values)	t-empirical, p≤0.01
1.	learning-cognitive activity	3.82	7.4	**14.5**
2.	research activity	3.6	7.1	**13.3**
3.	sports-wellness activity	3.2	6.0	**8.5**
4.	volunteer work	3.3	6.2	**8.1**
5.	artistic-creative activity	2.9	6.5	**9.8**
6.	innovative-entrepreneurial activity	3.5	5.9	**8.5**
7.	information-media activity	4.1	5.8	**6**
8.	social-civic activity	2.5	6.7	**11.6**
9.	cross-cultural interaction activity	4.2	6.2	**6.2**

As reflected in the figure 1 and Table 4, students with reduced self-realization do not show a strong interest or desire to be involved in the potential attractive spheres of self-development offered by the University. According to the generalized data on the significance of these spheres for students, they do not act as attractors for them, since their attractiveness does not exceed an average of 4.2 points (on a 10-point scale of significance) (see Fig. 1). Such spheres as public, sports-wellness, artistic-creative one got substantially low ratings. It is important to note essentially reduced indicators of the significance of the leading areas – learning-cognitive, as well as research one, which are the core of University training of a qualified specialist.

Discussion

The results obtained in the course of the study provide grounds for confirming the hypothesis that there is a direct relationship between the level of students' self-realization at University the degree of their involvement and personal immersion in the scope of attractive spheres of educational and extracurricular activities of the higher school. The more the students are involved in various forms and spheres of higher school activities, the higher the probability of their successful self-realization and psychological well-being in the process of University training is.

In this regard, the results obtained can be useful for teachers, parents and anyone who is concerned about the full development of today's student youth. The study shows that the common denominator of their efforts can be the provision of an active and versatile lifestyle of students, their involvement in various forms and spheres of manifestation of their personality both in academic and extracurricular activities, using educational and socializing resources of higher education as attractors of self-realization. Unfortunately, the opposite trend has been observed recently. There is a reduction in the socializing and developing opportunities of higher education.

In this study, the attractors of students' self-realization were determined in the conditions of normal classroom and extracurricular work of the selected Universities. After the introduction of COVID-19 pandemic measures at these Universities, we did not study these attractors, but it is obvious that the situation has changed dramatically and not for the better. Many of the above-mentioned attractors have lost their power, and no new attractive spheres have appeared.

In the current period of University education in the context of the pandemic new risks and difficulties for the self-realization of student youth have emerged. The use of distance learning and teaching has led to the curtailment of traditional classroom forms and methods, significantly distorted the educational space of Universities, including the students' learning activities within the framework of digitalization of education. Under the influence of quarantine measures in extra-curricular practice many important spheres of intra-University life (social-civic, sports-wellness, mass-cultural, artistic-creative, amateur, etc.) have been frozen. They actually ceased to fulfill their functions as sources of self-development and self-realization of students. Thus, the regime of self-isolation in University education has become a difficult test for higher education, for its socio-cultural viability and formative potential as the most important aspects of professional and personal growth of the personality. Will a higher school be able to provide high-quality education and development of students in the face of challenges of digitalization and remoteness of education or turn into a banal portal for information loading of consciousness? This question already requires a solution in the current period and is becoming the most essential for the scientific and teaching community from the point of view of their professional identity and appropriateness in the realities of informatized education.

Conclusion

This study presents the conceptualization of the phenomenon and process of students' self-realization as a value of the system of University training and criterion of its success. In the experimental part of the research the concept of attractors for students 'self-realization in the system of University training is studied and verified. This category is introduced to identify appealing spheres and forms of manifestation of students 'personal efforts and potential, which are important factors in maintaining their psychological well-being and harmonious development.

The significance of this result is in determining the range of important activities of a modern University to ensure full self-realization of students. In the practical part of the study, some areas and spheres of the University's activity were identified that have signs of an attractor: learning-cognitive, research, sports-wellness, volunteering, artistic-creative, innovative-entrepreneurial, sphere of information-media activity, social-civic, sphere of cross-cultural communications.

As a result of a diagnostic survey of the students pursuing humanities and technical courses, the degree of subjective significance of the selected attractors is identified. Moreover, the dependence of students' self-realization on the degree of their involvement in the scope of attractive spheres of University educational and extracurricular activities is confirmed.

The study showed that if the main spheres of University life psychologically act as attractors for students' self-development, then with a significant share of probability it is appropriate to suppose successful personal growth and self-realization of students. In this regard the presence (or absence) of attractors can in a certain sense predict opportunities (or obstacles) for self-realization, and thus, the

categories of attractors proposed in our study can be applied as a sociocultural predictors of psychological well-being and full-fledged development of students in the University educational environment.

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