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Experimental Study of Developing Creativity of University Students

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Abstract

One of the major challenges of modern higher education is development of students' creativity. Diagnostics of creativity and mental processes associated with it, creativity development are particularly important.

Questions that were investigated: creativity levels of Al-Farabi Kazakh National University students; predominant type of motivation in respondents' activity, creativity development techniques.

Purpose of the Study is to diagnose levels of development of creativity and the dominant motivation type in activity of students of Al-Farabi Kazakh National University, to work out recommendations on developing creative educational environment at a tertiary education institution.

Research Methods include critical analysis, simulation, and systematization of fundamentals of creativity. Practical methods are qualitative analysis and quantitative analysis of the research results. Psychological methods include the test «Creativity» by N. Vishnyakova and the questionnaire of A.A.Rean «Motivation for success and fear of failure» (MFSFF), mathematical statistical method of processing material.

There is correlation between the level of creativity and the predominant motivation in the activities of an individual. In the majority of respondents discrepancy between their actual creativity level and the ideal representation of their creativity was discovered, it indicates the willingness of the participants to improve their creative skills. There is correlation between the creativity level and emotionality (emotional intelligence quotient).

The obtained results can be used in individual and group psychological work with students (for developing creative portraits of a person, in psychological training programs, educational workshops, for designing elective courses). The need to develop and apply psychoeducational program aimed at removing barriers to individual creativity (cognitive and behavioral stereotypes) during the period of study at the University is identified.

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1. Introduction

Creation of educational environment favorable for development of the personality of a student and his/her creative abilities is an important task of modern society. University environment is a special one; in it a student acquires profession. At the same time, creativity is a trait necessary for a professional at the time of innovations. This trait is very important for teachers who in their professional activity will be developing students' abilities and skills.

The purpose of the research is to diagnose levels of students' creativity, development of this property in students, working out of recommendations for designing creative educational environment at a higher education institution.

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Empirical study of creativity levels of student youth of Al-Farabi KazNU was carried out in April and May of 2015. The mentioned research included diagnostics of the personality by using 2 parameters: creativity of the person and type of motivation dominating in the activity of the person.

Research Methods - Theoretical analysis of the concept and characteristics of creativity, systematization of theoretical foundations of creativity. The diagnostics was carried out by using the following test procedures: the test «Creativity» by N. Vishnyakova and the questionnaire of A.A.Rean «Motivation for success and fear of failure» (MFSF).

The 2nd and 3rd year students of educational specialties "Educational Psychology" and "Social Pedagogy and Self-cognition" studying at Al-Farabi KazNU took part in the research. The total number of respondents was 69 students. The sexual structure of the respondents was as follows: 83.3 % of the respondents were females and 16.7 % were males.

2. Definition of the concept of creativity

The concept of creativity means to create. It was used for the first time by D. Simpson in 1922 to identify human ability to reject stereotyped ways of thinking.

J.Guilford first proposed the concept of creativity as integrated ability associated with divergent thinking. Divergent thinking is thinking "going simultaneously in many directions", it is oriented toward producing great number of problem solutions. Divergent thinking is the main ingredient of creativity. By its definition, creativity is ability to generate ideas, to think out and create something new (Guilford J., 1982; Berezina T.N., Tereshchenko R. N., 2002). Creative thinking is described as divergent thinking and ability to produce a variety of approaches to a specific problem, it leads to unexpected conclusions and results. Divergent thinking is the opposite to convergent thinking. Convergent thinking focuses on deriving the single, correct solution based on analysis of multiple preliminary conditions (Gretsov A.G., 2008).

According to A. Gretsov, creative abilities are personality traits enabling to produce results that are original and new. Creativity, on the one hand, is characteristic of an individual. Universal traits of a creative individual include the following cognitive abilities: keen observation, ability to avoid perceptual sets; to see things in new ways, striving to express truth not evident to others, independence in expressions of opinion, willingness to work diligently for the sake of new knowledge, high intellectual abilities and good memory, ability to hold in mind multiple ideas and to compare them. Such personal traits as heightened sensitivity to own subconscious motives, daydreams, impulses, the rich inner world producing rich inner emotion are specified. Creative mind is active mind constantly asking questions, generating multiple ideas.

Creativity of the personality, according to C. Rogers, consists in exploring by the person of his own inner psychical world; in the course of this exploration he designs new adaptive ways of behavior and overcomes his own restrictions when interacting with the outside world . C. Rogers writes: "Creative process is our vital power, and the one who has experienced it once, won't be able to live without it any longer. Creativity is our essence, our vitality" (Rogers C., Freiberg H. J. 2002).

There were more than 60 definitions of creativity in the middle of the XX century. Taylor, having analyzed the existing thesauruses of the concept of "creativity", divided them into six types. Each type differs in the approach of researchers to the creativity problem (Torshina, 1998).

- Gestalt concepts describe creative process as destruction of the existing Gestalt for creation of a better one;
- Innovative concepts are focused on creativity assessment based on novelty of the final product;
- Problem concepts define creativity as a number of processes used to solve tasks. J. Guilford's definition also belongs to this type: "Creativity is a process of divergent thinking";
- Psychoanalytic (dynamic) concepts describe creativity in terms of relationships (It, ego and super ego);
- Esthetic or expressional concepts place emphasis on self-expression of the creator;
- Various concepts are the concepts not included in any of above-mentioned groups (for example, "addition to the body of universal knowledge").

The analysis of literature allowed us to single out the definition of creativity given by N.F. Vishnyakova. She suggested, "creativity is a set of intellectual and personal abilities enabling the individual to independently bring forth problems, generate multiple original ideas and produce innovative solutions" (Vishnyakova N.F., 1996).

3. Theories of creativity

S. Yagolkovsky proposes different hierarchical classification of approaches to studying of creativity:

- 1) *Psychophysiological (biometric)* approach focuses on investigation of biological and psychophysiological prerequisites of creativity.
- 2) *Cognitive approach* deals with cognitive aspects of creativity.
- 3) *The personal approach* focuses on studying traits of the creative person.
- 4) *Economic-Pragmatic approach*; within the frames of this approach features of creativity process and its products in specific social and economic conditions are studied.
- 5) *System approach*; within this approach creativity of the subject is investigated in conjunction with his sociocultural environment, economic reality, problem area in which his creative activity is carried out (Morozov A.V 2001).

The research conducted by V. Druzhinin, N. Hazratova showed that development of creativity passes through at least two phases (Druzhinin V. N., 1996). They cover the period of childhood and youth.

The first phase. Development of "primary" creativity as general creative ability, which is not domain specific. The sensitivity period of this stage, according to a number of authors, comes at the age of three-five. During this period imitation by the child of the significant adult as a creative model, possibly, is the main mechanism of formation of creativity. It is also possible that for some time creativity passes into a latent state (a phenomenon of "children's creativity").

The second phase. It covers adolescence and youth (probably, from thirteen to twenty). During this period, "specialized" creativity i.e., creative ability connected with a certain sphere of human activity is formed on the basis of "primary" creativity. At this stage the special, significant role is played by a role model, support of family and peers is also important (Druzhinin V. N., 1996).

T.A. Barysheva identifies the following stages of formation of creativity in ontogenesis:

- 1) awakening (motivational impulse);
- 2) imitation (imitation, acquisition of patterns of creative behavior, techniques, means, ways of creative activity);
- 3) transformation (transformation of experience to conform to personality traits, opportunities, needs of the individual);
- 4) harmonization of psychological structure of creativity;
- 5) individualization of creative activity (Barysheva T.A., 2005).

According to the research of Shkolny V.A., creativity is the dynamic integrated system representing, as a rule, a combination of seven interconnected structural components: (1) Creative abilities; (2) Creative motivation; (3) Creative orientation; (4) Creative attitude; (5) Creative volitional act; (6) Creative activity; (7) Level of creative aspirations (Shkolny V.A., 2009).

The concept of internal and external factors influencing creativity is important for the purpose of our research (Lvova E.V., 2005). Such factors help design creative environment at the university, and work out recommendations (figure 1). We systematized the above fundamentals of creativity development in the conditional theoretical model below (figure 1).

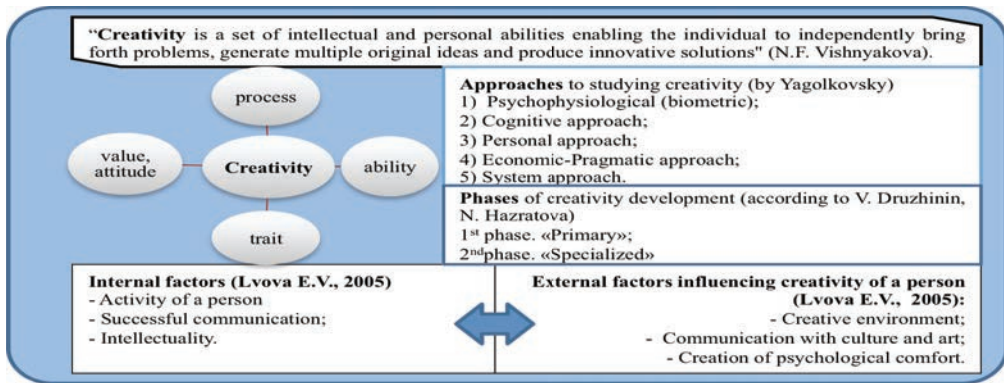


Fig.1. Systematization of fundamentals of creativity

Thus, having considered fundamentals of creativity development, hereby we pass to the practical part of the research. Studying and systematization of the fundamentals enabled us to choose tests to determine creativity. The test "Creativity" by N. Vishnyakova was chosen not incidentally. It is based on personal approach and contiguous to humanistic psychology of C. Rogers. By comparing two images of creativity "actual self" and "ideal self" we can determine creative reserve and creative potential of the personality. By using the second test to identify the type of motivation prevailing in activity of a person we can determine creativity potential of students.

4. Results

4.1. Results of test for determining students' creativity levels

Analysis of results of testing students of Al-Farabi KazNU showed that 36,7% of respondents have high level of creativity (figure 2, table 1).

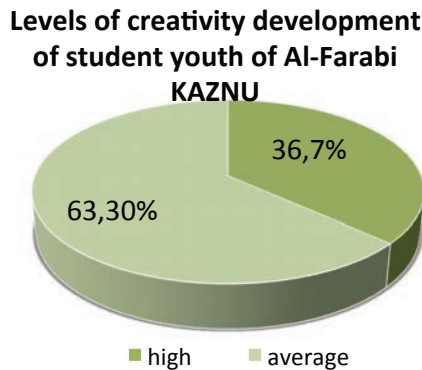


Fig. 2. Level of creativity development of respondents

The above analysis revealed that the students surveyed have high level of development of creative abilities, are open to new ideas, tend to solve tasks presented to them in the original way.

Respondents with high creativity level have the following qualities:

- high degree of fluency of thought (amount of ideas arising within a unit of time);
- highly developed abilities for generating hypotheses, irrelevancy (logical independence of reaction from stimulus);
- predisposition to divergent thinking (alternative, multi-version thinking implying multiple answers to one question);
- high level of imagination development, curiosity and original thinking.

63,3% of the students surveyed have average creativity level (it is within normal range). It means that respondents of this category have sufficiently developed qualities required for effective use of their creative potential. However, barriers (i.e., cognitive and behavioral stereotypes) prevent them from manifesting their creativity fully. If respondents of the above-mentioned category push the barriers revealed, they will be able to develop high creativity level and effectively use qualities of the creative personality in various areas of activity (education, science, public affairs, etc.).

Table 1. Average quantitative indicators of creativity in respondents.

Qualities of a creative person	Actual self	Ideal self
Creative thinking	6,7	8,2
Curiosity	6,2	7,1
Originality	6,4	7,5
Imagination	6,2	7,5
Intuition	6,7	7,3
Emotionality. Empathy	7,2	7
Senseofhumor	6	7,4
Professional creativity	5,5	7,3

Discrepancy between actual self and ideal self was discovered with regard to the all eight indicators of creativity in 100% of respondents.

The greatest discrepancy was identified with regard to four indicators. They are "Professional creativity", "Creative thinking", "Originality" and "Imagination". It allows to draw a conclusion that the above-named 4 indicators of creativity are singled out by the respondents as insufficiently developed. The respondents believe it would be ideal to improve them considerably. Thus, majority of the undergraduate students who took part in the research believe that there are real opportunities for their creative development at the university, for example, when studying major courses, at creative workshops, master classes, psychology and pedagogical classes aimed at developing creative qualities and self-confidence of students.

When comparing creative portraits of undergraduate students it was discovered that 3-d year students believe they are too emotional as in the majority of them the actual level of development of emotionality and empathy should ideally be ("ideal self") far less. Unlike the other creative qualities, the mentioned qualities (emotionality and empathy) should not increase but instead should decrease during their training and development. In addition, they are convinced that emotions, especially negative ones, interfere with manifestation of their creative qualities, hinder development of professional creativity.

In undergraduate students, on the contrary, in the process of their training and personal development at the university (from a course year to a course year) the indicator "Emotionality, empathy" increases, reaching the highest point of development in the final 4th course year.

4.2. Results of testing students for a type of motivation prevailing in their activity

The analysis of the results of testing for the prevailing motivation in activity of the person (motivation for failure and motivation for success) showed that 3,3% of the respondents are motivated to fail in their activity (figure 3).

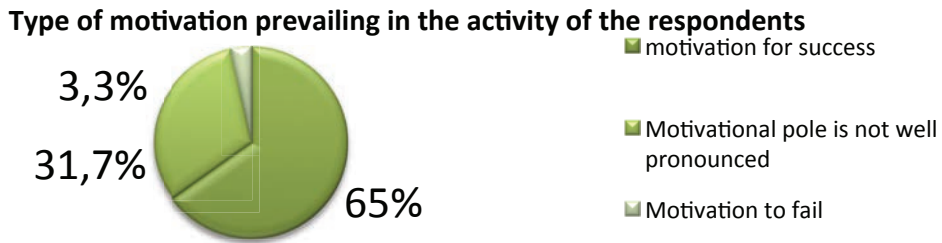


Figure 3 – Type of motivation prevailing in the activity of the respondents

Psychologists and teachers believe that motivation for failure is negative motivation. As an individual motivated for failure begins to solve a task, he first of all strives to develop such strategy of actions as to avoid a mistake (casual or expected), censure, weakening of trust of a person who is authority to him.

Thus situational uneasiness of the individual increases sharply, and the indicators of self-confidence and creativity on the contrary decrease. Respondents of this category, as a rule, avoid responsible commissions, and if after all they are charged with such task, they try to accomplish it responsibly and promptly. This is connected with features of nervous system of the people motivated for failure. In most cases, they are individuals either with weak nervous processes, or with strong, but inactive nervous processes, hence pronounced excitability of CNS, tendency to frustrations and fixedness.

Prevalence of motivation for success is characteristic for 65% of the respondents. As the respondents motivated for success begin to solve a task, they are positively motivated, self-confident, active, and responsible. They are distinguished by persistence, commitment, increasing level of creativity in the course of accomplishing the task.

The motivational pole of 31,7% of the participants in the research is not well pronounced, i.e. the both motives are presented in approximately equal ratio, providing harmonious development of professional and personal properties. The obtained data evidence that undergraduate students of this category show appropriate motivation depending on a situation.

For this category of the respondents, the following indicators are characteristic:

- Average or passing into high level of learning achievement;
- Adequate self-assessment;
- Average or passing into high level of emotional intelligence.

5. Discussion.

The received results are interpreted in the following way.

1. 100 % of the respondents showed discrepancy between their actual self and ideal self with regard to the creativity indicators “Creative thinking”, “Originality”, “Imagination” “Professional creativity” (i.e. their actual representation of own creativity contradicts to their ideal representation of own creativity). It is possible to carry out correction of respondents’ creative qualities when teaching major courses, at creative workshops, master classes, trainings, psychological and pedagogical classes. It is in addition desirable to organize training for enhancing emotional intelligence, self-confidence, ego boost, as they are indicators mutually influencing creativity;

2. Correlation dependence between the level of creativity and the prevailing motivation in activity of the personality was discovered. High and average level of creativity is mainly discovered in respondents with motivation for success and with motivational background not well pronounced (i.e., the individual has both motivations in equal measure, and each of them manifests itself adequately depending on a situation). Participants of research with motivation for failure mainly have average level of creativity;

3. Dependence between the level of creativity and emotionality was discovered. Respondents who are students with average level of creativity need their level of emotional intelligence to be corrected (they demonstrate difficulties in recognizing emotions and feelings of people, are prone to conflict, frequent irritability, irresolute, have low self-esteem). Excessive emotionality and sensitivity negatively influence development of creativity of students,

slowing down their creative and professional development. Majority of the respondents with high creativity level and motivation for success prevailing in activity manifest high level of development of emotional intelligence. They also wish to improve the creativity indicator "Emotionality, empathy".

6. Conclusion

The tests mentioned above can be used to design individual development trajectories for students. The results of research of creativity can be used in individual and group psychological work with university students. Students also made recommendations on development of creative environment at the university, such as: orientation to systematic self-development and self-improvement; application of innovative teaching methods and integration of art into other subjects; development of creative tasks for self-directed work of students; creative approach to preparation for classes; holding various fairs, exhibitions of students' creative works; organizing art competitions and giving creative awards; encouragement of students' initiatives; development of cognitive interest; creation of a "Club of creatives" of a department, faculty; carrying out creative and art trainings; field trips and visualization of what students saw and heard; formation of a creative portfolio of each student; each class shall give a creative student "food for thought"; development of creative products in class; active involvement of students in research; organization of different types of art therapies, etc.

The research will be continued by developing practical training programs based on cognitive, personal, pragmatic, and system approaches. Thus, the program of trainings will include classes developing intelligence, creativity, tasks to create a «portrait of creative professional", mind maps, case studies, etc.

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