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# Diagnosis Motivational Mechanism of Educational-Cognitive Motivation of Students

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**Abstract:** The article deals with the motivational mechanisms of learning and cognitive motivation of students. Mechanisms (driving force) of educational and informative motivation described by many researchers, presentation of them formed in the psychological and pedagogical knowledge. An important issue is the time in favor of diagnostic facilities, and proper diagnostic tools.

**Keywords:** Motivation, Educational and Cognitive Motivation, Competence, Diagnosis

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## 1. Introduction

The paradigm of Russian education in its entirety based on the competent approach to the formation of the individual specialist. Taking into account that the foundation of any jurisdiction in favor ability, it is necessary to consider the psychological aspects of the matter. G. Selevko (2004) notes that in addition to the cognitive competence (knowledge) and operational and process (activity) components includes motivational (emotional), as well as ethical, social and behavioral components.

Consider the diagnosis of motivational mechanisms of learning and cognitive motivation of technical college students, as well as diagnostics of how these conditions affect the formation of the teaching and learning motivation of students.

The importance of the formation of educational-informative motivation of students of technical colleges is due to the fact that in the period of study at the university foundations of professionalism, form skills of independent professional activity, which, in turn, can be successfully realized only in the case of the creation of incentive, motivational aspects, as well as consolidate the internal positive motivation in students.

The problem of educational psychology of motivation of cognitive activity is not a new problem. The scientific literature has accumulated theoretical and empirical material

for understanding the essence of cognitive motivation. Scientists have come to the realization that cognitive motivation is the internal needs of the individual related to Smyslozhiznennye values, determining motive power of man to the spiritual nature of the activity.

In the works of LI Bozovic, AN Leontiev, AK Markova, GI Schukinoy provides a general picture of the age dynamics of motives for learning. Laws of formation of motivational sphere of the person revealed in BG research Ananiev, LI Bozovic, LS Vygotskogo, AK Markova, VS Mukhina, VA Permyakova, Piaget and others.

There are studies in which the authors consider a number of aspects of teaching and learning motivation of students. So, GM in the works Belokrylova, AI Dontsova, EL Grigorenko, TV Kornilova, NV Nesterova, M. Nikelicheva, VA Yakunin questions of motivation linked to the question of the personal features of students on this basis carried out a typology of students; substantiates the phased development of cognitive motivation in learning activities. In the works of Claus it shows that the installation on the doctrine and its substantive content have the most persistent effect on the active acquisition of knowledge, in the course of the educational process and its success. The research results NV Yakovleva show that the stable cognitive motives, the higher the student achievement in high school. G. Klaus, NI Mishkova, AA Rean, N. V. Yakovleva, V. A.Y akunin prove that the high positive motivation plays the role of a

compensatory factor in the case of a low level of development of cognitive abilities.

Noting the fruitfulness of these studies, it should be recognized that the process of formation of educational motivation in general and teaching and learning motivation of technical college students in particular, remains little known. This is due to the fact that this problem is one of the most difficult, although deserving special attention problems. Its study is directly related to the search for sources of human activity, the driving forces, thanks to which is carried out any activity, determined by its orientation. In the views of the authors dealing with this issue, there is an inconsistency in the definition of methods of formation of teaching and learning motivation of students during their training in high school; insufficiently studied questions remain about the concept of "educational and cognitive motivation of students of a technical college"; not very clearly defined methods of investigation of formation of informative motivation of students; not given a full justification of the factors that ensure its formation and development.

Currently, the most relevant aspect can be regarded as a problem to find ways to ensure the development of teaching and learning motivation of the students. As one such method is called self-organizing training of students, which contributes to a change in the internal motives and attitudes to learning (AF Zhuravsky, BA Keller, IV Rebelsky et al.). Studies VI Andreev, TN Boldysheva, VN Dontsova, VK Elmanova, NP Erastova, BG Ioganzena, NV Kuzmina, N. Murachkovskogo study self-organization is seen as a principle of organization of independent work of students. It is not investigated specific determinants of motivation of educational activity. Out of sight of scientists are issues such as the formation of persistence in achieving goals, and independence in the performance of different types of learning activities; the formation of skills and abilities and rational use of free training time and optimize its use, the development of skills and abilities of self-learning outcomes. Virtually razrabotan reliable psychodiagnostic tools for the study of teaching and learning motivation of students. The need to fill these gaps in scientific knowledge determines the relevance of our research.

## 2. Materials and Methods

*Table 1. Results of diagnostic power of perseverance on the ascertaining stage of the experiment.*

Indicators	Experimental group	Control group	Uemp	Significance
The power of perseverance (in points)	11	11	1129,00	$p=0,78$ Insignificant $U_{\text{эм}} > U_{\text{кр}}$

Note.  $U_{\text{кр}} = 947$  for  $p \leq 0,05$ ,  $U_{\text{кр}} = 853$  for  $p \leq 0,01$

*Table 2. Time management students a week for ascertaining stage of the experiment, in hours.*

№	Type of work	Experimental group	Control group
1	Classroom training work (scheduled classes)	36	36
	Independent work:	22	22
	• notes	2	2
2	• reading textbooks	4	4
	• search for information on the Internet	5	5
	• essay writing	2	2
	• execution of settlement and graphic works	3	3

To ensure the effectiveness of training and motivation of cognitive activity at the technical college students the following conditions must be met: First, the change in the process of teaching and learning activities, and secondly, the organization of psycho-pedagogical support at all stages of the development of teaching and learning activities.

Obtaining significant changes occurred by comparing data between the control and experimental groups using the nonparametric U-test and Mann-Whitney test, Fisher cp.. U-Mann-Whitney test is designed to assess the differences between the two samples at the same time on the level of expression of a trait. It allows you to establish the similarity / difference between the two empirical distributions (the detection of differences in the level of trait under study) for independent samples (experimental and control groups).

Initially diagnosed indicators that affect the formation of the teaching and learning motivation of the students. These indicators include the following:

- power of perseverance (technique E. P. Ilina, E. K. Feschenko "perseverance Learning);
- the ability of students to consider personal time (a technique A. A. Lyubischeva "Accounting for personal time);
- the ability of students to carry out various types of independent work (modified our technique A. A. Lyubischeva, based on the diagnosis of the implementation of independent kinds of work by students) (AV Smirnov, 2011);
- the ability of students to use in the training activities of Internet service Antiplagiat. Ru.

One of the indicators influencing the formation of the teaching and learning motivation is to develop the students' perseverance forces sustained commitment to achieving achieve remote in time E. P. Ilina purposes using techniques E. K. Feschenko "persistence Study" (tab. 1).

Thus, in the experimental and control groups had the same persistence parameters mean value - 11 points. This suggests that students both control and experimental groups are not sustainable long-term commitment to achieving the objectives of the time; arising difficulties can lead them to achieve their goals. The results of mathematical statistics show no significant difference between the performance of students control and experimental groups.

№	Type of work	Experimental group	Control group
	• Writing a term paper	6	6
	• participation Ying Paper the research and	0	0
3	Reading fiction	0	0
4	Reading newspapers and magazines	1	1
5	View the news on TV	0	0
6	Watching films	9	9
7	Computer games	8	8
8	athletics	1	1
9	Visit the cultural institutions and activities	0	0
	in total	77	77

Further carried out to study the effectiveness of using personal time students using A. A. Lyubischeva techniques. Students were asked to record their daily routine in the table "Time management" (Table. 2). According to the data results, it became clear that both the control and experimental groups of students use personal time for various types of vigorous activity, it is equally the same. Here are the top social motives not related to training activities (movies and computer games).

The ability of students to carry out various types of independent work is diagnosed in terms of "independent work".

Students spend 22 hours a week, which is 3 hours daily on individual self-active. At the same time most of the time spent on independent work time is spent on writing a term paper (about 1 hour daily) and searching for information in the Internet (about 1 hour daily). Difficulties in learning, students explain the lack of time. The results show that the students are not able to efficiently plan your day, that is, show the complete or almost complete lack of personal management. At the same time, the students did not understand the importance and significance of planning their own time and, accordingly, do not exhibit the intercom budgeting efficiency of educational and informative

activities. The leading motives are social reasons - to communicate with their peers, to find a job.

Diagnosis students skills to use in the training activities of Internet service Antiplagiat. Ru carried out directly by said Internet service. An indicator of the ability we thought originality of abstracts and course works of students, expressed as a percentage. We evaluated the effectiveness of personal time spent by students in particular when writing term papers, searching for the information you need on the Internet. The results are comparable to using a non-parametric test  $\phi$ -Fisher. Fisher criterion allows us to compare the value of the sample variances of two series of observations. The results are shown in Table 3.

It was found that the amount of time spent by students on the Internet, due to the search for the essays and term papers are available for download. Prior to the delivery of abstracts and course work students do not explain the reason for overlapping textual material creative work on electronic media, that is, the creative nature of the problematic approach to the implementation of this type of independent work is not compromised. Checking jobs in Internet service Antiplagiat. Ru showed that students mostly ready borrow the same or similar work, placed on sites in the global network.

**Table 3.** Original papers and coursework students to ascertaining stage of the experiment.

№	Type of work	Experimental group	Control group	$\phi_{emp.}$	significance
1	Initial commissioning work	20%	21%	0,35	Insignificant $\phi_{эмп} < \phi_{кр}$
2	Secondary commissioning work	30%	29%	0,17	Insignificant $\phi_{эмп} < \phi_{кр}$

Note.  $\phi_{кр} = 1,64$  for  $p \leq 0,05$ ,  $\phi_{кр} = 2,28$  for  $p \leq 0,01$

Thus, it is revealed that writing term papers directly related to the time spent by students in the global Internet. Originality performed and submitted for review work is very low.

The above indicators affect the formation of the teaching and learning motivation of the students, as determined by us using the procedure "The study of motives of educational activity of students" (A. A. Rean, V. A. Yakunin) techniques Yu. M. Orlova "Scale of assessment of the need to achieve"; also analyzed the academic records, and compiled consolidated statements of students' progress, a ranking of academic groups. After analyzing the results of the diagnostic needs motivation to achieve the students' control and experimental groups on the ascertaining stage of the experiment (method Yu. M. Orlova "Scale of assessment of the need to achieve"), we note: 19% of students in the

experimental group and 18.5% of the students in the control group are a low level of formation of achievement motivation. Most of the students (68% and 70.5% of students in the experimental and control groups, respectively) are at an average level of formation of achievement motivation. Such persistence in achieving performance requirements and suggest a need for a highly individualized approach to the creation of conditions for the formation of educational-informative motivation. The average value of motivation to achieve 5.4 and 5.3 points, respectively, the students of the experimental and control groups. mathematical statistics, results show no significant difference between the performance of students control and experimental groups.

Diagnostics motives of educational activity at students of the control and experimental groups on the ascertaining stage of the experiment (method of "Study of motives of

educational activity of students' A. A. Rean, V. A. Yakunin) showed that the students and the experimental and control groups, the highest rank has value "employment". Perhaps this situation reflects the current difficult economic and political situation in our country and the world at large. Second place in both groups takes value "to develop their intelligence." The following is such a value as to "get a prestigious education", the majority of participants have put it in third place. These results demonstrate the socio-cognitive orientation motives students control and experimental groups. The latter leads to the conclusion that the formation of mechanisms of realization of teaching and learning motivation in students requires careful, individualized approach.

Thus, the ascertaining stage of the experiment, high sustainable teaching and learning motivation in students either in the control or experimental groups were not revealed.

Indicators strength of perseverance in the experimental and control groups have an average value. Most of the students are in the middle and lower levels of formation of achievement motivation. Training cognitive motives and the motives of self-education have low values in the experimental and control groups. The leading motives are social reasons that are not related to training activities, such as watching movies and computer games. Students are not able to efficiently plan your day, that is, show the complete or almost complete lack of personal management. At the same time, the students did not understand the importance and significance of planning their own time and, accordingly, do not exhibit the intercom budgeting efficiency of educational and informative activities. Students are not aware of the connection of accounting and optimal planning of personal time and success of educational activity. On independent learning activities allocated an insufficient number of personal time.

Originality performed and submitted for review abstracts and course work is very low. Progress of students as experimental and control groups is not high. The number of students participating in the various activities undertaken in the framework of the university, is also not high. At the same time students training sessions unexcused pass often enough.

The results of the research, we can conclude that the student motivation parameters as in the experimental and control groups, before forming experiment have similar values. The results of mathematical statistics show no significant difference between the performance of students

control and experimental groups.

### 3. Conclusion

Our results clearly show the need to create special psychological and pedagogical conditions for the formation of teaching and learning motivation of the students in the formation of general and professional competences.

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