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## **Research of the relationship between cognitive style «tolerance-intolerance to an unrealistic experience», motivation and self-regulation of learning and cognitive activity of students**

In this article the relation of the cognitive style of «tolerance-intolerance to an unrealistic experience», motivation and self-regulation of cognitive activity of first-year students is considered. Relevance of research is proved. The understanding of motivation and self-control of educational cognitive activity, and also cognitive style in foreign and domestic psychology is presented. The general characteristic of the studied cognitive style is given. The role of cognitive style in educational cognitive activity of students is shown. The ratio of various levels of motivation, self-control and indicators of tolerance-intolerance of students to unreal experience is revealed.

*Key words:* educational and cognitive activity, motivation, self-regulation, cognitive style, tolerance-intolerance to an unrealistic experience.

In modern conditions when society gets a lot of increasing information it is not enough to use the old forms of education representing transfer of knowledge from a teacher to students. Today the advancing development of human resources lies on the basis of progressive development and competitiveness. In this regard transition to the active forms of education assuming scientific search, wide use of independent work of students is carried out. On the one hand, such organization of educational activity allows students to form not only basic subject knowledge and skills but also the ability to get knowledge independently, to interpret it critically and to use scientific information effectively. On the other hand, requirements to educational cognitive activity of students increase.

Educational activity occurs through cognitive activity. It is based on motivation and self-control of the personality, on specific features of the cognitive sphere and cognitive styles in particular.

Motivation — is the first component in the structure of teaching and learning activities. It carries out the inducing and regulating functions. Development of motivation influences the academic success of students. It is established that between students with high and low academic success there are practically no distinctions in the level of intellectual development. But students with high academic success have more advanced educational and professional motivation than students with low academic success. The first have clear and objective idea of their future profession, the positive attitude towards it, aware of the social importance of the chosen specialty and are satisfied with the made choice. In addition, the internal motivation prevails among the students with high academic success. It means that they aim at obtaining qualitative and strong knowledge, forming useful professional skills. The external motivation prevails among the students with low academic success. Also created positive educational motivation has the effective compensating outcome. And this is what provides success in mastering knowledge and abilities in low-skilled case. In its turn, the high level of skills can not compensate lack of motivation to learning and does not lead to considerable progress in study [1].

The system of self-regulation is the second reserve of mentality which is capable to increase efficiency of educational cognitive activity of students. If the motivational system activates and directs a person, self-regulation system regulates human activities on the way to achieving the goal. O.A. Konopkin points out that self-regulation is that universal process which penetrates all levels of the organization of educational activity of students. He considers self-regulation as a «system and organized process of internal mental activity of a person in initiation, construction, maintenance and management of different types and forms of any activity which is directly implementing achievement of the purposes accepted by the person» [2; 6].

Productive cognitive styles act as the third resource. Cognitive styles have a special status, as they provide the link between cognition and personality, implement mediating, system-forming function. Interest to studying them is connected with a possibility to increase the efficiency of educational cognitive activity as soon as the type of interaction of a student with an educational situation depends on his cognitive and psychological properties [3; 20].

Although the «cognitive» is translated as «informative», «informative style» and «cognitive style» are not synonymous in the conceptual framework of the domestic psychology. «Informative style» is a reflection of reality in the form of cognitive image (sensory, perceptual, mnemonic, mental). First of all it is a content of an informative image. «Cognitive style» describes mental mechanisms in the process of creating of an informative image. The main thing here is a process of creating an informative image. M.A. Holodnaya gives an often used modern definition: «cognitive style is an individual and peculiar way of processing of information which characterizes person's specific type of mind and distinctive features of his intellectual behavior» [4; 16].

Among the most studied cognitive styles it is possible to mention «tolerance — intolerance to unreal experience».

This cognitive style appears in uncertainty situations. It represents readiness to accept an information which does not correspond to the experience of a person or contradicts it [4; 71].

In foreign psychology tolerance to uncertainty in the broad sense is understood as ability of a person to accept conflict and tension which arise in situation of duality, to resist to discrepancy of information, to accept unknown, not to feel uncomfortable in case of uncertainty. In Russian-speaking psychology tolerance is understood as an integral personal characteristic. It includes psychological stability, the system of values, personal aims and various individual properties [5; 75].

The term «intolerance to uncertainty» is considered in two aspects. In the first case it refers to individual tendencies to perceive and interpret the existing situation or the environment as a threat or a source of discomfort. In the second case it designates the tendency to perceive and interpret the future as a source of discomfort.

E. Frenkel-Brunswick is one of the first who introduced construct of tolerance-intolerance to uncertainty. Her works showed that intolerance to uncertainty is a characteristic of the cognitive style of the person with authoritative (rigid) mind [6; 51].

The term «tolerance» is widely used in researches of thinking. In foreign psychology, there are special constructs — tolerance toward contradictions and tolerance of thinking. They connect with internal regulation of informative strategies.

In Soviet psychology intellectual strategies were investigated on the basis of activity approach. O.K. Tikhomirov's school shows the unity of secondary activity and dynamic aspect of removing uncertainty in mental activities of a person [7; 69].

S. Bochner's conceptual framework is of special interest. There the features of cognitive style are represented as primary characteristics of tolerance and intolerance, while the properties of a personality as secondary ones. Thus, tolerance and intolerance to uncertainty is characteristic of the cognitive style and a personality [6, 52].

Today number of researches establish that people with high tolerance assess the situation according to its actual characteristics not taking into consideration its «commonness», «expectancy». People with low tolerance resist informative experience if it contradicts their knowledge [4; 71].

In general a tolerant person is described as accepting the novelty and uncertainty of the situation, capable of productive work in these conditions. Intolerant person does not accept the novelty of the situation, in the broader sense — the diversity of the world. In this regard, such kind of person is under stress at a possibility of multiple interpretations of stimulus. Uncertain situations are understood as negative, which should be avoided. The possibility of uncertainty is interpreted as «dishonesty» or «abnormality». The conservatism, dogmatism, inflexibility, preference of predictability, clarity and regularity, rejection of variability and originality are appropriate to intolerant personality [5; 76].

Thus, cognitive styles are highly organized mechanism for the regulation of intellectual activity. Their effect is found in a wide range of situations, including training.

Educational activity of students is characterized by some uncertainty, that is, contains a variety of ways and means of setting goals, planning and organization of activity, its self-monitoring and self-evaluation. So, a student has to realize his own motivation and understand what motives are really acting. At lecture he has to decide which conditions are important and useful for him. While preparing to a practical training it is necessary to define what sources will be more appropriate, informative, he must be able to highlight the main thing in them. Uncertainty of this sort increases while writing control work and term papers, research projects. Also the student should plan the activity to meet the deadline appointed by the teacher. It means that the student has to consider his own individual characteristics, properly allocate his time, to build a rational sequence of actions, to be able to reconstruct the plan of work in case of changing the objective and subjective

circumstances. During midterm examination and summative assessment uncertainty appears in the form of tests where it is necessary to choose correct one from a number of answers. In these conditions tolerance to uncertainty as a readiness for changes, novelty, independence can play a positive role in improving the effectiveness of training activities.

With reference to the above mentioned, we have asked a question: «How does the educational motivation, self-control and cognitive style of «tolerance-intolerance to an unrealistic experience» correspond to each other?».

110 first-year students at the age of 18-19 years have taken part in our research. They are trained at faculties: philosophy and psychology, foreign languages, philology, biology and geography, chemistry.

As methodological tools we used:

1. Questionnaire «Motivation of high school education» by T.I. Ilyina [8].

It allows to identify the key motives of high school education:

- «educational attainment» (conation to knowledge acquisition, inquisitiveness);
- «mastering a profession» (conation to master professional knowledge and to create professionally important qualities);
- «obtain a diploma» (conation to acquire the diploma at formal assimilation of knowledge).

2. Questionnaire «The style of self-regulation of behavior» by V.I. Morosanova (1998) [9].

The method of diagnosing the level of development of self-adjustment of students (low, medium, high).

3. «The new questionnaire of tolerance-intolerance to uncertainty» by T.V. Kornilova [5] which diagnoses the cognitive style of «tolerance toward unreal experience». There are three scales in a questionnaire. They are the tolerance to uncertainty, intolerance to uncertainty and an interpersonal intolerance to uncertainty. For the needs of our research we used the first two scales.

At the first stage of the research with the help of the questionnaire «Motivation of high school education» by T.I. Ilyin we defined the leading motives of educating at high school of freshmen.

As a result, the sample has been divided into 3 groups. The first group included students who have a high level of motivation to the educational attainment, as well as to mastering a profession and to obtaining the diploma. The second group included students with average motivation to knowledge acquisition, to mastering a profession and high level to obtaining the diploma motivation. The first-year students who have made the third group are interested in obtaining a diploma, but have little interest in educational activity (Table 1).

Table 1

**Intensity of training motivation in high school (%)**

Group number	The level of knowledge acquisition motivation	The number of respondents	Arithmetical mean on scales		
			Educational attainment	Mastering a profession	Obtain a diploma
1	High	48,2	10,8	6,3	7,1
2	Intermediate	34,5	6,8	4,9	7,4
3	Low	17,3	3,4	4,7	7,4

The level of development of self-regulation of the first-year students was diagnosed with the technique «The style of self-regulation of behavior» by V.I. Morosanova. There are 50 percent of respondents with high level of self-regulation in the sample. The Intermediate level of self-regulation is observed at 43,6% of students, low level is peculiar to only 6,4% of freshmen.

The next step was studying the first-year students tolerance-intolerance by T.V. Kornilova's technique. High level of tolerance to unreal experience, to uncertainty (59,2%) is inherent in the greatest number of students. It reflects their acceptance of changes, readiness for novelty, preference of more complex challenges, aspiration to independence. The group of students following in number possesses intermediate level of tolerance (37,9%). The features described above are expressed at them in average degree. Least of all students show a low level of tolerance (2,9%). They rather prefer clarity, orderliness, do not accept uncertainty, always try to conform to the rules and principles, the variety of methods, they divide opinions into right and wrong.

In connection with motivation and self-regulation data they were distributed as follows (Table 2).

**Intensity of tolerance-intolerance to uncertainty among students  
with different motivation and self-regulation (%)**

Tolerance level	The level of educational attainment motivation			The level of self-regulation		
	High	Intermediate	Low	High	Intermediate	Low
High	62	61,8	47,4	72	48,8	40
Intermediate	32	38,2	52,6	24	48,8	60
Low	6	-	-	4	2,4	-

The majority of persons with high level of tolerance are among the students with high and average motivation to educational activity (62 and 61,8 per cent respectively). In accordance with high and intermediate motivation groups, 32 and 38.2 per cent of first-year students have average level of tolerance. Six per cent of highly motivated students have a low tolerance (intolerant). The results in the group of students with low knowledge acquisition motivation are reverse. The largest number of examinees are with average tolerance (52,6%), and there slightly less high-tolerant students (47,4%) here.

In general, students with high and average motivation to educational activity have the high level of tolerance (arithmetical mean figures are equal to 62,02 and 62,26). The average group index of tolerance at low-motivated students is equal to 59,84 that corresponds to the average level of tolerance.

In the context of self-regulation the results are in the table (Table 2).

The number of students with high tolerance gradually decreases in groups with high, intermediate and low level of development of self-regulation (72, 48,8 and 40 per cent, respectively). However, the percentage of students with the average level of tolerance on the contrary, increases (24, 48,8, 60 per cent). The insignificant number of first-year students with high and average level of self-regulation are characterized as intolerant (4 and 2,4 per cent).

In general, the following tendencies are found. The high level of tolerance is characteristic of students with the created system of self-regulation (an arithmetical mean of 63,38). The average level of tolerance is peculiar for students with the average and low level of self-regulation (arithmetical mean figures 60,68 and 56,9).

Based on the results of the research we made the following inference:

1. 48,2 per cent of first-year students have high level of knowledge acquisition motivation, 34,5 per cent have the average level, 17,3% have low level. At the same time all students are actively focused on obtaining diploma.

2. Half of first-year students (50 per cent) have well-formed level of self-regulation, 43,6 per cent of students have the average level of self-regulation, the low level is inherent to only 6,4% of freshmen.

3. High level of tolerance to uncertainty is noted at 59,2% of students, the average level has been revealed at 37,9 per cent of students, low tolerance is inherent to only 2,9% of sample.

4. There is a tendency to the fact that high and intermediate level of knowledge acquisition motivation is accompanied with the high tolerance. Conversely, the low level of motivation in a greater degree corresponds to the average tolerance.

5. The tendency of interrelation of the well-formed self-regulation and high tolerance; the average level of self-regulation with high and average indicators of tolerance; equally unformed system of self-regulation with the average tolerance is found.

Thus the studied cognitive style, motivation and system of self-regulation of educational cognitive activity are in interaction, thereby providing activity and self-development of students as subjects of educational activity.

We think that studying of cognitive styles has prospects. Primarily it is due to correlation of the problems of cognitive styles with the objectives of secondary school and higher education. Educational reforms stimulate psychologists to approach the traditional problems of «how to learn» and «how to teach» with new criteria of efficiency of these processes. In particular, it is necessary to include individual ways of organization of processes of training and educational activity in number of the analyzed characteristics [10].

We believe that psychological researches in the field of cognitive styles, educational motivation and self-regulation will allow to find solution of the main problem of high school that is to teach students to study independently.

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**«Шынайы емес тәжірибеге қатысты толеранттылық–интолеранттылық»  
когнитивті стиль, мотивация және студенттердің оқу-танымдық  
іс-әрекетінің өзіндік реттелуі арасындағы өзара байланысты зерттеу**

Мақалада бірінші курс студенттерінің «шынайы емес тәжірибеге қатысты толеранттылық–интолеранттылық» когнитивті стилінің, мотивацияның және оқу-танымдық іс-әрекеттің өзіндік реттелуінің ара қатынасы туралы мәселе қарастырылды. Зерттеудің өзектілігі негізделді. Шетел мен отандық психологиядағы оқу-танымдық іс-әрекетінің өзіндік реттелуі және мотивация, сонымен қатар когнитивті стиль түсінігі ұсынылған. Зерттеліп жатқан когнитивті стильдің жалпы сипаттамасы берілген. Студенттердің оқу-танымдық іс-әрекетіндегі ролі көрсетілген. Студенттердің мотивациясының, өзіндік реттелудің және шынайы емес тәжірибесіне қатысты толеранттылық–интолеранттылық көрсеткіштерінің түрлі деңгейлерінің арақатынасы анықталған.

Е.А. Лазарева, А.Ш. Насирова

**Исследование взаимосвязи между когнитивным стилем  
«толерантность–интолерантность к нереалистическому опыту», мотивацией  
и саморегуляцией учебно-познавательной деятельности студентов**

В статье рассмотрен вопрос соотношения когнитивного стиля «толерантность–интолерантность к нереалистическому опыту», мотивации и саморегуляции учебно-познавательной деятельности первокурсников. Обоснована актуальность исследования. Представлено понимание мотивации и саморегуляции учебно-познавательной деятельности, а также когнитивного стиля в зарубежной и отечественной психологии. Дана общая характеристика исследуемого когнитивного стиля. Показана его роль в учебно-познавательной деятельности студентов. Выявлено соотношение различных уровней мотивации, саморегуляции и показателей толерантности–интолерантности студентов к нереалистическому опыту.

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